

PACIFIC REGION

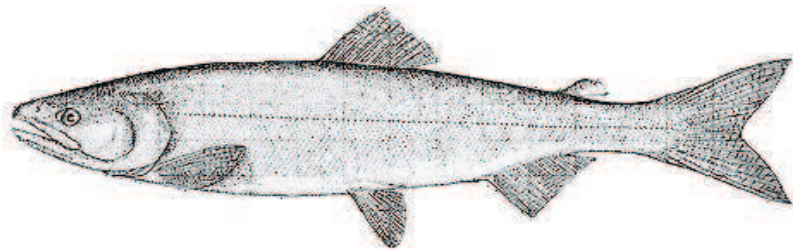
INTEGRATED FISHERIES

MANAGEMENT PLAN

SALMON

SOUTHERN B.C.

JUNE 1, 2010 TO MAY 31, 2011



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/fm-gp/contacts-eng.htm>.

24 Hour Recorded Information (Commercial) Vancouver (604) 666-2828

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

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

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

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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

Acts, Orders, and Regulations (<http://www.dfo-mpo.gc.ca/acts-loi-eng.htm>)

Canada Shipping Act, Coastal Fisheries Protection Act, Department of Fisheries and Oceans Act, Financial Administration Act, Fish Inspection Act, Fisheries Act, Fisheries Development Act, Fishing and Recreational Harbours Act, Freshwater Fish Marketing Act, Navigable Waters Protection Act, Oceans Act.

Reports and Publications (<http://www.dfo-mpo.gc.ca/reports-rapports-eng.htm>)

Administration and Enforcement of the Fish Habitat Protection and Pollution Prevention Provisions of the *Fisheries Act*, Audit and Evaluation Reports - Audit and Evaluation Directorate Canadian Code of Conduct for Responsible Fishing Operations, Departmental Performance Reports, Fisheries Research Documents, Standing Committee's Reports and Government responses, Sustainable Development Strategy.

Waves (<http://inter01.dfo-mpo.gc.ca/waves2/index.html>)

Fisheries and Oceans Canada online library catalogue

Pacific Salmon Treaty (www.psc.org)

Background information; full text of the treaty.

PACIFIC REGION - GENERAL

Main Page (www.pac.dfo-mpo.gc.ca/)

General information, Area Information, Latest News, Current topics.

Policies, Reports and Programs

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

Reports and Discussion Papers, New Directions Policy Series, Agreements.

Oceans Program (http://www.pac.dfo-mpo.gc.ca/oceans/default_e.htm)

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

PACIFIC REGION - FISHERIES AND AQUACULTURE MANAGEMENT

Main Page (<http://www.pac.dfo-mpo.gc.ca/fm-gp/index-eng.htm>)

Commercial Fisheries, New and Emerging Fisheries, Recreational Fisheries, Maps, Notices and Plans.

Aboriginal Fisheries Strategy (http://www.pac.dfo-mpo.gc.ca/tapd/afs_e.htm)

Aboriginal Fisheries Strategy (AFS) principles and objectives; AFS agreements; Programs; Treaty Negotiations.

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

Fishery Regulations and Notices, Fishing Information, Recreational Fishery, Policy and Management, Contacts, Current B.C. Tidal Waters Sport Fishing Guide and Freshwater Supplement; Rockfish Conservation Areas, Shellfish Contamination Closures; On-line Licensing.

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

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

Fisheries Notices (<http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?>)

Want to receive fishery notices by e-mail? If you are a recreational sport licence vendor, processor, multiple boat owner or re-distribute fishery notices, register your name and/or company at the web-site address above. Openings and closures, updates, and other relevant information regarding your chosen fishery are sent directly to your registered email. It's quick, it's easy and it's free.

Integrated Fishery Management Plans

(<http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/MPlans.htm>)

Current Management Plans for Groundfish, Pelagics, Shellfish (Invertebrates), Minor Finfish, Salmon; sample Licence Conditions; Archived Management Plans.

Salmon Test Fishery - Pacific Region

(<http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/salmon/testfish/default.htm>)

Definition, description, location and target stocks.

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

Contact information; Recreational Licensing Information, Commercial Licence Types, Commercial Licence Areas, Licence Listings, Vessel Information, Vessel Directory, Licence Statistics and Application Forms.

Salmon (<http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/index-eng.htm>)

Salmon Facts; Salmon Fisheries; Enhancement and Conservation; Research and Assessment; Consultations; Policies, Reports and Agreements; Glossary of Salmon Terms.

Fraser River/B.C. Interior Area Resource Management and Stock Assessment

(<http://www.pac.dfo-mpo.gc.ca/fraserriver/default.htm>)

Contact information; Test fishing and survey results (Albion, creel surveys, First Nations); Fraser River sockeye and pink escapement updates; Important notices; Recreational fishing information.

North Coast Resource Management (<http://www.pac.dfo-mpo.gc.ca/northcoast/default.htm>)

First Nations fisheries, Recreational fisheries; Commercial salmon and herring fisheries; Skeena Tyee test fishery; Counting facilities; Post-season Review; Contacts.

Yukon/Transboundary Rivers Area Main Page

(http://www.pac.dfo-mpo.gc.ca/yukon/default_e.htm)

Fisheries Management; Recreational fisheries; Habitat; Fisheries Management; Licensing; Contacts.

PACIFIC REGION – OCEANS, HABITAT AND ENHANCEMENT

Main Page (http://www-heb.pac.dfo-mpo.gc.ca/default_e.htm)

Publications (legislation, policy, guidelines, educational resources, brochures, newsletters and bulletins, papers and abstracts, reports); GIS maps and Data (Habitat inventories, spatial data holdings, land use planning maps); Community involvement (advisors and coordinators, educational materials, Habitat Conservation and Stewardship Program, projects, Streamtalk).

PACIFIC REGION - POLICY AND COMMUNICATIONS

Main Page (<http://www.dfo-mpo.gc.ca/media-eng.htm>)

Media Releases; Salmon Updates, Backgrounders, Ministers Statements, Publications; Contacts.

Consultation Secrétariat

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

Consultation Calendar; Policies; National; Partnerships; Fisheries Management, Oceans, Science and Habitat and Enhancement Consultations; Current and Concluded Consultations.

Publications Catalogue

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

Listing of information booklets and fact sheets available through Communications branch.

Species at Risk Act (SARA)

(<http://www.dfo-mpo.gc.ca/species-especes/index-eng.htm>)

SARA species; SARA permits; public registry; enforcement; Stewardship projects; Consultation; Past Consultation; First Nations; Related Sites; For Kids; News Releases.

PACIFIC REGION - SCIENCE

Main Page (<http://www.pac.dfo-mpo.gc.ca/science/index-eng.htm>)

Science divisions; Research facilities; PSARC; International Research Initiatives.

Salmon and Freshwater Ecosystems (SAFE)

(<http://dev-public.rhq.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.htm>)

Research; Research Sites; Research Programs; Fraser River Environmental Watch Program; Publications and Reports; Photo Gallery; Pink Salmon/Sea Lice Monitoring Program.

GLOSSARY

A more comprehensive glossary is available online at:

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

AABM	Aggregate Abundance Based Management
AAROM	Aboriginal Aquatic Resource and Oceans Management
AHC	Area Harvest Committee
AFS	Aboriginal Fisheries Strategy
ATP	Allocation Transfer Program
AUC	Area Under the Curve
BKD	Bacterial Kidney Disease
COHO ABM	Coho Abundance Based Management
COSEWIC	Committee for the Status of Endangered Wildlife in Canada
CPUE	Catch per unit effort
CSAB	Commercial Salmon Advisory Board
CWT	Coded wire tag
ESSR	Excess Salmon to Spawning Requirements
FRP	Fraser River Panel
FSC	Food, social and ceremonial
IHPC	Integrated Harvest Planning Committee
ISBM	Individual Stock Based Management
MVI	Mid Vancouver Island
PICFI	Pacific Integrated Commercial Fisheries Initiative
PSARC	Pacific Scientific Advice Review Committee
PSC	Pacific Salmon Commission
PST	Pacific Salmon Treaty
RCA	Rockfish Conservation Area
SARA	Species at Risk Act
SEP	Salmonid Enhancement Program
SFAB	Sport Fishing Advisory Board
SHMF	Selective Hatchery Mark Fishery
TAC	Total allowable catch
WCVI	West Coast Vancouver Island
WSP	Wild Salmon Policy (<i>Canada's Policy for Conservation of Wild Pacific Salmon</i>)

1. MANAGEMENT CHANGES FOR 2010/2011

List is chronological order by section number

- (NEW) Aquaculture Renewal (Section 3.2)
- (NEW) SARA - Humpback Whales (Section 3.3.2)
- (Revised) Northern and Southern Resident Killer whales (Section 3.3.3)
- (NEW) Management objective for Spring (age 4₂) Fraser River Chinook (Section 4.1.8)
- (REVISED) Management objective for Spring and Summer (Age 5₂) Chinook (Section 4.1.9)
- (REVISED) Management objective for Cultus Lake and Late Run sockeye (Section 4.1.3)
- (REVISED) Management objective for Interior Fraser Steelhead (Section 4.1.6)
- (New) Post-release mortality rates table (Section 5.1.10)
- (NEW) Fraser River chinook fishery guidelines (Section 5.3.1)
- (REVISED) Fraser River sockeye escapement plan (Section 5.5.3)
- (NEW) Cultus Lake sockeye management (Section 5.5.6)
- Commercial, including First Nations inland, Demonstration fishery proposals (Appendix 11)
- (NEW) The Department is implementing start and end fishing reporting requirements for all Southern Commercial Licence Area fleets that do not already have these requirements in 2010.
- Note: changes to specific fishery management actions are not all listed.

2. INTRODUCTION

This 2010/2011 Southern B.C. Salmon Integrated Fisheries Management Plan (IFMP) covers the period June 1, 2010 to May 31, 2011 for First Nations, recreational and commercial fisheries for Pacific salmon in the southern areas of BC. It is designed to describe the approach to fisheries in tidal and non-tidal waters from Cape Caution south to the BC/Washington border, including the Fraser River watershed. Pacific salmon species covered in the plan include sockeye, coho, pink, chum and chinook salmon.

This plan describes the management of Pacific salmon fisheries in southern B.C. and the factors that influence decision-making.

This plan incorporates the results of consultations and input from the Integrated Harvest Planning Committee (IHPC), First Nations, and recreational and commercial advisors and the Marine Conservation Caucus.

Fisheries and Oceans Canada will continue to consult with First Nations, recreational, and commercial fish harvesters to further co-ordinate fishing activities in 2010. Further consultations will occur as updated forecast information becomes available.

Details about on-going policy development and other departmental initiatives can be found on the Fisheries and Oceans Canada website. For more specific information, refer to the Index of Web Based Information section of this document.

3. GENERAL CONTEXT

3.1. Background

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. Each of the policies were developed with considerable consultation from all those with an interest in salmon management. While the policies themselves are not subject to annual changes, implementation details are continually refined where there is general support.

3.2. Policy Framework for the Management of Pacific Salmon Fisheries

Salmon management programs in 2010 will continue to be guided by policy and operational initiatives adopted over the past several years. These include; *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*, the Integrated Harvest Planning Committee and Pacific Region Fishery Monitoring and Reporting Framework.

Canada's Policy for Conservation of Wild Pacific Salmon (also called 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 3.3.1 of this plan or on the internet at <http://www.pac.dfo-mpo.gc.ca/publications/pdfs/wsp-eng.pdf>.

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

Pacific Fisheries Reform, announced by the Department in April of 2005, provides a vision of a sustainable fishery where the full potential of the resource is realized, Aboriginal rights and title are respected, there is certainty and stability for all, and fishery participants share in the responsibility of management. Future treaties with First Nations are contemplated, as is the need to be adaptive and responsive to change. This policy direction provides a framework for improving the economic viability of commercial fisheries, and 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 January 2010 by DFO, the Sport Fishing Advisory Board (SFAB) and the Province of B.C. Guided by this Vision, an action and implementation plan will be 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/fisheries-peche/smon/sfab-ccps/docs/rec-vision.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.

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

The Integrated Harvest Planning Committee (IHPC) for salmon is comprised of First Nations, recreational and commercial interests (as represented by the Sport Fishing Advisory Board and the Commercial Salmon Advisory Board) and the Marine Conservation Caucus (representing a coalition of "environmental" organizations). This committee is recognized to be the primary source of stakeholder input into Salmon Integrated Fisheries Management Plans.

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

In 2002, the Department released the Pacific Region Fishery Monitoring and Reporting Framework. This framework will be used as the main reference tool during coast-wide consultations to identify necessary improvements in fishery monitoring and catch reporting systems. This framework outlines the department's goals, objectives and requirements in catch monitoring.

In February 2009, the British Columbia Supreme Court (BCSC) ruled that the activity of aquaculture is a fishery which falls under exclusive federal jurisdiction pursuant to sub-section 91(12) of the *Constitution Act, 1867* - Sea Coast and Inland Fisheries and, in effect, struck down substantial portions of the provincial regulatory regime governing aquaculture. In light of the BCSC decision, it is clear that only the federal government has the authority to establish the comprehensive regulatory regime needed to ensure that the industry in British Columbia is appropriately regulated and managed. In response to the BCSC decision, the Minister of Fisheries and Oceans has confirmed the commitment of the Government of Canada to establish a federal regulatory regime governing aquaculture pursuant to the *Fisheries Act* in the geographic area of British Columbia.

As part of developing a new regulation, there will be consultations with sector stakeholders and, following pre-publication in Canada Gazette Part I, a 30 to 60-day review period during which further feedback from stakeholders will be taken into account.

The BCSC has given DFO until December 18, 2010 to develop and implement a federal aquaculture regulation for BC.

As part of the new aquaculture regulatory framework in British Columbia, DFO will develop Integrated Aquaculture Management Plans (IAPM) modelled after the existing wild fisheries IFMP. There will be a period of extensive consultations with sector stakeholders to specifically address IAMPs.

For further information refer to the following web link:

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

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

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

This policy provides the aquaculture industry with access to stocks in a manner that is consistent with the department's sustainable management of those stocks. Access requests for aquatic resources will be considered by the regional aquaculture offices in collaboration with the ongoing fisheries management planning process.

Link to the Access Policy:

http://www.dfo-mpo.gc.ca/Aquaculture/ref/AWAR_e.pdf

Link to Aquaculture Policy Framework:

<http://www.dfo-mpo.gc.ca/aquaculture/ref/APF-PAM-eng.htm>

3.3. Conservation

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

Management of a natural resource like salmon has a number of inherent risks. Uncertain forecasting, environmental and biological variability as well as changes in harvester behaviour all add risks that can threaten conservation. Accordingly, management actions will be precautionary and risks will be specifically evaluated. Conservation of salmon stocks is the best approach to reduce risk of long term negative impacts to these stocks and the social and economic values that are derived from them.

3.3.1. Wild Salmon Policy

The WSP, which was approved in 2005, sets out a process for the protection, preservation and rebuilding of wild salmon and their marine and freshwater ecosystems for the benefit of all Canadians. The goal of Canada's Wild Salmon Policy (WSP) is to restore and maintain healthy

and diverse salmon populations and their habitats for the benefit and enjoyment of the people of Canada in perpetuity. To achieve that goal, the WSP requires that biological status be assessed for all geographically, ecologically, and genetically distinct populations, or Conservation Units (CUs). Key elements of the policy include:

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

Additional details regarding WSP and its implementation can be found at:

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

3.3.2. 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”.

Endangered, threatened, and special concern marine species in Pacific region currently listed under Schedule I of SARA are:

1. Blue whale – Endangered
2. Killer whale southern resident population – Endangered
3. Killer whale northern resident population – Threatened
4. Killer whale transient population – Threatened
5. Leatherback turtle – Endangered
6. North Pacific right whale – Endangered
7. Sei whale – Endangered
8. Northern Abalone – Threatened¹
9. Fin whale – Threatened
10. Humpback whale – Threatened
11. Sea otter – Special Concern
12. Green sturgeon – Special Concern
13. Grey whale – Special Concern
14. Harbour porpoise – Special Concern
15. Killer whale offshore population – Special Concern²
16. Olympia oyster – Special Concern

¹ In 2009, COSEWIC re-assessed Northern Abalone as an Endangered. Northern Abalone is currently in the listing process, proposed to be re-listed as Endangered replacing the current Threatened listing.

² In 2008, COSEWIC re-assessed Offshore Killer Whales as Threatened. Offshore Killer Whales are currently in the listing process, proposed to be re-listed as Threatened, replacing the current Special Concern listing.

17. Steller sea lion – Special Concern
18. Longspine Thornyhead – Special Concern
19. Rougheye Rockfishes Types I & II – Special Concern
20. Sixgill Shark – Special Concern
21. Soupfin Shark (Tope) – Special Concern

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

Listing

Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated marine or anadromous species in Pacific region currently under consideration for listing under Schedule I of SARA are:

1. Basking shark – Endangered
2. Bocaccio – Threatened
3. Canary rockfish - Threatened
4. Okanagan Chinook – Threatened
5. Yelloweye rockfish (inside and outside waters) – Special Concern
6. Killer whale offshore population – Threatened
7. Northern Abalone – Endangered

The formal SARA legal listing process begins when the Minister of Environment issues a response statement, detailing how he intends to proceed with the COSEWIC species designations. Response statements can be found on the SARA Public Registry website at: http://www.sararegistry.gc.ca/sar/listing/response_e.cfm.

Listing decisions are likely to take place in spring 2010 for Basking Shark, and Okanagan Chinook. Listing decisions for Bocaccio, Canary Rockfish, Yelloweye Rockfish (inside and outside waters), Offshore Killer Whales and Northern Abalone are likely to take place in spring 2011.

COSEWIC Assessments – For a full list of the 2009 assessment results, please visit http://www.cosewic.gc.ca/rpts/Detailed_Species_Assessments_e.html. In April 2010, COSEWIC will be assessing the status of yellowmouth rockfish, loggerhead sea turtle and spiny dogfish. Assessments produced by COSEWIC help inform the Minister of Environment's decision on whether to list species under Schedule I of SARA.

White Sturgeon

In August of 2006, four populations of white sturgeon (Upper Fraser, Upper Columbia, Nechako, and Kootenay River) were listed as Endangered under SARA, while two populations (Lower Fraser and Mid Fraser) were not. Only those populations listed under SARA are subject to the general prohibitions.

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

Humpback Whales

In 2003, the North Pacific Humpback Whale population was assessed by COSEWIC, and was subsequently listed as Threatened under SARA in January 2005.

A SARA recovery strategy is currently under development. Threats identified in the strategy include entanglement and vessel strike. The draft recovery strategy will undergo regional consultations in spring 2010 and will be available on the DFO SARA Consultation website, <http://www.pac.dfo-mpo.gc.ca/consultation/sara-lep/index-eng.htm>.

Salmon

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

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

Conservation Strategies for Cultus and Sakinaw Lake sockeye have also been finalized, and can be viewed at:

http://www.pac.dfo-mpo.gc.ca/species/salmon/cultus_sockeye_cs/default_e.htm and
http://www.pac.dfo-mpo.gc.ca/species/salmon/sakinaw_sockeye_cs/default_e.htm.

Specific conservation objectives for these and other stocks are laid out in Section 4.

3.3.3. Northern and Southern Resident Killer Whales

Northern resident killer whales are listed as Threatened and southern resident killer whales are listed as Endangered under SARA. There are currently 87 southern residents and approximately 250 northern residents. The final Recovery Strategy for Northern and Southern Resident Killer Whales in Canada was finalized in March 2008, and can be viewed at http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1341. Critical habitat areas were delineated and four key anthropogenic threats were identified: quality and abundance of prey, contaminants, physical disturbance, and acoustic disturbance.

Prey:

Ongoing diet research continues to indicate that resident killer whales feed primarily on chinook salmon during the summer and fall months. The summer and fall spatial and temporal distribution of resident killer whales in coastal waters appears to be associated with the timing and abundance of chinook salmon in coastal areas. Winter and spring feeding and distribution of killer whales are less well understood. Research indicates that chinook salmon represents about 90% of the resident killer whales diet in their SARA designated critical habitat during the months of July and August based on genetic sampling of scales and tissue recovered from feeding events. Chinook are available year round and have a high fat content and caloric value. Research indicates that there is a significant correlation between chinook salmon abundance and killer whales birth rates and survival. Accordingly, management actions as described in the IFMP are intended to protect and conserve a healthy chinook salmon resource for sustainable harvests and to ensure an adequate supply of prey for resident killer whales. Consistent with the Wild Salmon Policy, ecosystems requirements will be incorporated into the South Coast Chinook Management Framework currently being developed. Future research and monitoring may demonstrate the need to implement additional management actions to support the recovery of resident killer whales.

The IFMP reflects the renewed Pacific Salmon Treaty signed in January 2009. The Pacific Salmon Treaty is intended to ensure successful chinook conservation and fishery management measures are implemented under the Treaty to recover, maintain and protect salmon stocks in Canada and the U.S. A comprehensive, scientific, abundance-based framework is used to manage all chinook fisheries subject to the Treaty which sets a numerical limit for catch based on abundance of chinook. The measures in the renewed Treaty will further reduce the West Coast of Vancouver Island Canadian total allowable chinook catch by 30% and the South East Alaska total allowable chinook catch by 15% in 2009. These measures will reduce the chinook harvest in these areas by approximately 101,000 chinook (39K in SEAK and 62K in WCVI AABM fisheries) in the 2009/2010 chinook year compared with pre-renewal arrangements. In addition, the status of chinook populations is monitored and a range of additional harvest reductions are outlined under the Treaty if specific chinook stocks or stock groups decline below specified levels to protect and conserve biological diversity and production under a range of conditions. The IFMP also include domestic conservation measures including harvest reductions in a range of First Nation, recreational and commercial fisheries to protect specific stocks of concern including West Coast of Vancouver Island, Lower Georgia Strait, and Fraser River chinook populations. All of these chinook measures are intended to protect and conserve a healthy and

productive chinook resource with sustainable harvests and ecosystem benefits to resident killer whales and other species.

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.

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.pac.dfo-mpo.gc.ca/fm-gp/species-especes/mammals-mammiferes/index-eng.htm>

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

Critical Habitat

In the March 2008 Recovery Strategy for the northern and southern resident killer whales, their critical habitat was defined. On February 23, 2009 a Species at Risk Act Section 58(4) Order by the Ministers of Fisheries and Oceans, and Environment was posted to protect that critical habitat from destruction. These actions include enforcement, protection, management, research, stewardship and public education directed towards the threats to critical habitat identified in the Recovery Strategy i.e. quality and abundance of prey, contaminants, and physical and acoustic disturbances. These actions are undertaken by multiple DFO sectors. The outcomes will inform further actions.

3.4. Marine Mammal Management Plans

DFO is currently developing SARA Management Plans for four marine mammals listed as Special Concern: offshore killer whale, harbour porpoise, grey whale, and Steller sea lion. These plans, which will be posted on the SARA Registry for public comment in 2010, describe species biology, distribution, and threats, as well as recommending potential actions to protect these species, and mitigate impacts from key threats. Several key threats to these species include

oil spills, chemical pollution, acute noise stress, reduced prey availability, habitat degradation and fishing gear entanglement.

Fisheries Depredation

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

Depredation is a learned behaviour that can spread throughout whale social groups and once established is impossible to eliminate. It is critical that BC 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 commercial and sports fish harvesters.

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

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

Marine Mammal Incident Response Program and Marine Mammal Sightings Network

Marine mammals incidents comprise a range of occurrences which may include; live strandings, dead, sick or injured animals, entanglements or potential violations (disturbance, harm or harassment).

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

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

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

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

www.cosewic.gc.ca/

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

Contacts for marine mammal inquiries:

Fisheries and Oceans Canada Contacts:

MarineMammals@pac.dfo-mpo.gc.ca

Paul Cottrell (604) 666-9965

John Ford (250) 729-8375

3.5. EC Assessing the Impact of Salmon Gill Net Fishing on local Seabird Populations

A number of seabird species around the world have experienced significant population declines in recent years; fisheries by-catch has been identified as one of the factors contributing to declines in some species.

Seabird entanglements have been documented in all types of fisheries. Seabird by-catch has been reported in BC as well as neighboring Alaska and Washington State fisheries. However, the extent of seabird entanglements in the present day BC salmon gill net fishery as well as its impact on local seabird populations is not well documented.

Environment Canada is responsible for ensuring that fishing activities do not compromise bird conservation. Environment Canada is also drafting new regulations under the *Migratory Birds Convention Act* to manage incidental take of birds unintentionally destroyed during the operation of legitimate activities such as forestry, mining, agriculture, electrical generation and transmission, fishing, etc. Consequently, Environment Canada is committed to determining how, when and where gill net fishing may impact local seabirds and identifying potential ways to mitigate impacts.

Environment Canada, in collaboration with DFO, First Nations, non-government organizations, and other coastal communities, has initiated a multi-faceted program to answer this question. Specifically,

- a) We will estimate the current level of incidental take by collecting dead seabirds submitted by fishers and collaborators and conduct post-mortem examinations to confirm cause of death. Fishing effort and net parameter details will be collected to better link seabird by-catch with specific fishing activities. This data will provide seabird by-catch estimates which reflect present day seabird populations and fishing effort.
- b) During fishery openings in the Prince Rupert and Port Hardy areas, Environment Canada biologists will conduct surveys to record seabird density and activity in close proximity to fishing vessels. Local fishers will be provided the opportunity to provide us geo-referenced locations of important fishing areas. Aerial surveys may be conducted in collaboration with DFO over-flights during fishing openings. This data will provide a better understanding of the interaction between local seabirds and fishing activities.
- c) Environment Canada researchers will monitor seabird productivity at globally significant Rhinoceros Auklet colonies at Lucy Island, Pine Island and Triangle Islands. Satellite transmitters will be mounted on individuals to record preferred at-sea foraging areas.
- d) DFO researchers will use DNA fingerprinting to determine the seabird colonies from which by-catch mortalities originated.

- e) Environment Canada will develop a spatial-temporal analysis model to determine how, when and where fishing may impact local seabirds.

To assist us with our efforts, we would appreciate obtaining any birds found or reported dead in gill nets and/or found floating dead on fishing grounds. Please report all incidents to our 24h reporting line: 1-866-431-BIRD (2473).

For additional information, please contact: Laurie Wilson, Wildlife Toxicologist, EC – Canadian Wildlife Service, Delta, BC. Tel: (604) 940-4679 or email: laurie.wilson@ec.gc.ca.

3.6. First Nations and Canada's Fisheries Framework

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

- improving relations with First Nations;
- providing a framework for the management of the First Nations fishery in a manner that was consistent with the 1990 Supreme Court of Canada Sparrow decision;
- greater involvement of First Nations in the management of fisheries; and
- increased participation in commercial fisheries (Allocation Transfer Program or 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.

The Aboriginal Aquatic Resources and Oceans Management (AAROM) program has been implemented to fund aggregations of First Nation groups to build the capacity required to coordinate fishery planning and program initiatives. AAROM is focused on developing affiliations between First Nations to work together at a broad watershed or ecosystem level where there are common interests and where decisions and solutions can be based on integrated knowledge of several Aboriginal communities. In the conduct of their activities, AAROM bodies are working to be accountable to the communities they serve, while working to advance collaborative relationships between member communities, DFO and other interests in aquatic resource and oceans management.

As part of the reform of Pacific fisheries and implementation of the Pacific Integrated Commercial Fisheries Initiative (PICFI), announced in 2007, DFO is looking for opportunities to increase First Nations participation in economic fisheries through an interest-driven business planning process. New planning approaches and fishing techniques will be required to ensure an economically viable fishery. In recent years some First Nations in-river "demonstration fisheries" have been initiated where some of these facets of potential future fisheries have been explored. Similar projects could be anticipated again in 2010 subject to available commercial TAC. The Department is also working with First Nations and others with an interest in the salmon fishery to have better collaboration of fishery planning and to improve fisheries monitoring and catch reporting for all fish harvesters.

Through the Co-Management and Enhanced Accountability elements of PICFI, DFO is also continuing to work toward improved engagement and collaboration with First Nations and other interests in fisheries management, as well as the need for enhanced fisheries monitoring, catch reporting, enforcement and steps towards a new traceability program for salmon.

3.6.1. Pacific Integrated Commercial Fisheries Initiative

The Pacific Integrated Commercial Fisheries Initiative (PICFI) is an initiative announced in 2007 aimed at achieving environmentally sustainable and economically viable commercial fisheries, where conservation is the first priority and First Nations' aspirations to be more involved are supported. The Government of Canada has committed \$175 million over five years to implement the initiative. PICFI builds on fisheries reform work begun in response to the 2004 reports of the First Nations Panel on Fisheries and the Joint Task Group on Post-treaty Fisheries, as well as subsequent discussions in a wide variety of forums that have confirmed the need for PICFI.

3.6.2. Fishery Monitoring and Catch Reporting

A complete, accurate and verifiable fishery monitoring and catch reporting program is required to successfully balance conservation with the objectives of optimal harvest levels. Across all fisheries, strategies are being developed to improve catch monitoring programs by identifying standards that must be achieved as well as clarifying roles and responsibilities of the Department and harvesters. The Department is using the consultation document on catch monitoring standards for the commercial salmon fishery.

Further details are contained in Section 8. New technologies (e.g., E-logs) are also being tested to facilitate the timely submission of data directly into centralized DFO databases.

3.7. Scientific Support

The research activities of the Department's science branch are summarized in scientific papers that are peer reviewed through the Pacific Scientific Advice Review Committee (PSARC). The advice is then forwarded to the appropriate sectors for review and adoption as required.

Specific areas of focus for Pacific salmon research in 2010 include:

- Continuing progress on the ecosystem research initiative in the Strait of Georgia in support of the ecosystem approach to resource use.
- Continuing investigations into climate change and salmon fisheries issues.
- Assessments of specific stocks (priority assessments identified by Fishery Management) and continuation of Cultus and Sakinaw lake sockeye recovery efforts
- Annual pre-season forecasts of abundance and run timing for specific salmon populations for fishery planning.
- Initial implementation of WSP methodology to identify upper and lower benchmarks for salmon CU's, completion of habitat and ecosystem indicators and Regional reviews.
- Implementation of WSP pilots for development of strategic plans – Barkley Sound (Area 23) salmon

- Implementation of programs designed to address priority actions for Chinook in the Pacific Salmon Commission report on the Coded-Wire Tagging Program as described in the renegotiated annexes of the Pacific Salmon Treaty.
- Implementation of a Sentinel Stock Program for Chinook salmon spawning in the WCVI, Fraser River, and northern B.C. as described in the renegotiated annexes of the Pacific Salmon Treaty.
- Support of the aquaculture site selection and screening process by providing science advice for decision making.

3.8. Pacific Salmon Treaty

In March 1985, the United States and Canada agreed to co-operate in the management, research and enhancement of Pacific salmon stocks of mutual concern by ratifying the Pacific Salmon Treaty (PST).

The Pacific Salmon Commission (PSC), established under the PST, provides regulatory and policy advice as well as recommendations to Canada and the United States (US) with respect to interception salmon fisheries. The chapters in Annex IV outline the joint conservation and harvest sharing arrangements between Canada and the US for key stocks and fisheries subject to the Treaty. Five of these chapters, set to expire at the end of 2008, were recently renewed and ratified by the Parties: Chapter 1 (Transboundary Rivers); Chapter 2 (Northern Boundary); Chapter 3 (Chinook); Chapter 5 (Coho); and Chapter 6 (Chum). [See section on “PST Renewal - 2009” below]. Chapter 4, which covers Fraser River sockeye and pink salmon, is scheduled to expire at the end of 2010.

Under the terms of the Treaty, the responsibility for in-season management of all species rests with the Parties to the agreement, except for the in-season management of Fraser River sockeye and pink salmon. The Fraser River Panel (FRP) is specifically delegated the responsibility for in-season management, with assistance from the PSC.

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

Coded-wire tag (CWT) data are essential to the management of chinook and coho salmon stocks under the PST. In 1985, the United States and Canada entered into an August 13, 1985 Memorandum of Understanding in which “the Parties agree to maintain a coded-wire tagging and recapture program designed to provide statistically reliable data for stock assessments and fishery evaluations”. Both countries recognize the importance of the CWT program to provide the data required to evaluate the effectiveness of bilateral conservation and fishing agreements. An expert panel review concluded the CWT system is the only technology currently capable of providing the data required for PST management regimes for chinook and coho salmon, thus confirming the approach being employed.

PST Renewal

On December 23, 2008, Canada and the US ratified new provisions for five chapters under Annex IV of the PST. These new chapters came into effect on January 1, 2009 and the new management regimes continue to be implemented by DFO and US agencies for the 2010 season (including this draft IFMP). Significant changes from the previous chapters are highlighted, below:

Chapter 1 (Transboundary Rivers): The Transboundary chapter sets out the conservation and harvest sharing arrangements for sockeye, coho, chinook, and pink salmon for several transboundary rivers flowing from the Yukon to the Pacific through southeast Alaska, including the Stikine, Taku, and Alsek Rivers. The renewed chapter includes new harvest sharing arrangements for sockeye on the Taku River and a renewed commitment to the joint enhancement program for sockeye in the Transboundary Area.

The chapter also includes new arrangements for the management of sockeye on the Alsek River, including the ability of either party to recommend new commercial fisheries. The agreement includes new provisions for Canada to access salmon that are surplus to the spawning requirements outlined in the chapter and maintains the previous harvest sharing arrangements for chinook, sockeye and coho salmon on the Stikine River, as well as chinook and coho on the Taku River.

Chapter 2 (Northern Boundary): This chapter, as well as the chinook chapter, governs fisheries covered in the NC Salmon IFMP. The new chapter reflects only minor, administrative changes from the previous regime (i.e. the previous conservation and harvest sharing arrangements for Northern British Columbia and Southeast Alaska chum, sockeye and pink fisheries are maintained).

Chapter 3 (Chinook): The new chinook regime includes significant changes from the previous agreement. Building on changes made in 1999, the Parties have agreed to maintain the current abundance-based management regime for chinook, including the existing aggregate abundance based management (AABM) fisheries and individual stock based management (ISBM) fisheries. The most significant aspects of the new chinook chapter include harvest reductions in Canadian and US fisheries to address conservation concerns in both countries: the previous catch ceilings for the Southeast Alaskan (SEAK) AABM fishery have been reduced by 15%, while the catch ceilings for the Canadian WCVI AABM fishery have been reduced by 30% from previous levels.

In addition, the chapter includes new, additional provisions to protect weak stocks, including the potential for further harvest reductions in the SEAK and Northern BC AABM fisheries, as well as the individual stock-based management (ISBM) fisheries in both countries, should certain stocks fail to meet escapement objectives outlined in the agreement.

The agreement also includes provisions for a bilateral funding framework to support implementation of the new chinook chapter. The fund will be endowed by both Canada and the US, with the following key elements: (i) \$30M which Canada can access to help mitigate

the impacts of harvest reductions in Canada; (ii) \$15M (\$7.5M from each country) over five years to support the coast-wide coded-wire tag (CWT) program; (iii) \$10M from the Northern and Southern Endowment Funds for a "Sentinel Stocks Program"; (iv) up to \$3M which Canada can access to support pilot projects and the evaluation of mass-marking and mark-selective fisheries in Canada; and (v) \$1M from the US to improve the analytical models to implement the chinook agreement.

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

Chapter 6 (Chum, Southern BC and Washington State): Substantive changes to the chum chapter were agreed to by both countries in 2006. However, the new chapter incorporates further revisions, including: the introduction of a 20% fixed harvest rate in Johnstone Strait, linking the U.S. catch ceiling to the abundance of Fraser River chum (i.e. in the case of a terminal run size below 900,000 chum salmon, the U.S. would restrict its fisheries in Area 7 and 7A to 20,000 chum), and the establishment of a "critical level" for southern-bound chum salmon of one million. There will also be a defined start date for U.S. fisheries in Areas 7 and 7A of October 10 and the removal of the previous "underage" provisions for U.S. harvest.

3.9. 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 BC to ensure coordinated approaches to improving fishermen's safety. See Appendix 2 for more information.

4. OBJECTIVES

4.1. Fishery Management Objectives for Stocks of Concern

4.1.1. Lower Strait of Georgia Chinook

The objective for Lower Strait of Georgia (LGS) chinook in 2010 is to reduce fishery exploitation in known areas of significant impact.

Chinook escapements to many Lower Strait of Georgia (LGS) systems generally continue to be at low levels, due in large part to poor marine survival. The Cowichan River is the primary indicator of marine survival and exploitation for the LGS fall chinook. In recent years, natural spawning chinook have been well below the goal of 6,500 spawners for the Cowichan River since 1998 and well below goal since 2002. Natural spawners in 2009 were less than 10% of goal.

LGS chinook are impacted by mixed stock chinook harvest in commercial troll fisheries off the west coast of Vancouver Island and recreational fisheries off the west coast of Vancouver Island, in the Strait of Juan de Fuca and in the Strait of Georgia, and in terminal First Nations fisheries. Restrictions introduced in 2004 through 2009 (PST reductions to the WCVI harvest rate are reducing WCVI commercial troll TAC; restrictions and closures in the terminal and approach

areas for recreational harvesters and First Nations) will continue. Additional measures may be proposed.

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

4.1.2. Interior Fraser River coho, Lower Fraser coho and Strait of Georgia coho

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

Conservation measures with the objective of reducing harvest related impacts to Interior Fraser coho were first implemented in 1998. Since then, the conservation objective has been clarified to limit the exploitation rate to 3% or less.

Returns in 2010 will be produced from the 2007 brood year escapement of 58,000 fish. Poor marine survivals continue to be an ongoing concern, as do freshwater habitat impacts, both of which will continue to limit recovery and further the requirement to continue with actions to limit exploitation.

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

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

4.1.3. Cultus Lake and Late Run

The 2010 objective for Cultus Lake sockeye is to limit the exploitation rate to a maximum of 20% to 30%, depending on in-season information. Management at the start of the season will be based on a maximum 20% exploitation rate limit for Cultus Lake sockeye. The exploitation rate limit may increase to a maximum of 30% if in-season information on the Late run sockeye stock aggregate, which includes Cultus Lake sockeye, indicates a strong return and sufficient numbers will reach the spawning grounds. If in-season information indicates a poor return of Late run sockeye or that low numbers may reach the spawning grounds, then the actual exploitation rate for Cultus Lake

sockeye could be lower than 20%, and will depend on the exploitation rate implemented for the Late run sockeye management aggregate.

For the Late run sockeye management aggregate stock group, abundance based TAM rules will be implemented. (refer to escapement tables 13(a) and 13(b) in Section 5.5)

Cultus Lake sockeye is a component of the Late Run Fraser River sockeye aggregate which is typically harvested in southern BC waters in August and September. Concerns for the entire Late Run aggregate have been acute since 1996 due to a trend of abnormal early migration and associated high levels of pre-spawn and en-route mortality.

The returns of sockeye salmon to Cultus Lake have been particularly low relative to historic averages. To work toward rebuilding of this population, late run fishery management actions have been implemented to ensure low to moderate fishery exploitation levels on this stock. Enhancement measures have included fry and smolt releases as well as a captive brood program and supplementation of wild spawners with hatchery fry and smolt releases. Freshwater measures in the past have included: predator control to remove pikeminnows in Cultus Lake, removal of Eurasian watermilfoil and contaminant studies. Studies conducted in 2007 and 2008 were designed to estimate the abundance and behaviour of the pikeminnow population as well as the efficacy of the predator control program. A scientific review of the efficacy of recovery measures has recently been completed and a report summarizing the findings will be posted on the Canadian Science Advisory Secretariat web-site at: <http://www.dfo-mpo.gc.ca/csas/>.

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

- Closures in all fisheries with the possibility of impacting Cultus or Late Run fish when harvest limits for this stock group have been reached.
- Restrictions to First Nations fisheries in Queen Charlotte and Johnstone Straits, Strait of Georgia, Strait of Juan de Fuca, west coast of Vancouver Island and the lower Fraser River downstream of the Vedder River. However, where surpluses are identified, first priority will be accorded to First Nations for opportunities to harvest fish for FSC purposes.
- Restrictions to recreational salmon fisheries in southern BC. This will include sockeye non-retention in specific locations when Cultus Lake sockeye are present and allowable harvest limits have been reached.
- Closures to commercial salmon fisheries in southern BC when Late Run sockeye are present, or expected to be present in the area as it will not likely be possible to identify Cultus Lake sockeye in-season in 2010 due to relative low abundances of Cultus Lake sockeye compared to other co-migrating sockeye stocks. These closures will come into effect when allowable harvest limits for this stock group have been reached. Fisheries directed at other stocks or species of salmon will be subject to late run/Cultus constraints.

Within the Fraser River upstream of the Fraser/Vedder confluence, recreational and First Nations fisheries for Late Run Fraser River sockeye will be constrained under conditions of early river

migration timing or adverse migration conditions which can be expected to result in a high level of enroute mortality.

Work is continuing to promote the rebuilding of the Cultus Lake population. Smolt assessment including, the application of special tags to track both smolt and adult migration patterns, will be undertaken. Predator control measures will be continued and studies to increase the understanding of threats to freshwater habitats will be done. In addition, enhancement activities include a captive brood program, where a small segment of the population is held until maturity, and supplementation of wild spawners with hatchery reared fed fry, parr and smolts. Release targets for the enhancement program are 50,000 smolts into Sweltzer Creek, and 150,000 parr and 550,000 fed fry into Cultus Lake itself. Enhancement activities may be revised based on recommendations from the recent scientific review of recovery actions.

For more details on harvest constraints on the Cultus Lake and late run sockeye stock group aggregate refer to Section 5.5 Fraser River sockeye decision guidelines.

4.1.4. Sakinaw Lake Sockeye

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

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

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

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

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

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

- Restrictions in First Nations FSC fisheries prior to the last week of July.
- Recreational fisheries in Queen Charlotte Strait, Johnstone Strait, and upper Strait of Georgia will be closed to sockeye retention prior to the last week of July. The waters near the mouth of Sakinaw Creek in Area 16 will be closed to fishing all season. In

addition, there will be sockeye non-retention restrictions in Area 16 until early to mid August at which time sockeye retention opportunities are expected to be available in Sabine Channel.

- Commercial fisheries in Queen Charlotte Strait and Johnstone Strait will be closed prior to the last week of July, and upper Strait of Georgia (including Sabine Channel) until early to mid August.

Recovery planning efforts to ensure rebuilding of this stock will continue to be supported. In addition to harvest related measures, there will be continued efforts made to improve the habitat (debris removal from spawning areas), investigations into the impacts of predation (seals, otters and lamprey), and enhancement work. Eggs are incubated in nearby hatchery facilities and the resulting fry are returned to the lake. The captive brood program will continue as a form of insurance to reduce the possibility of extirpation. There were no returns of sockeye spawners in 2007 and 2008 and only one spawner enumerated in 2009. The 2007 smolt production which should have been the main component of the 2009 return was 4,000 smolts. The 2008 smolt production which should be the main component of the 2010 return was 12,000 smolts.

4.1.5. 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%.

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

Management actions will continue to be required in 2010 consistent with the exploitation rate objective. For purposes of calculating the WCVI allowance for north coast chinook fisheries, all WCVI chinook caught and kept in Canadian fisheries are assumed to be returning in the present year. Fisheries that this limit applies to are the northern troll, QCI sport, WCVI troll and WCVI sport. 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.

As in the past, commercial troll fisheries in the North Coast will be monitored in-season using DNA analysis to minimize impacts on these stocks. While DNA analysis will guide in season management actions, the official measure of success will be made using post-season CWT cohort analysis.

The total allowable catch under the PST for 2010 for North coast AABM fisheries, which include Areas 1 and 2 for recreational and Areas 1 through 5 for commercial troll, is 152,100 chinook.

The TAC for West Coast of Vancouver Island AABM fisheries is 143,700 chinook. The Area F troll fishery will be managed to 3.2% of the WCVI return; a limit of 2,600 WCVI chinook.

2010 is the second year that the Annex IV provisions of the 2008 PST agreement will be implemented. Therefore, the 2010 allowable catches represent a 15% reduction for the SEAK, 0% reduction for NBC, and a 30% reduction for WCVI AABM fisheries from the allowable catches under the 1999 PST agreement. These measures will reduce the chinook harvest in these areas by approximately 101,000 chinook (39K in SEAK and 62K in WCVI AABM fisheries) in the 2009/2010 chinook year compared with pre-renewal arrangements.

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

4.1.6. Interior Fraser Steelhead

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

Based on the management framework developed by the province and endorsed by DFO, the limit reference point (LRP) for minimum spawning escapements identified for the Thompson and Chilcotin River steelhead groups is 1250 fish. The escapement of steelhead in 2009 for Thompson and Chilcotin combined was an estimated 980 fish, which is less than the LRP of 1250. Monitoring of stock abundance will continue.

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

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

4.1.7. Nimpkish sockeye

The objective is to minimize the impact of Canadian fisheries.

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

4.1.8. Fraser Spring 4₂ Chinook

The objective for Fraser Spring 4₂ chinook in 2010 is to conserve these populations by continuing to minimize incidental harvests in Canadian ocean fisheries. For directed fisheries in the Fraser River, the objective is to minimize directed harvests of Spring 4₂ chinook until July 15th. Fisheries beginning July 15th will be managed consistent with the management zone identified for Spring 5₂ and Summer 5₂ Fraser Chinook (see section

4.1.9) given timing overlaps between these populations for much of the adult migration period.

In the 2010 Salmon Outlook, Spring 4₂ chinook has been classified as *stock of concern* given poor survival rates and very poor spawning escapements in recent years. Returns of Spring 4₂ chinook in 2010 will come primarily from a parent generation of 10,637 spawners in 2006.

Fraser Spring 4₂ chinook is one of five management units for Fraser chinook used in the Pacific Salmon Treaty process. This group contains two conservation units spawning in the interior Fraser areas including three populations previously referred to as Early-timed chinook (see Table 1). Spring 4₂ chinook return to spawn from early March through late July and migration peaks in June in the lower Fraser River. These populations primarily mature as adults at age-4 (90%) with lower numbers maturing at age-5 (7%) and occasionally at age-3 (3%).

Coded wire tagged (CWT) Nicola River Chinook released from the Spius Creek hatchery are the PST exploitation rate indicator stock used to assess survival and exploitation rates of Spring 4₂ in Canadian and US fisheries. Based on CWT recoveries from fisheries, Fraser Spring 4₂ chinook have historically been encountered in Fraser River First Nation net fisheries, Fraser River and tributary recreational fisheries, marine troll fisheries (e.g. WCVI and North Coast), and recreational fisheries in the Strait of Juan de Fuca and Strait of Georgia, with lower rates in other marine recreational fisheries. The total Canadian exploitation rates in 2006-07 averaged 43% with marine fisheries accounting for 6.4% of the total. Exploitation rates were reduced in 2008 with a total of 34% in Canada; marine fisheries accounted for 4.5% of the total. Exploitation rates in US fisheries are low and occur mainly in southern areas and average less than 2%.

There is a high potential for very low abundances of Spring 4₂ chinook in 2011 and subsequent years if poor survival rates persist, given very low spawner abundances in the parental generations. Returns in 2011 will come mainly from 1,489 spawners in 2007. Additional consultations will occur in 2011 if changes are contemplated on fishery plans for First Nations, recreational and commercial harvesters.

Over the next year, the Department will also be consulting on a longer term, comprehensive management framework for southern BC chinook populations that considers the effects of fishery related impacts, enhancement activities, and habitat and ecosystem status on these populations. Revisions to management actions may be considered based on development of the southern BC Chinook management framework. Additional work is also required to develop a biologically-based escapement target for the Spring 4₂ management unit.

4.1.9. Spring 5₂ and Summer 5₂ Fraser Chinook

The objective for Spring and Summer (age 5₂) Fraser chinook is to continue rebuilding these populations consistent with the management zones outlined below.

In the 2010 Salmon Outlook, Spring 5₂ and Summer 5₂ chinook stocks have been classified as *stock of concern* given poor survival rates and declines in spawning escapements compared to the parental generation in recent years.

The Fraser Spring 5₂ and Summer 5₂ chinook are two of five PST management units for Fraser chinook. This group contains 11 conservation units and includes four populations previously referred to as Early-timed chinook. Spring 5₂ chinook return to the Fraser River to spawn from early March through late July and migration peaks in late June in the lower Fraser. Summer 5₂ chinook has later timing and return to the Fraser River to spawn from late June to August with a peak in late July. These populations primarily mature as adults at age-5 (approx. 70%) and age-4 (approx. 20%) with lower numbers at age-3 and age-6.

The Department proposes to use the relationship between the cumulative Catch Per Unit Effort (CPUE) of chinook caught in the Albion chinook test fishery for the period beginning May 1 to the estimated terminal return of Fraser chinook as the basis for a 3 zone management approach described below. If survival rates for Spring 5₂ and Summer 5₂ chinook are similar to those for Spring 4₂ chinook in 2009, the projected 2010 return before fisheries could be less than 20,000. As a result, the Department plans to proceed with management actions consistent with zone 1 (below) unless the test fishery indicates returns are larger.

The management actions for Spring 5₂ and Summer 5₂ chinook below will be in place after July 15 to the end of July. These management zones will also guide fishery management actions for Spring 4₂ chinook in the Fraser River (see section 5.3) given that the adult migration timing overlaps for much of the migration period and management actions will affect all three of these management units.

Table 1: Spring 5₂ and Summer 5₂ Fraser Chinook Management Zone Approach

Management Zones:

Zone	Predicted Return to the Fraser River	Rationale and Actions
3	Greater than 60,000	<p>Rationale: Populations rebuilding towards maximum sustained yield (MSY) levels.</p> <p>First Nations directed fisheries.</p> <p>Directed recreational and commercial fisheries consistent with Allocation policy.</p>
2	Below or equal to 60,000	<p>Rationale: Caution required to avoid population declines. Populations well below MSY levels.</p> <p>Limited directed fisheries.</p> <p>First Nations directed fisheries subject to abundance.</p> <p>By-catch retention/ limited directed Fraser recreational fisheries may be initiated.</p> <p>Management actions to reduce by-catch or incidental harvest in commercial fisheries.</p>

1	Below or equal to 30,000	<p>Rationale: Significant conservation concerns. Very high risk of extremely low spawning populations.</p> <p>Directed fisheries minimized.</p> <p>By-catch retention /limited directed First Nations fisheries.</p> <p>Non-retention/closed recreational and commercial chinook fisheries in the Fraser River and tributaries</p> <p>Management actions to reduce by-catch or incidental harvest in other recreational and commercial fisheries.</p>
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While PST escapement targets and exploitation rate targets have not been formally identified, a number of considerations were used to establish management zones:

- Zone 3: Preliminary analysis of the number of spawners required to utilize the productive capacity of the habitat to produce maximum sustained harvests (S_{MSY}) for these populations is approximately 138,000 spawners (including ~80,000 Spring 5_2 and ~57,000 Summer 5_2). In 15 of the past 35 years spawner abundances greater than 60,000 were observed; the highest spawner abundance recorded for these populations was 92,000 in 2003.
- Zone 2: The number of spawners at 40% of S_{MSY} , a metric suggested as a lower abundance benchmark, is 55,000 spawners. The original PST base period doubling goal is approximately 60,000 spawners. Since a harvest rate of up to 10% may occur in limited directed fisheries, a terminal run of 60,000 was used as a reference point. In 15 of the past 35 years, spawner abundances have been between 30,000 and 60,000.
- Zone 1: The average escapement of Spring and Summer (age 5_2) Fraser chinook during the 1979-1982 base period was about 30,000 spawners; a level at which substantial management actions were taken to rebuild populations. This number of spawners is half of the value of 40% S_{MSY} increasing the likelihood of extremely low spawner abundance in CUs; only 5 of the past 35 years had spawner abundances less than 30,000.
- Additional analysis, consultations and discussions on the management zones, escapement targets, and fishery management approaches are planned to further refine the management approach for future seasons. Work is also ongoing to develop WSP benchmarks for Fraser chinook conservation units. While there is no single formula for selecting lower benchmarks, 40% S_{MSY} has been suggested as one metric. For Fraser Spring 5_2 and Summer 5_2 chinook, the stream by stream sum of the estimates of S_{MSY} is about 138,000, and the estimate of 40% of S_{MSY} is about 55,000. Further analysis may indicate that a greater total return is required to maintain most conservation units above their lower benchmarks and provide adequate geographic distribution of spawners among conservation units.

The prediction of the return to the Fraser River based on the Albion test fishery catches will be made on June 15, 2010. If the predicted return is within 17% of the current management zone, the Department may decide to continue to manage based on the current management zone. A 17% buffer reflects the uncertainty in the regression equation that relates the cumulative Albion catches to date to the estimated terminal run of Spring 5₂ and Summer 5₂ chinook to the Fraser River, thus minimizing the chance of moving to a lower or higher zone inappropriately.

Currently, there is not a PST indicator stock for these management units, however, information from past CWT recoveries from these populations indicates that Spring 5₂ chinook have been encountered in areas similar to Spring 4₂ chinook. Summer 5₂ chinook are also encountered in the same areas, but relative impacts between fisheries may differ given the later migration timing of these Summer 5₂ stocks.

Over the next year, the Department will also be consulting on a longer term, comprehensive management framework for southern BC chinook populations that considers the effects of fishery related impacts, enhancement activities, and habitat and ecosystem status on these populations.

4.1.10. Inshore Rockfish

The management objective for inshore rockfish is to continue conservation strategies that will ensure stock rebuilding over time. A fishing mortality rate of less than 2.0 percent (all Pacific Region fisheries) will be required to achieve this objective.

Rockfish Conservation Areas (RCAs) are no fishing zones for fishing gear that impact on rockfish. There are currently 164 RCAs along the coast of British Columbia. The RCAs have been implemented within the Strait of Georgia and in all outside waters including the Queen Charlotte Islands. The conservation strategy for rockfish along the coast of British Columbia is long term. Rockfish are a long-lived species with a low level of productivity and therefore rebuilding will take several decades. The strategy addresses four areas under the fisheries management and stock assessment regime:

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

Fish harvesters are reminded prior to fishing to check with the local DFO office to verify RCA and other closures currently in effect. A description of all RCAs can be found at:

http://www.pac.dfo-mpo.gc.ca/recfish/Restricted_Areas/rca_e.htm

4.2. First Nations Objectives

The objective is to manage fisheries to ensure that, after conservation needs are met, First Nations' food, social and ceremonial requirements and treaty obligations to First Nations

have first priority in salmon allocation in accordance with the *Allocation Policy for Pacific Salmon*.

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

4.3. 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 expectation and opportunity 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 policies.

4.4. International Objectives

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

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

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

4.5. Domestic Allocation Objectives

The objective is to manage fisheries in a manner that is consistent with the *Allocation Policy for Pacific Salmon* and the 2010 Pacific Salmon Allocation Implementation Plan.

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

The Allocation Policy for Pacific Salmon also identifies the priority for commercial allocation of salmon harvest and sets sharing arrangements for each of the three commercial fishing gear groups. The target commercial gear share is 40% seine, 38% gill net and 22% troll. An explanation of some of the features of Allocation planning is set out in Section 5.1.7.

4.6. Compliance Management Objectives

Conservation and Protection Program Description

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

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

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

In carrying out activities associated with the management of Pacific salmon as outlined in this management plan, C&P will utilize principle-based approaches and practices which are consistent with the National Compliance Framework and the DFO Compliance Model. More information can be found on both of these documents at the following intranet site:

http://intra.dfo-mpo.gc.ca/hq/fishmgmt/Directorates/CP/CRM/index_e.htm

Regional Compliance Program Delivery

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

- Maintain and develop relationships with First Nations communities, recreational groups and commercial interests through dialogue, education and shared stewardship.
- Work towards the goal of increased accountability, traceability and compliance within all salmon fisheries. Illegal sales of salmon will continue to be a regional priority.
- Prioritize enforcement efforts on those measures directed towards conservation objectives.
- Fish Habitat protection will continue to be a key focus of fishery officer efforts.
- Utilize 'Integrated Risk Management' to ensure fishery officer efforts are focused and directed at problems of highest risk.
- Maintain high profile fishery officer presence through patrols by vehicle, vessel and aircraft to detect and deter violators.
- Monitor and support at-sea observers and dockside monitors to ensure accurate catch monitoring and reporting. Implement traceability initiatives within the salmon fishery towards increased accountability (PICFI).
- Monitor and verify catches and offloads of salmon to ensure accurate catch reporting and accounting.
- Audit and monitor catch reporting data to ensure timely and accurate catch and effort reporting.
- Maintain or increase fishery officer efforts to protect Fraser River salmon stocks with priority to those stocks of concern.
- Increase fishery officer efforts to protect Fraser River Spring 4₂, WCVI and Cowichan chinook stocks.
- Continue to utilize covert surveillance (unmarked vessels/ vehicles and plain clothes fishery officers) to detect violations and gather evidence in problem fisheries.

- Employ targeted compliance monitoring with the use of enhanced surveillance techniques, video cameras/long distance spotting scopes, trail cameras and vessel mounted digital video.
- Implement a program of ‘Intelligence-led investigations’ to specifically target enforcement efforts and increase successes.
- Increase patrol effort during open timed fisheries to increase intelligence gathering, build relationships with stake holders and ensure compliance to licence conditions.
- Inspect fish storage and retail outlets for compliant product.
- Maintain a violation reporting 24-hour hotline to ease reporting of violations.
- Continue to promote ‘restorative justice’ principles in all fisheries.

Consultation

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

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

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

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

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

Compliance Strategy

In 2010, specific objectives for the salmon fishery will be to focus compliance management efforts on:

- Maintaining enhanced coverage both on the Fraser River and in marine approach waters (Johnstone Straits and San Juan) by undertaking vessel, vehicle, and air patrols (contingent of continued Williams funding).
- Work to curtail illegal sales through a program designed to improve traceability of catch (improved catch monitoring and plant / storage verification).

- Working with Resource Management and stakeholders on the concept of dual fishing for salmon (e.g. fishing for FSC and commercial purposes on the same commercial trip), ensuring that should this be approved, all necessary controls are in place to protect an orderly and controlled fishery.
- Continued improvements in fishery monitoring and catch reporting requirements.
- Blitz patrols for illegal retention of prohibited species.
- Close time patrols balanced with random open time patrols.
- Work with stakeholders to improve regulatory compliance.
- Recreational - daily limits, non-retention and closed area enforcement.
- Maintain or increase fishery officer efforts to protect Fraser River salmon stocks with priority to those stocks of concern.
- Somass Sockeye conservation, catch monitoring and unauthorized sales. Continue as in past years the 'Somass Strategic Approach' area specific project management enforcement plans.
- Increase fishery officer efforts to protect Fraser River, WCVI and Cowichan chinook stocks of concern through implementation of area specific project management enforcement plans.
- Monitor and verify catches and offloads of salmon to ensure accurate catch reporting and accounting.
- Conduct frequent and timely inspections of fish storage and processing facilities through a coordinated program of catch accountability and traceability. Communication and transfer of intelligence between areas and provincial authorities will be strengthened.
- Audit and monitor catch reporting data to ensure timely and accurate catch and effort reporting.

The management of Pacific salmon remains a high priority for C&P for 2010. There are, however, other priorities and sustaining agenda activities which must be delivered by C&P for other mandated program areas such as habitat management, the Canadian Shellfish Sanitation Program, maritime security, and the protection of species at risk.

In order to balance multiple program demands, C&P utilizes a comprehensive risk-based integrated work planning process to address the highest risks to sustainability and establish annual operational priorities. This process ensures that resources are allocated in alignment with identified priorities to achieve broad departmental objectives in a way that best serves the interests of Canadians.

4.7. Enhancement Objectives

Enhancement Operations facilities will continue efforts focused toward production supporting conservation and sustainable fisheries and provide key support to other priority watershed and public involvement activities.

DFO will continue working with hatcheries operated by volunteers and by communities under contract to DFO, to meet shared objectives for conservation, public stewardship, community capacity development, habitat conservation and fish production.

4.7.1. Background

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

The following tables detail proposed enhancement targets for hatcheries and managed spawning channels operated by DFO staff or contracted to community and native groups. Egg targets are determined pre-season for each stock and consider potential adult production based on average fecundities, average incubation to release survival rates and average marine survival rates. Expected adults were calculated based on long-term average survivals for the species, area and stage at release and may not reflect current marine survivals.

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

Hatcheries may collect additional eggs for other programs for education, research or stock re-establishment. These additional eggs are not included in the hatchery egg targets in the following tables, but are noted in the comments. For the 2010 brood year, targets are included for: major DFO operations (Enhancement Operations or OPS), contract hatcheries (Community Economic Development Program or CEDP), projects funded by the Aboriginal Fisheries Strategy (AFS) and larger or more complex Public Involvement Projects (Designated Public Involvement or DPI), operated by volunteers. The smaller Public Involvement Projects that are not included are focused toward stewardship, stock rebuilding or educational activities and do not release large numbers of fish that would affect fisheries. Facilities may also enhance steelhead and cutthroat under the direction of the Province of BC. Targets for these species are not included. SEP also works with First Nations, industry, community groups and other government agencies to design and implement habitat restoration projects. Habitat related activities are not addressed in this management plan.

4.7.2. General

Production targets are proposed in the IFMP for the coming brood year following discussions held within DFO, usually in January of each year. Several DFO sectors are involved in the production planning meetings including Oceans, Habitat and Enhancement Branch (OHEB), of which SEP is a part, Stock Assessment Division (StAD) and Fisheries and Aquaculture Management Branch (FAM). These meetings involve biologists, fish management personnel, hatchery staff and Community Advisors. Suggestions for changes are proposed and discussed. Reasons for proposed changes may include: need to reduce targets where there is a large surplus of adults returning to the river; need to increase targets where a stock needs rebuilding; or need to increase targets to produce enough fish to tag for use as an indicator stock. Targets are rarely reduced solely on the basis of changes in budget allocations. The biological implications are always considered and priorities developed. Proposals for changes to targets that were agreed to at the meetings and accepted by the Area Chiefs are included in the IFMP, as part of the external

consultative process. Reasons for the proposed changes are given in the comments following the tables.

Small adjustments are made to some egg targets to reflect current fecundity and rearing survival to maintain consistent release numbers. Adult broodstock at some hatcheries are screened for the presence of the causative organism of Bacterial Kidney Disease (BKD), depending on the prevalence of BKD in the stock. BKD is a common disease in Pacific salmon populations which can be problematic in fish culture. There may be small numbers of surplus chinook and coho fry released into natal streams from Spius Creek Hatchery, depending on the incidence (i.e. the lower the incidence of BKD, the higher the fry release). Recently, this has ranged from 0-30k.

4.7.3. Chinook

Most Salmonid Enhancement Program (SEP) production targets will remain similar to last year's targets and are outlined below. Production targets and release strategies are still under development for those designated as TBD (To Be Determined). The format has been changed, leaving out the egg targets and adding information on type and numbers of marks. Note that 2010 Brood Expected Adults are based on recently updated SEP 5-year average biostandards and are the numbers of adults that can be expected over several years from the 2010 brood target release.

Table 2(a): Proposed 2010 Brood Production Targets for Chinook – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Big Qualicum R	Fall	Big Qualicum R	Big Qualicum R	Smolt 0+	Tag	450,000	3,500,000	3,500,000	7,000
Capilano R	Fall	Capilano R	Capilano R	Smolt 0+			460,000	460,000	4,600
			Burrard Inlet	Seapen0+			100,000	100,000	1,000
Chehalis R	Summer	Chehalis R	Chehalis R	Smolt 0+			390,000	390,000	1,170
	Fall	Harrison R	Harrison R	Smolt 0+	Tag	200,000	300,000	300,000	3,000
Chemainus R	Fall	Chemainus R	Chemainus R	Smolt 0+	Tag	50,000	160,000	160,000	480
Chilliwack R	Spring	Chilliwack R	Chilliwack R	Smolt 0+			50,000	50,000	150
	Summer	Chilliwack R	Chilliwack R	Smolt 0+			410,000	410,000	1,230
	Fall	Chilliwack R	Chilliwack R	Smolt 0+	Tag	300,000	1,000,000	1,000,000	35,000
Conuma R	Fall	Conuma R	Conuma Est	Seapen0+			1,700,000	1,700,000	27,000
	Fall	Sucwoa R	Sucwoa Est	Seapen0+			40,000	40,000	600
	Fall	Tlupana R	Tlupana Est	Seapen0+			40,000	40,000	600
Inch Cr	Summer	Maria Sl	Maria Sl	Smolt 0+			100,000	0	0
L Qualicum R	Fall	L Qualicum R	L Qualicum R	Smolt 0+			2,250,000	2,250,000	6,750
Nitinat R	Fall	Nitinat R	Nitinat Lk	Smolt 0+			3,000,000	3,000,000	30,000
	Fall	Sarita R	Sarita R	Smolt 0+			100,000	250,000	2,500
			Poett Nook	Seapen0+			300,000	250,000	2,500
Puntledge R	Summer	Puntledge R	Puntledge R	Seapen0+	Tag	60,000	200,000	400,000	1,200
				Smolt 0+	Tag	120,000	1,600,000	1,400,000	4,200
	Fall	Puntledge R	Puntledge R	Smolt 0+	Tag	60,000	1,200,000	1,200,000	6,000
Quinsam R	Fall	Quinsam R	Quinsam R	Smolt 0+	Tag	500,000	1,900,000	1,900,000	5,700
			Discovery Pass	Seapen0+	Tag	100,000	1,000,000	1,000,000	3,000
			Campbell R	Unfed			960,000	960,000	960
Robertson Cr	Fall	Nahmint R	Nahmint R	Smolt 0+	Tag	50,000	165,000	165,000	2,310
				Seapen0+	Tag	25,000	60,000	60,000	900

	Fall	Robertson Cr	Robertson Cr	Smolt 0+	Tag	450,000	6,000,000	6,000,000	84,000
Shuswap R	Summer	Shuswap R Low	Shuswap R Low	Smolt 0+	Tag	500,000	530,000	530,000	4,770
	Summer	Shuswap R Mid	Shuswap R Mid	Smolt 0+	Tag	150,000	150,000	150,000	1,500
Spus Cr	Spring	Coldwater R	Coldwater R	Smolt 1+			65,000	65,000	585
	Spring	Nicola R	Nicola R	Smolt 1+	Tag	200,000	200,000	200,000	1,800
	Spring	Salmon R/TOMF	Salmon R/TOMF	Fed Fry			70,000	70,000	210
	Spring	Spus Cr	Spus Cr	Smolt 1+			65,000	65,000	585
Tenderfoot Cr	Summer	Porteau Cv	Porteau Cv	Seapen0+			800,000	0 TBD	
			Squamish Est	Seapen0+			400,000	0 TBD	
			Elaho R	Fed Fry			0	800,000 TBD	1,200
		Ashlu Cr	Ashlu Cr	Smolt 0+			0	100,000 TBD	300
		Squamish R	Squamish R	Smolt 0+			0	100,000 TBD	300
		Cheakamus R	Cheakamus R	Smolt 0+	Tag	100,000	100,000	100,000	100

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Table 2(b): Proposed 2010 Brood Production Targets for Chinook – Community Economic Development Program and Designated Public Involvement Projects.

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Alouette R	Fall	Chilliwack R	Alouette R, S	Smolt 0+			200,000	50,000	500
Chapman Cr	Fall	Lang Cr	Chapman Cr	Smolt 0+			100,000	100,000	300
Clayoquot	Fall	Kennedy R Low	Kennedy R Low	Smolt 0+			380,000	380,000	3,800
Cowichan R	Fall	Cowichan R	Cowichan R	Fed Spr	Tag	100,000	600,000	150,000	150
			Cowichan R	Smolt 0+	Tag	500,000	1,000,000	600,000	1,800
			Cowichan Bay	Seapen0+	Tag	50,000	100,000	250,000	1,000
Englishman Enh	Fall	L Qualicum R	Englishman R	Fed Spr			210,000	210,000	630
Esquimalt Har	Fall	Nitinat R	Esquimalt Har	Seapen0+			172,000	225,000	675
Gillard Pass	Fall	Phillips R	Phillips R	Smolt 0+			90,000	100,000	300
			Fanny By/JNST	Seapen0+			90,000	100,000	300
Goldstream R	Fall	Goldstream R	Goldstream R	Smolt 0+			240,000	240,000	720
Gwa'ni	Fall	Nimpkish R	Nimpkish R Low	Smolt 0+				112,500	340
		Woss R	Woss Lk	Smolt 0+			180,000	112,500	340
Kingfisher /TOMF	Summer	Shuswap R, Low	Shuswap R, Low	Fed Fry			150,000	150,000	1,350
L Campbell R	Fall	L Campbell R	L Campbell R	Smolt 0+			75,000	75,000	225
Nanaimo R	Summer	First L/GSVI	First L/GSVI	Smolt 0+			180,000	180,000	540
	Fall	Nanaimo R	Nanaimo R	Smolt 0+			350,000	425,000	2,125
Nicomekl R	Fall	Serpentine R	Nicomekl R	Smolt 0+			50,000	50,000	150
Nootka Sd Wtrshed Soc	Fall	Burman R	Burman Est	Seapen0+			350,000	350,000	5,250
	Fall	Gold R	Gold R	Smolt 0+			300,000	300,000	3,000
Oyster R	Fall	Oyster R	Oyster R	Smolt 0+			45,000	45,000	135
Port Hardy/Marble	Fall	Marble R	Marble R	Smolt 0+			900,000	900,000	9,000
			Quatsino Sd	Seapen0+			90,000	90,000	1,350
Powell R	Fall	Lang Cr	Lang Cr	Smolt 0+			150,000	150,000	450
			Duck Lk	Smolt 0+			600,000	600,000	1,800
			Willingdon Est	Seapen0+			40,000	40,000	120

San Juan R	Fall	San Juan R	San Juan R	Smolt 0+			720,000	720,000	7,200
Sayward F&G	Fall	Salmon R/JNST	Salmon R/JNST	Smolt 0+			120,000	120,000	360
Sechelt	Fall	Lang Cr	Maclean Bay	Seapen0+			75,000	75,000	225
Serpentine R	Fall	Serpentine R	Serpentine R	Smolt 0+			57,600	57,600	180
Sliammon R	Fall	Lang Cr	Sliammon R	Smolt 0+			150,000	150,000	450
			Theodosia R	Seapen0+			150,000	150,000	450
Sooke R	Fall	Sooke R	Sooke R	Fed Spr			225,000	225,000	340
		Nitinat R	Sooke R	Smolt 0+			213,000	213,000	640
			Sooke Est	Seapen0+			50,000	50,000	150
Tahsis	Fall	Leiner R	Leiner R	Seapen0+			110,000	110,000	1,100
		Tahsis R	Tahsis R	Seapen0+			110,000	110,000	1,100
Thornton Cr	Fall	Thornton Cr	Thornton Cr	Smolt 0+			216,000	216,000	2,160
	Fall	Toquart R	Toquart R	Smolt 0+			170,000	170,000	1,700
Tofino	Fall	Bedwell R	Bedwell R	Smolt 0+	Tag	10,000	58,000	58,000	580
		Cypre R	Cypre R	Smolt 0+			160,000	160,000	1,600
		Tranquil Cr	Tranquil Cr	Smolt 0+			36,000	36,000	360

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Capilano River Hatchery: rearing 100K Chinook in sea pens near the West Vancouver Laboratory.

Chilliwack River Hatchery: continue to enhance the small population indigenous to the upper reaches of the Chilliwack River. The target proposed is a maximum and is unlikely to be achieved as it is extremely difficult to access adults in the upper river. They also take extra eggs from the fall run for transfers to small PIP projects in the lower mainland (20K smolts to each of two seapens in Burrard Inlet and 50K smolts to Coquitlam River).

Conuma River Hatchery: the DFO target is for 1.7M seapen smolts from Conuma River. There is a collaborative agreement for an additional 1 million Conuma chinook in place for the 2010 eggtake with the Nootka Sound Watershed Society.

Inch Creek Hatchery: no longer producing Stave River chinook. The sport fishery on these chinook is so small that it is no longer necessary to continue with enhancement. A decision was made to monitor Maria Slough and enhance that stock only when needed. Returns are fairly consistent now.

Puntledge River Hatchery: The sea pen release strategy will continue due to concerns over seal predation.

Shuswap River Hatchery: targets for Lower and Middle Shuswap rivers were revised after the IFMP was released in 2009 and before the eggs were taken. Money is now available to tag the 500K Lower Shuswap chinook needed to make it a full Pacific Salmon Treaty indicator stock. The Middle Shuswap and Okanagan sockeye targets were both reduced to allow room for the Lower Shuswap. Middle Shuswap chinook will also be tagged.

Tenderfoot Creek Hatchery: continue to enhance Cheakamus chinook, although Canadian National Railway is now paying only for assessment as part of the mitigation for the caustic soda spill that occurred in 2005. There is a proposal to shift focus away from the Porteau Cove sea pen operation that would see the sea pen operated only in alternate years (not in 2010, but in 2011). This would provide fish for fisheries, but allow the hatchery to pursue some rebuilding goals. The proposal is for the hatchery to take the usual number of eggs, some from Porteau returns and some from individual stocks within the Squamish system. The fry resulting from Porteau broodstock collection would be released into the upper Elaho River at less than 1 gram

in size in an effort to rebuild this major Squamish system stock. The chinook migrating from the upper Elaho were mainly yearlings, due to the cold water and slow growth associated with it, so the small fry will have plenty of time to adapt to these conditions after release. Habitat restoration projects will continue to be developed on the major chinook salmon spawning tributaries within the Squamish River watershed.

Alouette River Hatchery: will reduce to 50K smolts released, which should be enough to supply a small fishery. Adult returns to the river have improved and will result in added production.

Cowichan River Hatchery; the target was reduced to 1M eggs (900K smolt release), due to ongoing problems with the water supply. This number may not be attained with the present returns to the river because enhancement guidelines allow for only 33% of the female returns to the river to be collected for brood stock purposes.

Goldstream River Hatchery: target for the chinook stock is incidental as it is a very minor stock in this river. They incubate and rear Nitinat eggs for the sea pens at Esquimalt Harbour (included here) and Saanichton (too small to be included).

Gwa'ni Hatchery: stock is taken from several tributaries in the Nimpkish watershed. The exact division of the smolt release between the two sites may change.

Kingfisher Creek Hatchery: some chinook are released as unfed fry and some as 1-2 gm fed fry. Nootka Sound Watershed Society: the society has taken over enhancement of Burman and Gold rivers. Eggs will be incubated and initial rearing will occur at Conuma River Hatchery. Final rearing will take place in the Gold River area. Collaborative agreement for additional 1 million Conuma Chinook done at Conuma River Hatchery is in place for 2010 eggtake.

Powell River Hatchery: the sea pen smolt release was reduced to 40K (one sea pen). They also transfer out 40 K smolts that are not included in the target above to a sea pen operated by the Texada Island Volunteers.

4.7.4. Coho

Most Salmonid Enhancement Program (SEP) production targets will remain similar to last year's targets and are outlined below. Production targets and release strategies are still under development for those designated as TBD (To Be Determined). The format has been changed, leaving out the egg targets and adding information on type and numbers of marks. Note that 2010 Brood Expected Adults are based on recently updated SEP 5-year average biostandards and are the numbers of adults that can be expected over several years from the 2010 brood target release. A series of experimental coho smolt release studies is being considered to investigate productive capacity in the Strait of Georgia, possibly beginning with 2010 brood.

Table 3(a): Proposed 2010 Brood Production Targets for Coho – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Big Qualicum R	Fall	Big Qualicum R	Big Qualicum R	Smolts	Tag & Ad	40,000 & 760,000	1,000,000	800,000 TBD	4,800
			Big Qualicum R	Fed Spr			0	200,000 TBD	600
Capilano R	Fall	Capilano R	Capilano R	Smolts	Ad	525,000	525,000	525,000	10,500
Chehalis R	Fall	Chehalis R	Chehalis R	Smolts	Ad	800,000	800,000	800,000	12,000
Chilliwack R	Fall	Chilliwack R	Chilliwack R	Smolts	Ad	1,200,000	1,200,000	1,200,000	24,000

Conuma R	Fall	Conuma R	Conuma R	Fed Spr			52,000	52,000	364
				Smolts	Ad	50,000	50,000	50,000	700
Inch Cr	Fall	Inch Cr	Inch Cr	Smolts	Tag & Ad	100,000 & 50,000	150,000	150,000	2,250
	Fall	Norrish Cr	Norrish Cr	Smolts	Ad	150,000	150,000	150,000	2,250
	Fall	Stave R	Stave R	Smolts	Ad	225,000	225,000	225,000	3,375
Nitinat R	Fall	Nitinat R	Nitinat R	Smolts	Ad	100,000	100,000	100,000	1400
			Darlington Lk	Fed Spr	Ad	25,000	25,000	25,000	175
			Flora Lk	Fed Spr	Ad	25,000	25,000	25,000	175
			Francis Lk	Fed Spr	Ad	50,000	50,000	50,000	350
Puntledge R	Fall	Puntledge R	Puntledge R	Fed Spr			200,000	1,800,000 TBD	3,600
				Smolts			600,000	0	0
Quinsam R	Fall	Quinsam R	Quinsam R	Fed Spr			100,000	100,000	500
				Smolts	Tag & Ad	80,000 & 720,000	800,000	800,000	7,200
Robertson Cr	Fall	Robertson Cr	Robertson Cr	Smolts	Tag & Ad	40,000 & 160,000	400,000	200,000	5,400
Shuswap R	Fall	Duteau Cr	Duteau Cr	Fed Spr			30,000	0	0
			Duteau Cr	Smolts			0	0	0
Spilus Cr	Fall	Coldwater R	Coldwater R	Fed Spr			20,000	20,000	200
				Smolts	Tag	40,000	70,000	65,000	1,300
	Fall	Deadman R	Deadman R	Smolts			30,000	30,000	600
	Fall	Eagle R	Eagle R	Smolts	Tag	20,000	20,000	65,000	1,300
	Fall	Salmon R/TOMF	Salmon R/TOMF	Fed Spr			60,000	65,000	650
				Smolts			70,000	65,000	1,300
Tenderfoot Cr	Fall	Cheakamus R	Cheakamus R	Smolts			90,000	90,000	1,350
	Fall	Mamquam R	Mamquam R	Smolts	Ad	45,000	45,000	45,000	675
			Loggers Lane Cr	Fed Spr			50,000	50,000	350
	Fall	Tenderfoot Cr	Tenderfoot Cr	Smolts	Ad	130,000	130,000	130,000	1,950
			Brohm Lk	Fed Spr			50,000	50,000	350

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin.
TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Table 3(b): Proposed 2010 Brood Production Targets for Coho – Community Economic Development Program, Designated Public Involvement Projects and Aboriginal Fisheries Strategy Projects.

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Expected Adults
Alouette R	Fall	Alouette R S	Alouette R S	Fed Spr			100,000	100,000	800
				Smolts	Ad	80,000	80,000	80,000	1,200
Chapman Cr	Fall	Chapman Cr	Chapman Cr	Smolts	Ad	80,000	80,000	80,000	1,200
			Halfmoon Bay	Seapen	Ad	20,000	20,000	20,000	300
Fanny Bay	Fall	Cook Cr	Cook Cr	Smolts			0	0	0
		Rosewall Cr	Rosewall Cr	Smolts	Ad	85,000	85,000	85,000	850
Gillard Pass	Fall	Quinsam R	Stuart Is Str	Fed Spr			20,000	20,000	100
Goldstream R	Fall	Goldstream R	Goldstream R	Smolts	Tag	20,000	90,000	135,000	1,350
Gwa'ni	Fall	Nimkish R	Nimkish R	Fed Spr			85,000	0	0
			Nimkish R	Smolt			0	100,000	900

Halalt Band	Fall	Bonsall Cr	Bonsall Cr	Fed Spr			45,000	45,000	225
Horseshoe Bay	Fall	Capilano R	Horseshoe Bay	Seapen	Ad	5,000	5,000	5,000	75
Huu-uy-aht	Fall	Pachena R	Pachena R	Fed Spr			8,100	8,100	110
Kanaka Cr	Fall	Kanaka Cr	Kanaka Cr	Fed Spr			80,000	80,000	640
				Smolts	Ad	10,000	50,000	10,000	150
L Campbell R	Fall	L Campbell R	L Campbell R	Fed Spr			24,300	24,300	194
				Smolts	Ad	30,000	30,000	30,000	450
Little R	Fall	Little R	Little R	Fed Spr			15,000	15,000	75
				Smolts	Ad	30,000	30,000	30,000	300
Nanaimo R	Fall	Nanaimo R	Nanaimo R	Fed Spr			100,000	140,000	700
				Smolts			84,000	84,000	840
	Fall	Nanaimo R	Millstone R	Fed Spr			60,000	60,000	300
Nicomekl R	Fall	Nicomekl R	Nicomekl R	Smolts	Ad	75,000	75,000	75,000	1,125
Orford R	Fall	Orford R	Orford R	Smolts			25,000	50,000	450
Oyster R	Fall	Oyster R	Oyster R	Fed Spr			100,000	100,000	500
				Smolts			40,000	40,000	400
Port Hardy/Marble	Fall	Marble R	Marble R	Fed Spr			162,000	40,000	280
			Marble R	Smolts			0	120,000	1,680
		Washlawlis R	Washlawlis R	Unfed			90,000	135,000	540
		Waukwaas Cr	Waukwaas Cr	Unfed			40,000	30,000	120
				Smolts	Ad	100,000	60,000	100,000	1,400
Port Hardy/Quatse	Fall	Cluxewe R	Cluxewe R	Fed Spr			45,000	30,000	150
				Smolts	Ad	100,000	90,000	100,000	900
	Fall	Quatse R	Quatse Lk	Fed Spr			22,500	15,000	75
			Quatse R	Fed Spr			22,500	15,000	75
				Smolts	Ad	100,000	90,000	100,000	900
Powell R	Summer	Lang Cr	Haslam Lk	Fed Spr			200,000	200,000	1,600
			Lang Cr	Smolts	Tag	80,000	80,000	80,000	1,200
San Juan R	Fall	San Juan R	San Juan R	Fed Spr			175,000	175,000	2,450
Sechelt	Fall	Chapman Cr	Maclean Bay	Seapen	Ad	85,000	85,000	85,000	1,275
		Capilano R	Maclean Bay	Seapen	Ad	85,000	85,000	85,000	1,275
Serpentine R	Fall	Serpentine R	Serpentine R	Smolts	Ad	75,000	75,000	75,000	1,125
Seymour R	Fall	Seymour R	Hurry Cr	Smolts	Ad	40,000	40,000	40,000	600
			Seymour R	Fed Spr			40,000	40,000	380
Sliammon R	Fall	Sliammon R	Sliammon R	Fed Fall			50,000	50,000	400
Sooke R	Fall	Demamiel Cr	Young Lk	Fed Spr			35,000	135,000	675
			Young Lk	Smolts			80,000	0	0
Thompson R N	Fall	Dunn Cr	Dunn Cr	Smolts			20,000	20,000	400
	Fall	Lemieux Cr	Ianson Ch	Smolts	Tag	20,000	20,000	30,000	600
	Fall	Louis Cr	Louis Cr	Smolts	Tag	10,000	20,000	20,000	400
Thornton Cr	Fall	Thornton Cr	Thornton Cr	Smolts			40,000	22,500	315
Tofino	Fall	Cypre R	Cypre R	Fed Spr			81,000	81,000	570
		Kootowis Cr	Kootowis Cr	Fed Spr			81,000	81,000	570
		Tranquil Cr	Tranquil Cr	Fed Spr			60,000	0	0

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin. Use a double finclip for some chum (eg, AdLV).

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Production of adipose clipped smolts for potential harvest opportunities of 2010 brood coho will continue for small stocks not covered in the IFMP, including: Coquitlam River in the Lower Mainland and French Creek and Millard Creek on Vancouver Island.

Big Qualicum River Hatchery: there is a proposal under discussion to release 200K coho as fed fry and 800K as smolts.

Capilano River Hatchery: also incubates and rears 100K smolts for sea pens at Sechelt in years when they are needed.

Conuma River Hatchery: the DFO target is for a 52K fed fry release. An additional egg collection and release of 50K coho as yearling smolts will occur, subject to funding by the Nootka Sound Watershed Society (NSWS) through a collaborative agreement with DFO. NSWS volunteers regularly clip coho releases from Conuma Hatchery to allow for marked coho retention in years when mark-selective fisheries are conducted.

Inch Creek Hatchery: increased production of Norrish Creek coho in 2009, which contributes to a large sport fishery in Nicomen Slough. The hatchery releases a double-index tag group on Inch Creek stock (40K Adipose-clipped CWTs and 40K CWTs without adipose clips to represent unmarked natural river production in the fisheries). They also release an experimental group three weeks earlier than the normal release time and discussions are underway on the feasibility of releasing a later, larger group as well, to test comparative survivals.

Puntledge River Hatchery: over the last few years, increasing summer water temperatures have lead to increasing mortality on the summer-rearing coho fry meant for smolt release. This culminated in the loss of most of the rearing fry in 2009. Discussions led to the conclusion that smolts could no longer be reared at Puntledge. For the foreseeable future the coho will be released as fed fry and will no longer be adipose clipped for mark-selective fisheries. Some of the fry may be tagged to assess survival and exploitation rates, depending on funding availability.

Robertson Creek Hatchery: the target was reduced, from 400K to 200K, due to continued large surplus adult production to the river. The money saved will go toward productivity monitoring of Great Central Lake as part of the lake enrichment program to maintain lake sockeye populations.

Shuswap River Hatchery: a strong return to Duteau Creek is expected in 2010, so no eggs will be collected.

Spius Creek Hatchery: Eagle River coho are now being enhanced and tagged at the hatchery, to provide a new coho indicator for the Interior. This began with the 2009 brood, in a decision made too late for inclusion in the 2009/10 IFMP.

Fanny Bay Hatchery: will concentrate on Rosewall Creek stock. Other stocks are not in need of enhancement.

Goldstream River Hatchery: the target was increased due to poor returns to the river.

Gwa'ni Hatchery (Nimkish River): a decision was made to increase the target (beginning in 2009) and change to a smolt release strategy to three tributaries.

Kanaka Creek Hatchery: will hold fewer smolts to a larger size (70 gm) and later release (late July- Aug), rather than the usual 20 gm May release. This is an experimental release to see if it results in higher survival.

Little Campbell River Hatchery: will hold their smolts a little later to a 30 gm June release, rather than a 20 gm May release.

Nanaimo River Hatchery: the fry release appears to have increased, but this reflects better egg to fry in-hatchery survival rates for the last few years. The transplant to Millstone River will take advantage of the new access to the upper river.

P Hardy/Marble and Quatse Hatcheries: targets for several stocks were increased or the release strategy was changed to mainly smolt release, due to poor returns, except for Washlawlis which will increase but remain an unfed release.

Powell River Hatchery: producing smolts for tagging as an indicator stock (began with 2008 brood).

Sechelt Hatchery stocks will be done at Chapman Cr, which allows for an increase in the target.

Seymour River Hatchery: will hold some smolts to larger, later release, starting with 2009 brood, but this has necessitated a reduction in total smolt production. They will be differentially marked.

Thompson River, North Hatchery: 30K Lemieux Creek coho will be done at Spius Creek Hatchery, 20K Louis Creek coho will be incubated at Spius and then transferred to the Dunn Creek facility and 20K Dunn Creek coho will be done at the Dunn Creek facility.

Tofino Hatchery: will no longer enhance Tranquil Creek due to excellent escapements. The other stocks will be enhanced if necessary, depending on escapement.

4.7.5. Chum

Most Salmonid Enhancement Program (SEP) production targets will remain similar to last year's targets and are outlined below. Production targets and release strategies are still under development for those designated as TBD (To Be Determined). The format has been changed, leaving out the egg targets and adding information on type and numbers of marks. Note that 2010 Brood Expected Adults are based on SEP average biostandards and are the numbers of adults that can be expected over several years from the 2010 brood target release. Most biostandards for chum have not been updated for many years because there is little marking.

Table 4(a): Proposed 2010 Brood Production Targets for Chum – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Big Qualicum R	Fall	Big Qualicum R	Big Qualicum R	Chan Fry	AdRV	250,000	54,000,000	54,000,000	32,400
			Big Qualicum R	Fed FW	AdLV	100,000	0	950,000	1,710
Capilano R	Fall	Capilano R	Capilano R	Fed FW			90,000	90,000	900
Chehalis R	Fall	Chehalis R	Chehalis R	Fed FW			1,000,000	1,000,000	7,000
				Unfed			5,000,000	5,000,000	20,000
Chilliwack R	Fall	Chilliwack R	Chilliwack R	Unfed			2,000,000	2,000,000	14,000
Conuma R	Fall	Canton Cr	Canton Cr	Fed FW			1,000,000	1,000,000	9,000
	Fall	Conuma R	Conuma Est	Seapen			1,500,000	1,500,000	22,000
	Fall	Sucwoa R	Sucwoa R	Fed FW			1,000,000	1,000,000	9,000
	Fall	Tlupana R	Tlupana R	Fed FW			1,000,000	1,000,000	9,000
Inch Cr	Fall	Inch Cr	Inch Cr	Fed FW			800,000	800,000	8,000
			Nicomen SI	Fed FW			200,000	200,000	2,000
L Qualicum R	Fall	L Qualicum R	L Qualicum R	Chan Fry			38,000,000	38,000,000	22,800

			L Qualicum R	Fed FW			0	950,000	1,710
Nitinat R	Fall	Nitinat R	Nitinat Lk	Fed FW			30,000,000	25,000,000	500,000
			Nitinat R	Fed FW			0	5,000,000	100,000
			Klanawa R	Fed FW			0	0	0
Puntledge R	Fall	Puntledge R	Puntledge R	Fed FW			2,700,000	2,700,000	27,000
Tenderfoot Cr	Fall	Tenderfoot Cr	Tenderfoot Cr	Unfed			75,000	75,000	375
Weaver Sp Ch	Fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry			2,700,000	2,700,000	13,500

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin. Use a double finclip for some chum (eg, AdRV).

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Table 4(b): Proposed 2010 Brood Production Targets for Chum – Community Economic Development Program, Designated Public Involvement Projects and Aboriginal Fisheries Strategy Projects.

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Alouette R	Fall	Alouette R S	Alouette R N	Fed FW			195,000	195,000	1,950
Chapman Cr	Fall	Chapman Cr	Chapman Cr	Unfed			220,000	700,000	3,500
Fanny Bay	Fall	Rosewall Cr	Rosewall Cr	Fed FW			225,000	225,000	2,250
Goldstream R	Fall	Goldstream R	Goldstream R	Fed FW			75,000	675,000	6750
Gwa'ni	Fall	Nimpkish R Low	Nimpkish R Low	Fed FW			9,000,000	9,000,000	90,000
Halalt Band	Fall	Bonsall Cr	Bonsall Cr	Unfed			41,000	41,000	205
	Fall	Chemainus R	Chemainus R	Egg Plant			425,000	425,000	850
Huu-uy-aht	Fall	Sarita R	Sarita R	Fed FW			72,000	72,000	1,080
	Fall	Sugsaw R	Sugsaw R	Fed FW			72,000	72,000	1,080
			Sugsaw Est	Seapen			140,000	140,000	2,100
Kanaka Cr	Fall	Kanaka Cr	Kanaka Cr	Fed FW			150,000	150,000	1,500
			Byrne Cr	Fed FW			25,000	25,000	250
			Kaymar Cr	Fed FW			5,000	5,000	50
Little R	Fall	Puntledge R	Little R	Fed FW			190,000	190,000	1,900
Nanaimo R	Fall	Nanaimo R	Nanaimo R	Unfed			1,062,500	1,062,500	5,310
Nicomekl R	Fall	Chehalis R	Nicomekl R	Unfed			95,000	95,000	475
Orford R	Fall	Orford R	Orford R	Fed FW			800,000	800,000	8,000
Oyster R	Fall	Oyster R	Oyster R	Fed FW			320,000	320,000	3,200
Port Hardy/Quatse	Fall	Quatse R	Quatse R	Fed FW			100,000	100,000	1,000
Powell R	Fall	Lang Cr	Lang Cr	Fed FW			750,000	750,000	7,500
San Juan R	Fall	San Juan R	San Juan R	Fed FW			0	0	0
Sechelt	Fall	Angus Cr	Maclean Bay	Seapen			700,000	700,000	10,500
Serpentine R	Fall	Chehalis R	Serpentine R	Fed FW			150,000	150,000	1,500
Seymour R	Fall	Alouette R S	Seymour R	Fed FW			100,000	100,000	1,000
			Maplewood Cr	Fed FW			20,000	20,000	200
Sliammon R	Fall	Sliammon R	Sliammon R	Unfed			1,700,000	1,700,000	8,500
				Fed FW			900,000	900,000	9,000
Thornton Cr	Fall	Mercer Cr	Mercer Cr	Fed FW			50,000	50,000	750
	Fall	Salmon Cr/SWVI	Salmon Cr	Fed FW			500,000	500,000	7,500
	Fall	Twin Rivers	Twin Rivers	Fed FW			50,000	50,000	750

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin. Use a double finclip for some chum (eg, AdLV).

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Big Qualicum River Hatchery: recent analysis of data for fin-clipped chum shows a major reduction in the survival rate for fry migrating from the channel. In 2010, an additional 1M chum eggs will be taken, incubated and reared at the hatchery to approximately 1 gram, to help rebuild this depressed stock. 100K fry will be differentially marked to distinguish them from the channel production.

Chehalis River Hatchery: the 5M unfed fry release will take place only with Chehalis Band assistance during the egg-take and may be fed if they provide funding. The hatchery also collects some eggs for release by Public Involvement projects not included in the IFMP.

Chilliwack River Hatchery: production will be released back to the river for the next few years due to recent poor adult returns.

Little Qualicum River Hatchery: recent analysis of data for fin-clipped chum shows a major reduction in the survival rate for fry migrating from the channel. In 2010, an additional 1M chum eggs will be taken, incubated and reared at Big Qualicum River Hatchery to approximately 1 gram, to help rebuild this depressed stock.

Nitinat River Hatchery: Klanawa River chum were planned to be enhanced for one cycle only and that is finished. The hatchery will monitor the returns for three years. They will release fry to Nitinat River as well as the lake, but numbers to each may vary.

Gwa'ni Hatchery: The Namgis First Nation provides supplemental funding to the Gwa'ni Hatchery to pay for the collection of up to 8M chum salmon eggs in addition to the 2M eggs in their CEDP contract.

Seymour River Hatchery: target may be reduced in odd years to allow room for pink production.

Sechelt Hatchery: production carried out on a pilot basis from the Chapman Creek Hatchery.

Additional chum transferred by the above hatcheries to other projects not included in the tables include: Big Qualicum River (270K for Area 14S projects); Capilano River (25K for McKay Creek project); Chehalis River (270K for lower Fraser River projects); Inch Creek (90K for lower Fraser River projects); Tenderfoot Creek (400K for Bowen Island and West Vancouver projects); Puntledge River (360K for Area 14N projects); Quinsam River (315K Campbell River chum eggs for local public involvement projects); Alouette River (380K for lower Fraser River projects); and Kanaka Creek (90K for lower Fraser River projects and schools).

4.7.6. Pink

Most Salmonid Enhancement Program (SEP) production targets will remain similar to last year's targets and are outlined below. Production targets and release strategies are still under development for those designated as TBD (To Be Determined). The format has been changed, leaving out the egg targets and adding information on type and numbers of marks. No pinks are marked at this time. Note that 2010 Brood Expected Adults are based on SEP average biostandards and are the numbers of adults that can be expected over several years from the 2010 brood target release. Biostandards for pinks have not been updated since the 1990s due to lack of marking.

Table 5(a): Proposed 2010 Brood Production Targets for Pink – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	Mk ² Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Chehalis R	Fall	Chehalis R	Chehalis R	Unfed			250,000	0 ¹	0
Puntledge R	Fall	Quinsam R	Puntledge R	Unfed			2,400,000	2,400,000	22,560
	Fall	Glendale	Glendale R	Chan Fry			18,800,000	18,800,000	368,500
Quinsam R	Fall	Quinsam R	Quinsam R	Unfed			5,400,000	3,300,000	98,670
			Discovery Pass	Seapen			1,000,000	700,000	25,700
Tenderfoot Cr	Fall	Cheakamus R	Cheakamus R	Unfed			1,000,000	0 ¹	0
Weaver Sp Ch	Fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry			921,600	0 ¹	0

¹ Pinks are present on the Fraser River and Cheakamus River during odd years only.

² Mark Type - Pinks are not marked at this time.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Table 5(b): Proposed 2010 Brood Production Targets for Pink – Community Economic Development Program and Designated Public Involvement Projects

Project	Run	Stock	Release Site	Stage	Mk ² Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Expected Adults
Chapman Cr	Fall	Chapman Cr	Chapman Cr	Unfed			250,000	250,000	2,350
Cowichan Pink Seapen	Fall	Quinsam R	Cowichan Bay	Seapen			200,000	200,000	4,800
Deep Bay Pink Seapen	Fall	Quinsam R	Deep Bay	Seapen			450,000	450,000	16,065
Englishman R	Fall	Quinsam R	Englishman R	Unfed			1,000,000	1,000,000	22,560
Fanny Bay	Fall	Quinsam R	Coal Cr	Unfed			1,000,000	1,000,000	22,560
Gibson's Pink Seapen	Fall	Chapman Cr	Gibson's	Seapen			100,000	100,000	2,400
Kanaka Cr ¹	Fall	Harrison R	Kanaka Cr	Unfed			600,000	0 ¹	0
Nanaimo R	Fall	Nanaimo R	Nanaimo Area	Seapen			1,000,000	900,000	21,600
Nile Cr	Fall	Quinsam R	Nile Cr	Unfed			1,000,000	1,000,000	22,560
Oyster R	Fall	Oyster R	Oyster R	Unfed			2,250,000	2,250,000	7,125
Powell R	Fall	Lang Cr	Lang Cr	Unfed			500,000	500,000	8,150
Port Hardy/Quatse	Fall	Cluxewe R	Cluxewe R	Unfed			800,000	800,000	15,680
		Quatse R	Quatse R	Unfed			1,350,000	1,350,000	26,460
Sechelt	Fall	Chapman Cr	Maclean Bay	Seapen			250,000	450,000	10,800
Seymour R ¹	Fall	Chilliwack R	Seymour R	Unfed			1,440,000	0 ¹	0
Tsolum R	Fall	Quinsam R	Tsolum R	Unfed			1,000,000	1,000,000	22,560

¹ Pinks are present on the Fraser River during odd years only.

² Mark Type - Pinks are not marked at this time.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Chehalis River Hatchery takes about 1.7M extra eggs in odd years from Chehalis swim-ins and Weaver Spawning Channel (both in the Harrison system) to supply eggs to several small Public Involvement projects, as well as Kanaka Creek Hatchery.

Quinsam River Hatchery: the target was reduced for 2010 following the highest escapement on record in 2009. The target is now set at a base production of 4M fry released and up to a maximum of 6.8M fry released if the escapement drops below 50K adults. Quinsam also supplies eggs for approved transfers to other east coast Vancouver Island projects to re-establish former pink runs and contribute to local recreational fisheries. Depending on availability, this amounts to about 7M eggs over and above the Quinsam target. To reduce pressure on the Quinsam/Campbell pink population, some projects now collect eggs from returns from previous transplants (eg. Nanaimo R).

Cowichan Pink Seapen: receives fry from Quinsam River Hatchery.

Deep Bay Pink Seapen: receives fry from Quinsam River Hatchery.

Gibson's Pink Seapen: receives fry from Chapman Creek Hatchery.

Nanaimo River Hatchery: took eggs from adults returning to Nanaimo River in 2009.

Oyster River Hatchery: the target was reviewed and increased.

Sechelt Hatchery: Chapman Creek stock will be used.

4.7.7. Sockeye

Most Salmonid Enhancement Program (SEP) production targets will remain similar to last year's targets and are outlined below. Production targets and release strategies are still under development for those designated as TBD (To Be Determined). The format has been changed, leaving out the egg targets and adding information on type and numbers of marks. Note that 2010 Brood Expected Adults are based on SEP average biostandards and are the numbers of adults that can be expected over several years from the 2010 brood target release. Biostandards for sockeye have not been updated for many years because there is little marking.

Table 6(a): Proposed 2010 Brood Production Targets for Sockeye – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Brood Exp. Adults
Gates Sp Ch	Summer	Gates R	Gates R	Chan Fry			4,500,000	4,500,000	30,150
Horsefly Sp Ch	Summer	Horsefly Ch	Horsefly Ch	Chan Fry			17,500,000	17,500,000	117,250
Nadina Sp Ch	Summer	Nadina R	Nadina R	Chan Fry			3,500,000	3,500,000	23,450
Inch Sock Sat	Summer	Pitt R Up	Pitt R Up	Fed Spr			2,000,000	2,000,000	20,000
	Fall	Cultus Lk	Cultus Lk	Fed Spr	Ad	550,000	550,000	550,000	825
				Fed Fall	Ad	150,000	150,000	150,000	450
				Smolts	Ad	50,000	50,000	50,000	1,500
Shuswap R	Summer	Okanagan R	Okanagan R	Fed Spr			800,000	800,000	9,900
Weaver Sp Ch	Fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry			46,800,000	46,800,000	313,560

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Table 6(b): Proposed 2010 Brood Production Targets for Sockeye – Community Economic Development Program and Designated Public Involvement Projects

Project	Run	Stock	Release Site	Stage	Mk ¹ Type	Target Number to Mark	2009 Brood Release Target	2010 Brood Release Target	2010 Expected Adults	Brood
Gwa'ni	Fall	Sebalhall Cr	Vernon Lk	Unfed			400,000	400,000		2,680
	Fall	Woss R	Woss Lk	Unfed			800,000	800,000		5,360
Sakinaw L	Fall	Sakinaw L	Sakinaw L	Fed Spr			200,000	720,000		14,400

¹ Mark Type – coded-wire tags (Tag) or finclips: Ad= Adipose fin, LV= left ventral fin, RV= right ventral fin.

TBD (To Be Determined) - target is still under discussion. For more details see the comments after the tables for each species.

Inch Sockeye Satellite: survival rates to adult for Cultus Lake releases have been developed as part of the Cultus Lake Recovery Plan: 0.15% for summer releases, 0.3% for fall releases and 3% for smolt releases. The smolt releases to date have resulted in only about 1.5% survival, so half of the release is being imprinted on Cultus Lake water for 2 weeks to see if that makes a difference. Fry released in the summer and fall from the hatchery to the lake are surviving at the same rate as the natural fry.

Shuswap River Hatchery: the target for Okanagan Lake sockeye was reduced after discussions with the Okanagan First Nations, partly to make room for more chinook.

Sakinaw Lake: the National Recovery Plan includes an egg target based on 50% of female spawners, rather than a specific number. All resulting fry are released as fed fry to Sakinaw Lake from Ouillet Creek Hatchery. These fry are supplemented with fry derived from captive brood with some reared at Rosewall Creek Hatchery and some at Ouillet Creek Hatchery. Returns were extremely low in 2008 and 2009 (one fish counted through the fence each year), so all releases were from captive brood. This release is no longer marked as there is no need to distinguish the returning adults from those resulting from natural spawners.

5. DECISION GUIDELINES AND SPECIFIC MANAGEMENT MEASURES

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

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

Specific fishing plans for 2010 are described in Sections 6, 7 and 8.

5.1. General Decision Guidelines

5.1.1. Pre-season Planning

Development of decision guidelines is part of the pre-season planning process. Development is guided by relevant departmental policies, scientific advice, consultation with harvesters and other interests, and the experience of fishery managers.

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

5.1.2. In-season Decisions

In-season decision points vary from fishery to fishery depending on type, availability and quality of in-season information and the established advisory, consultation and decision-making processes. Decisions include opening and closure of fisheries, level of effort deemed acceptable, gear type restrictions, deployment of special projects, etc.

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

5.1.3. Allocation Guidelines

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

Table 7 describes a generalized framework by which fishing opportunities are allocated to different fishing sectors at different abundance levels.

Table 7. Allocation guidelines

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

NOTE: This table describes conceptually how First Nations, recreational and commercial fisheries might be undertaken across a range of returns. It does not imply that specific management actions for all stocks exactly follow these guidelines, but rather is an attempt to depict the broad approach.

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

All harvest groups have recommended that the Department consult on by-catch/incidental harvest allocations. However, the Department does not 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.

5.1.4. First Nations - Food, Social and Ceremonial (FSC)

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

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

5.1.5. First Nations- Economic Opportunities

DFO will be undertaking a series of discussions with First Nations regarding fishing for economic purposes to experiment with mechanisms to integrate management of fisheries following the negotiations of treaties.

These fisheries are undertaken with two principles:

- These fisheries are of the same priority as the commercial fishery; and
- The share of fish harvested by First Nation economic opportunity fisheries must be fully mitigated over time by the retirement of commercial salmon licences from the commercial fishery.

As part of the reform of Pacific fisheries and the recently announced PICFI initiative in 2007, DFO is looking for opportunities to increase First Nations participation in new economic fisheries.

5.1.6. Recreational Fisheries

Under the Department's *Allocation Policy for Pacific Salmon*, after FSC fisheries, the recreational sector has priority to directed fisheries for chinook and coho salmon. For sockeye, pink and chum salmon, the policy states that recreational harvesters be provided predictable and stable fishing opportunities. Management actions previously applied in 1999-2009 will be implemented in 2010 and include: recreational harvest of sockeye, pink, and chum will be limited to a maximum average of 5% of the combined recreational and commercial harvest of each species on a coast-wide basis.

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 will remain open while First Nations FSC fisheries directed on stocks of concern are closed, provided the recreational fishery is not directed on the stock of concern, nor is the impact on the stock of concern significant.

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.

5.1.7. Commercial Fisheries

The *Allocation Policy for Pacific Salmon* provides for at least 95% of the combined commercial and recreational sockeye, pink and chum harvest to be allocated to the commercial sector. Commercial harvest of chinook and coho salmon will occur when abundance permits and First Nations and recreational priorities are considered to have been addressed.

Specific sector target allocations are: seine 40%, gill net 38%, and troll 22% expressed on a sockeye equivalent basis. The ability to achieve these targets is often compromised by conservation constraints and other factors. Commercial allocation targets by area and by species are included in Appendix 4.

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

When one commercial gear type is unlikely to achieve its allocation, the usual approach will be that the same gear type, but in a different area, will be provided opportunities to harvest the uncaught balance.

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

5.1.8. Excess Salmon to Spawning Requirements Fisheries

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

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

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

5.1.9. Selective Fisheries

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

All sectors have responded positively to the growing conservation consciousness. First Nations have embraced the principles of selective fishing by adopting more selective fishing gear, as often these types of gear reflect a traditional way of fishing. The Canadian commercial fishing sector has developed its own Canadian Code of Conduct for Responsible Fishing Operations. Over 80% of Canada's fishing organizations have signed on and ratified the Code that is overseen by a Responsible Fishing Board. Similarly, the recreational fishery in the Pacific Region developed a Code of Conduct. In addition, DFO has worked with the Sport Fishing Institute (SFI) on a Tidal Angling Guide certification program. The program curriculum is complete and the SFI conducted two pilot programs in the Fall of 2009. The SFI will conduct additional training sessions with the goal of certifying up to 1,000 guides in 2010.

5.1.10. 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 8. 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 plans to conduct a review of the post-release mortality rates currently used for salmon fisheries in Canadian waters. 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 2001 post-release mortality rates currently applied by DFO for salmon fisheries conducted in Canadian waters also, in some cases, are not the same as the rates that are currently applied by the bi-lateral Chinook Technical Committee under the Pacific Salmon Treaty. The results from the DFO review of mortality rates will be used to inform any additional revisions to the post-release mortality rates that are required to address these issues in the development of salmon IFMPs in future years.

Table 8: Post-Release Mortality Rates

Fishery	Pre 2001 Post-Release Rates	2001 Post-Release Rates
First Nations Fisheries	Various - Depending on gear used and fishery. Note: When using the same gear and methods noted below the same mortality rates were applied.	Various – depending on gear used and fishery. Beach seine – 5% for sockeye in-river Fraser
Recreational troll gear – sockeye, coho, pink and chum	10%	10% except 3% for sockeye in-river Fraser
Recreational troll gear – chinook	15%	15%
Recreational mooching gear – coho and chinook	10% for coho; 15% for chinook	20% for coho in Areas 1&2; 16% for coho in Areas 3 to 10; 10% for coho in other areas; 15% for chinook in all areas.
Commercial Gillnet	60% to 70%	60% with provision for rates as low as 40% where selective techniques warrant.
Commercial Seine – North Coast (Areas 1 to 10)	10% to 25%; 5% in Area 4 special seine fishery.	15% all areas, except 10% in the Area 4 special seine fishery.
Commercial Seine – South Coast (Areas 11 to 29)	15% to 25%	25 % Johnstone Strait; 70% Area 20 - coho, 25% all areas for sockeye
Commercial Troll – All Areas	26%	10% sockeye, 15% coho and chinook

5.2. AABM/ISBM Chinook

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

5.2.1. PST Chinook Abundance Based Management Framework

The basis for managing fisheries impacting chinook from Alaska to Oregon is the chinook abundance based management system in Chapter 3 of the PST. This management system was adopted in 1999 and defined harvests of chinook through 2008. Chapter 3, revised for implementation in 2009, maintains the abundance based management framework established under the 1999 Agreement.

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

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

The mixed-stock aggregate fisheries of Southeast Alaska, northern B.C., and WCVI are managed on the forecast abundance of the aggregate of stocks (called Aggregate Abundance Based Management or AABM fisheries). In the AABM fisheries, a total allowable catch is determined based on the forecast abundance of the aggregate of stocks. Fisheries are managed based on a chinook fishery year which extends from October 1 in one calendar year to September 30 in the next calendar year. The revised PST agreement stipulates a 30% reduction in harvest rate in the WCVI AABM area, but no change in northern BC.

ISBM areas are all those that are not AABM. For these fisheries, the agreement imposes a limit on the adult equivalent mortality rate for individual stock groups. In Canada, the adult equivalent mortality rate in all ISBM fisheries was limited to 65% of the historic (or base period) adult equivalent mortality rate on each stock group.

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

5.2.2. Domestic Considerations

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

5.2.3. Stock Status Outlook

The 2009/10 TAC for the WCVI AABM based on a 0.96 abundance index (AI) from the Chinook Technical Committee (CTC) Chinook Model is 143,700. This harvest level provides for an anticipated harvest of approximately 5,000 chinook in the First Nations fisheries, 55,000 chinook in "outside" recreational fisheries and 83,700 chinook in the WCVI commercial Area G troll fishery.

5.2.4. Fishery Guidelines

Stock aggregates categorized as "low" abundance will limit both AABM and ISBM fisheries. WCVI wild chinook is in "low" status and will require limitations on overall exploitation. Other southern BC chinook populations that are forecasted to have "low" returns include the Fraser River Spring 4₂, Spring 5₂ and Summer 5₂ chinook and Lower Strait of Georgia chinook. Limiting harvest of these stocks will require shaping of fisheries to limit impact in times and areas where these stocks are prevalent.

Management measures will also be taken in chinook AABM and ISBM fisheries to limit impacts on co-migrating stocks of concern such as Interior Fraser coho. Table 9a outlines the risks to co-migrating stocks posed by AABM fisheries targeting chinook.

Table 9(a): Assessment of risk of impact on stocks of concern during chinook fisheries in the AABM management area of the WCVI

Fishery Period	Risk of impact on stocks of concern
Oct. - Feb.	Low risk. Fisheries in October are outside the migration period and area for several stocks of concern, including Interior Fraser coho, WCVI chinook, Fraser River Spring 4 ₂ , Spring 5 ₂ and Summer 5 ₂ chinook. Catch will be comprised of fish returning in subsequent calendar year or later. The majority of the chinook catch will be of stocks of U.S. and lower Fraser River origin.
Mar. – May	Moderate - High risk. Specific concerns for Fraser River Spring 4 ₂ chinook. Increased incidence of lower Strait of Georgia chinook especially in May.
June - mid-Sept.	Moderate - High risk. Potential concern for impacts on Fraser River Spring 5 ₂ and Summer 5 ₂ chinook in June and July. Monitoring of coho encounters in early to mid-June is required. Risk increases as coho recruit to fishery. Stocks of concern, including Interior Fraser coho are prevalent. Selective fishing methods may reduce risk by avoiding coho. Concerns for impacts on returning local WCVI stocks. Offshore fishing may reduce risk by avoiding WCVI chinook. Concerns for impacts on lower Strait of Georgia chinook.
Late Sept.	Low risk. Coho impacts reduced because nearing end of migration out of WCVI area. WCVI chinook may be avoided by area restrictions. Concerns for impacts on lower Strait of Georgia chinook.

Because there is a TAC identified for the AABM management area, targeted chinook fisheries are planned for First Nations, recreational, and commercial sectors in 2010. Table 9(b) describes management measures that will be taken to minimize impacts on stocks of concern in AABM chinook fisheries.

Table 9(b): Stock outlook and management actions anticipated in AABM chinook fisheries to limit impacts on stocks of concern

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
WCVI chinook	<ul style="list-style-type: none"> - Low hatchery return of 5 yr olds, while age 3 and 4 are moderate - Concerns persist for wild stocks. 	- Harvest levels outlined in communal licences	<ul style="list-style-type: none"> - Ongoing terminal area restrictions for wild stocks of concern. - Max. size limit inside the management corridor to be determined. 	<ul style="list-style-type: none"> - Area G -Time and area closures on WCVI (i.e. avoid inshore fisheries during the time period July to September). - Area F - measures in the North Coast troll fishery

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
South Coast Coho (including Interior Fraser River)	<ul style="list-style-type: none"> - Status is low. - Low returns expected because of continued poor marine survivals. 	<ul style="list-style-type: none"> - Harvest levels outlined in communal licences 	<ul style="list-style-type: none"> - Coho retention limited to selective hatchery mark fishery (SHMF) only. 	<ul style="list-style-type: none"> - Non retention of wild coho. - Potential for limited SHM coho retention in Sept.
Fraser River Spring 4₂ chinook	<ul style="list-style-type: none"> - Returns for 2010 are expected to continue to be well below long term average and target levels. 	<ul style="list-style-type: none"> - No impacts on WCVI First Nations fisheries anticipated 	<ul style="list-style-type: none"> - No impacts on WCVI recreational fisheries anticipated 	<ul style="list-style-type: none"> - Time and area closures and effort limits March to June 15th. June 16th to July 31st closed.
Fraser River Spring 5₂ and Summer 5₂ chinook	<ul style="list-style-type: none"> - Returns for 2010 are expected to continue to be well below long term average and target levels. - Abundance reforecast in-season. 	<ul style="list-style-type: none"> - No impacts on WCVI First Nations fisheries anticipated 	<ul style="list-style-type: none"> - No impacts on WCVI recreational fisheries anticipated 	<ul style="list-style-type: none"> - Time and area closures and effort limits March to June 15th. Closed June 15th. June 16th to July 31st closed.
Strait of Georgia chinook	<ul style="list-style-type: none"> - Lower Strait of Georgia chinook remains stock of concern. Continued poor returns anticipated in 2010. 	<ul style="list-style-type: none"> - Harvest levels outlined in communal licences 	<ul style="list-style-type: none"> - Time and area closures - Catch limits - Measures will vary by area. 	<ul style="list-style-type: none"> - AABM harvest rate reduction should reduce impact on LGS chinook - Time and area closures (Areas south of Estevan Point closed in March and April) - reduced harvest levels in period March to June.

In the ISBM management area inside of Vancouver Island, fisheries are constrained in order to meet PST obligations to reduce chinook harvest rates from adult equivalent mortality levels. To meet this requirement in mixed-stock fisheries, there is generally non-retention of chinook in commercial fisheries (though by-catch retention may be allowed in some troll and gill net fisheries), recreational fisheries targeting chinook have daily and annual limits, and First Nations are provided opportunities for FSC purposes only. In particular, management action will continue to minimize impacts on Strait of Georgia origin chinook in 2010. Further fishery opportunities may be provided in-season in terminal locations with an identified surplus. Table 9(c) summarizes management actions taken in ISBM management areas to reduce impacts on stocks of concern.

Table 9(c): Management actions anticipated in ISBM chinook fisheries to limit impacts on stocks of concern

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
WCVI chinook	<ul style="list-style-type: none"> - Low hatchery return of 5 yr olds, while age 3 and 4 are moderate - Concerns persist for wild stocks. 	<ul style="list-style-type: none"> - Communal licence harvest targets - conservation measures under discussion. 	<ul style="list-style-type: none"> - Time and area closures - Size limit inside the WCVI management corridor and other areas shoreward of the management corridor to be determined - Some areas will be 2 chinook but only 1 >77cm - Catch limits - Measures will vary by area. 	<ul style="list-style-type: none"> - Time and area closures during the July to September period.
South Coast Coho (including Interior Fraser River)	<ul style="list-style-type: none"> - Status is low. - Low returns expected because of continued poor marine survivals. 	<ul style="list-style-type: none"> - Time and area restrictions -Gear restrictions - Communal licence harvest targets. -Measures will vary by area 	<ul style="list-style-type: none"> - Time and area closures - SHMF for coho - Catch limits - Measures will vary by area. 	<ul style="list-style-type: none"> - Generally non-retention of coho except for by-catch retention in terminal fisheries in Nootka and Barkley. - Gear restrictions (i.e. barbless hooks)
Fraser chinook - Spring 4₂, Spring 5₂ and Summer 5₂	<ul style="list-style-type: none"> - Returns are expected to continue to be well below long term average and target levels. 	<ul style="list-style-type: none"> - Time and area restrictions - Gear restrictions - Communal licence harvest targets - Measures will vary by area 	<ul style="list-style-type: none"> - Time and area closures - Catch limits - Measures will vary by area. - Additional measures for portions of Areas 19, 20 and in the Fraser River 	<ul style="list-style-type: none"> - No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
Strait of Georgia chinook	- Lower Strait of Georgia chinook remains stock of concern. Continued poor returns anticipated.	- Time and area restrictions - Gear restrictions - Communal licence harvest targets. - Measures will vary by area	- Time and area closures - Catch limits - Measures will vary by area.	- No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.
North Vancouver Island / Johnstone Strait Chinook	- Returns expected to be well below average.	- No impacts on FN directed chinook fisheries anticipated.	- Time and area chinook non-retention - Catch limits - Gear restriction (i.e. barbless hooks)	- No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.

5.3. Fraser River Chinook

5.3.1 Background

For management purposes in 2010, Fraser chinook stocks will be managed using the Spring 4₂, Spring 5₂, Summer 5₂, Summer 4₁ and Fraser Fall 4₁ (Harrison) management units employed under the Pacific Salmon Treaty (PST) process to align fisheries management objectives with indicator stocks, escapement, catch and exploitation rate data used in the PST process. The relationship between current PST management units, Wild Salmon Policy conservation units (CUs) and spawning locations is shown in Table 10.

New management objectives have been identified for Spring 4₂ chinook (Section 4.1.8) and for the combined management units of Spring 5₂ and Summer 5₂ chinook (Section 4.1.9). Fishery guidelines for the Summer 4₁ and Fraser Fall management units are outlined below.

Table 10. Relationship between current Pacific Salmon Treaty escapement reporting units, Wild Salmon Policy (WSP) conservation units (CUs) and spawning locations

PST Unit	C U #	CU Name		Spawning Locations
Spring 4 ₂ Chinook	16	STh	Bessette Creek	Bessette Creek;
	17	LTHOM	spring	Bonaparte River; <i>Coldwater River</i> ; Deadman River; <i>Louis Creek</i> ; Nicola River; <i>Spilus Creek</i> ;

Spring 5 ₂ Chinook	4	LFR springs	<i>Birkenhead River</i>
	5	LFR Upper Pitt	Pitt River-upper
	8	FR Canyon- Nahatlatch	Nahatlatch River
	10	MFR springs	Cariboo River-upper; <i>Chilako River</i> ; <i>Chilcotin River upper</i> ; Chilcotin River-lower; <i>Cottonwood River</i> ; Horsefly River; Narcosli Creek; Naver Creek; West Road River
	12	UFR springs	Bowron River; Dome Creek; East Twin Creek; Fraser River-above Tete Jaune; Forgetmenot Creek; Goat River; Holliday Creek; Holmes River; Horsey Creek; Humbug Creek; Kenneth Creek; McGregor River; McKale River; Morkill River; Nevin Creek; Ptarmigan Creek; Slim Creek; Small Creek; Snowshoe Creek; Swift Creek; Torpy River; Walker Creek; Wansa Creek; West Twin Creek; Willow River
	18	NTHOM spring	Blue River; Finn Creek; Raft River
Summer 5 ₂ Chinook	6	LFR summers	Big Silver Creek; Chilliwack/Vedder River; Cogburn Creek; Douglas Creek; Green River; Lillooet River; Lillooet River-lower; Lillooet River-upper; Sloquet Creek; Weaver Creek
	9	MFR Portage	Portage Creek
	11	MFR summers	Bridge River; Cariboo River lower; Chilko River; Endako River; Kazchek Creek; Kuzkwa River; Nechako River; Quesnel River; Seton River; Stellako River; Stuart River;
	14	STh summer age	Eagle River; Salmon River;
	19	NTHOM summer age	Barriere River; Clearwater River; Mahood River; North Thompson River
Summer 4 ₁ Chinook	7	Maria Slough	Maria Slough
	13	STh summer age	Adams River; Little River; South Thompson River; Lower Thompson River;
	15	Shuswap River summer age	Shuswap River-lower; Shuswap River-middle

Notes:

- 1) 7 Early Timed Chinook stocks shown in italics.
- 2) Chilcotin River upper not part of PST spring 5₂ aggregate due to short time series.
- 3) Salmon River (Salmon Arm), Eagle, Bridge River and Endako River currently included with PST spring 5₂ aggregate. STh summer age CU could be changed to STh spring age CU. Bridge and Endako suggest for MFR Spring CU.
- 4) Raft River may belong with North Thompson Summers based on timing. Currently included with PST summer 5₂ aggregate.

5.3.2 Stock Status Outlook

In the 2010 Salmon Outlook, Spring 4₂, Spring 5₂, Summer 5₂ chinook have been classified as *stocks of concern*. For Summer 4₁ chinook, the outlook for most of the component populations is *near target to abundant*. For Fraser Fall 4₁ (Harrison) chinook the outlook is *low*, indicating that returns are expected to be below the escapement goal range.

5.3.3 Fishery Guidelines

Fraser Spring 4₂ Chinook

Fishery restrictions for this management unit are planned consistent with the management objective (Section 4.1.8). For fisheries in the Fraser River, Spring 4₂ management actions will be the driver for management actions until July 15th when greater than 70% of this run is expected to have passed by Albion in the lower Fraser River. After July 15th and until the end of July management actions will be guided by the management zones identified for Spring 5₂ and Summer 5₂ chinook outlined in Section 4.1.9.

Specific management actions will be identified separately for First Nations (section 6.2.7), recreational (Section 7.2.3 and Appendices 6 and 7) and commercial fisheries (section 8.15.5)

Fraser Spring 5₂ and Summer 5₂ chinook

Fishery restrictions will depend on the in season abundance of chinook at the Albion test fishery and management zones for Spring 5₂ and Summer 5₂ outlined in Section 4.1.9

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

Specific management actions will be identified separately for First Nations (section 6.2.8), recreational (Section 7.2.3 and Appendices 6 and 7) and commercial fisheries (section 8.15.5)

Fraser Summer 4₁ Chinook

The management objective for the Fraser Summer 4₁ has not been established. However, the Department is working on developing a management objective for the PST process which

requires an escapement objective to be developed consistent with maximum sustained yield (MSY) or other agreed biologically-based escapement goals.

As previously outlined, the Lower Shuswap River is the CWT indicator stock for this group, however to date, the time series of data is too short to undertake stock-recruit analyses to estimate the number of spawners required to produce maximum sustained yield (S_{MSY}). Based on preliminary analysis from habitat models, S_{MSY} for the Lower Shuswap indicator population is estimated at approximately 14,000 spawners. Mark-recapture escapement estimates of escapements to the Lower Shuswap indicator were close to or slightly above the estimated S_{MSY} in 2007 and 2008, and exceeded the S_{MSY} value in 2006 (~58,000) and 2009 (~24,000).

The Fraser Summer 4₁ Chinook stock group consists of several populations which spawn almost exclusively within the Thompson River watershed, and migrate through the Lower Fraser River from mid-July to mid-September. Within this stock group, the Lower Shuswap River is the CWT indicator stock used to monitor survival and exploitation. Other systems of the aggregate are assessed visually, and work is underway to calibrate their escapement estimates. There are no pre-season or in-season abundance forecasts developed for this aggregate, however, the Fraser Summer 4₁ management unit is expected to approach spawner abundances associated with MSY levels in 2010.

Directed fishing opportunities may occur on this stock group, provided that fisheries can be designed to limit impacts on co-migrating stocks of concern including: Spring 4₂ Chinook, Spring/Summer 5₂ Chinook, Fraser Fall Chinook, Fraser River Sockeye, and Interior Fraser Coho. Recent reductions to SE Alaska fisheries as a result of changes to the PST Chinook Annex may provide some limited additional flexibility in planning fisheries directed on Summer 4₁ Chinook. While formal projections of terminal abundance for this aggregate are not produced, the number of additional chinook returning to the Fraser River as a result of SE Alaska reductions may be between 3,000 and 10,000 chinook based on fishing patterns observed from 2004 to 2008.

Fraser Fall 4₁ (Harrison) Chinook

The PST approved escapement goal for the Fraser Fall 4₁ (Harrison) Chinook is a range of 75,100 to 98,500 spawners.

Fraser Fall chinook spawn mostly in the Harrison and Chilliwack watersheds, and return to the Lower Fraser between mid-August and mid-November, with the majority of the run migrating through this area from mid-September to mid-October. This is the only Fraser River chinook population for which a formal forecast is produced. The 2010 forecast of the terminal spawner abundance (i.e. after all fisheries removals) for Harrison Chinook is approximately 81,000 age-3 and older fish. Very low numbers of age 4 and age 5 fish (approximately 20% of the forecast abundance) are expected in the return and resulting spawning escapement is expected to be skewed to the smaller-bodied 3 year old age class (approximately 80% of forecast abundance) with fewer highly productive female spawners that predominately mature at age 4 or 5. The forecast terminal spawning abundance is in the lower end of the escapement goal range.

Given the expected higher proportions of less productive age-3 spawners and a forecast at the low end of the escapement goal range, additional fishery management actions are planned for this season. This may include non-retention for commercial fisheries which have significant by-catch of these stocks in the September to November time period.

5.4. ABM Coho

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

5.4.1. PST Coho Abundance Based Management Framework

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

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

5.4.2. Domestic Considerations

Within the PST coho management framework, Canadian domestic policy will further define fishing opportunities. The domestic objectives or policies that will most affect fishing opportunities include conservation objectives, the WSP, the *Allocation Policy for Pacific Salmon* and *A Policy for Selective Fishing in Canada's Pacific Fisheries*. Domestic conservation concerns may limit total fishing mortality to a level less than stipulated in the PST coho ABM. For example, if abundance is "critically" low, such as the case with Interior Fraser coho in recent years, domestic fisheries may be limited below the lowest allowable exploitation identified by the coho ABM agreement. Allowable catch is allocated to sectors according to the priorities set out in the *Allocation Policy for Pacific Salmon*. Selective fishing practices are also taken into account when developing fishing opportunities.

5.4.3. Stock Status Outlook

For 2010, the status of southern BC stocks remains low to moderate. Returns to WCVI stocks in 2009 were abundant and above expectation probably due to favorable marine conditions for the 2008 sea entry year; however, forecast models indicate a return to low marine conditions for the 2009 sea entry year. Stocks in Johnstone Strait and Interior Fraser are low to near target status;

and, forecast models indicate a slight improvement for 2010. Stocks in Strait of Georgia indicated improvements over 2008 with returns for 2010 to be similar to 2009. Lower Fraser stocks remain at low status and forecast models indicate no change.

5.4.4. Fishery Guidelines

Management of salmon fisheries in southern BC will be shaped to accommodate the status level of coho within management units defined by the PST. Table 11(a) summarizes the general fishery management approaches by fishery sector associated with each status level (critically low, low, moderate, and abundant).

Table 11(a): Southern B.C. coho mixed-stock fishery guidelines

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

Under "low" status, the United States is limited to 10% exploitation on coho originating from the Interior Fraser management unit. Canadian fisheries will be managed to limit total fishing mortality to a maximum of 3% for the Interior Fraser management unit, a level which recognizes

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

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

Directed coho fisheries will be constrained when there is evidence of co-migrating stocks of concern. Table 11b summarizes management actions that will be taken to limit impacts on salmon stocks of concern encountered in coho fisheries.

Table 11(b): Management actions in coho fisheries to limit impacts on stocks of concern

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
Strait of Georgia Coho (including lower Fraser)	<ul style="list-style-type: none"> - Critically low - Stock of concern status. - Returns are expected to be similar to last year well below desired levels. 	<ul style="list-style-type: none"> - Time and area closures - Harvest levels outlined in communal licences - Measures will vary by area and associated impacts on individual stocks. 	<ul style="list-style-type: none"> - Time and area closures - Gear restrictions (i.e. barbless hooks) - Catch limits - Measures will vary by area and associated impacts on individual stocks. See Section 7.3. 	<ul style="list-style-type: none"> - No directed commercial coho fisheries (or coho retention) in areas where Strait of Georgia coho are found. - Significant restrictions on commercial fisheries directed at other salmon stocks in areas where Georgia St coho are found.
Interior Fraser River coho	<ul style="list-style-type: none"> - Critically low - Stock of concern status. -Returns are expected to be well below desired levels. 	<ul style="list-style-type: none"> - Time and area closures - Harvest levels outlined in communal licences - Measures will 	<ul style="list-style-type: none"> - Time and area closures - Gear restrictions (i.e. barbless hooks) - Constraints on coho by-catch 	<ul style="list-style-type: none"> - No directed commercial coho fisheries (or coho retention) in areas where Interior Fraser coho are found. - Significant restrictions on

Stock of Concern (constraint)	Stock Outlook for 2010	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
		vary by area and associated impacts on individual stocks.	- Measures will vary by area and associated impacts on individual stocks. See Section 7.3.	commercial fisheries directed at other salmon stocks in areas where Interior Fraser coho are found.

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

5.5. Fraser River Sockeye Decision Guidelines

5.5.1. Background

Fraser River sockeye are managed on the basis of the four management groups (Early Stuart, Early Summer, Summer, and Late Run). Since 2002, Birkenhead sockeye have been separated from the remaining Late Run stocks after it was noted that their timing was more similar to the timing of Summer run stocks and that they did not experience the same elevated levels of pre-spawn mortality as the other Late run sockeye. However, in recent years, their timing has been later than the rest of the Late run. Correspondingly, the Fraser River Panel (FRP) decided to re-integrate Birkenhead sockeye back into the Late run management aggregate. Spawning escapement targets and harvest rules are developed annually for each stock timing aggregate.

The Fraser River Sockeye Spawning Initiative/WSP process was initiated in 2006 and has been continued for the identification of 2010 escapement strategy options. (Refer to DFO's consultation website for details).

5.5.2. General Constraints

Though TAC is identified on various stock groupings in most years, conservation and management constraints can affect harvesting opportunities. These constraints are described below.

5.5.3. Pre-season Planning

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

Run Size Forecast:

Pre-season 2010 forecasts of run size at various probability levels are developed for major sockeye stocks within the four management groups (Early Stuart, Early Summer, Summer and Late). Fraser sockeye forecasts for 2010 are especially uncertain given the decreasing trends in productivity for most stocks in recent years and, in particular, the unexpectedly poor returns in

2009. Exceptions to this trend include late Shuswap, which is expected to be the largest component of the 2010 total return.

Based on the forecast approach that incorporates recent declining trends in stock productivity into the methods, there is a one in four chance that the return of Fraser River Sockeye Salmon will be at or below 7.0 million (i.e. lower quarter of the forecast range) and a three in four chance that it will be at or below 18.3 million (i.e. lower three quarters of forecast range) (Table 12). The mid-point of the forecast is 11.4 million. Given uncertainty regarding stock productivity through to 2010, two additional forecast approaches with different assumptions about productivity through to 2010 returns were also presented: productivity similar to the long term average and low productivity similar to the 2009 return year. The forecast methodology was reviewed on March 9, 2010 and the final research document, which includes the details of the forecasts associated with these alternate productivity scenarios, will be posted on the Canadian Science Advisory Secretariat website at: <http://www.dfo-mpo.gc.ca/csas/>.

Note that for the 2010 forecast, presentation of different probabilities that convey forecast uncertainty has changed. Historically, probabilities were described as “the probability of exceeding the specified forecast” with the lowest probability levels (e.g. 10p & 25p) associated with the highest forecasts. In the 2010 forecast, probabilities were described as “the probability of returning at or below the specified forecast”. In this arrangement, the lowest probability levels (e.g. p10 & p25) are now associated with the lowest forecast returns. Hence the “old” 75p forecast is equivalent to the “new” p25 forecast (note the placement of the “p” to differentiate from previous years’ notation). This new format is more appropriate from a conservation perspective.

Table 12. Pre-season sockeye return forecasts (at various probability levels) for 2010 by stock and timing group. Brood year escapements for recruits returning in 2010 and forecasted returns for 2010 are presented and colour coded relative to their 1980-2003 cycle average: red (< avg); yellow (avg); green (>avg).

Run timing group	Forecast Model ^b	BY (06) BY (05) Prod. Prod. Ret					Mean Run Size		Probability that Return will be at/or Below Specified Run Size ^a				
		(EFS)	(EFS)	(-8yr)	(-4yr)	2010	all cycles ^c	2010 cycle ^d	10%	25%	50%	75%	90%
Stocks													
Early Stuart	RS4yr	15,900	51,000				304,000	113,000	17,000	26,000	41,000	66,000	101,000
Early Summer (total excluding miscellaneous)							--	--	174,000	374,000	783,000	1,601,000	3,047,000
Bowron	RS4yr	600	900				(504,000)	(797,000)	(129,000)	(269,000)	(581,000)	(1,251,000)	(2,543,000)
Fennell	Power	8,900	3,000				21,000	20,000	400	700	1,300	2,500	4,600
Gates	KF	1,500	9,000				29,000	26,000	9,000	16,000	31,000	56,000	90,000
Nadina	Ricker-FrD-mean	4,500	12,000				59,000	17,000	2,000	4,000	9,000	17,000	33,000
Pitt	Ricker	20,000	33,000				79,000	22,000	9,000	16,000	30,000	60,000	107,000
Raft	Ricker-PDO	3,400	17,000				60,000	55,000	7,000	12,000	26,000	53,000	96,000
Scotch	KF	73,000	3,000				33,000	16,000	7,000	13,000	24,000	42,000	71,000
Seymour	RS4yr	57,000	2,000				73,000	248,000	40,000	106,000	265,000	640,000	1,450,000
Misc ^e	RS (Sc/Se)						150,000	393,000	55,000	101,000	195,000	380,000	691,000
Misc ^f	RS (Ra/Fe)						--	--	13,000	58,000	134,000	242,000	302,000
Misc ^g	RS (Ra/Fe)						--	--	7,000	10,000	14,000	22,000	42,000
Misc ^h	RS (Esum)						--	--	24,000	35,000	48,000	76,000	144,000
Misc ⁱ	RS (Esum)						--	--	1,000	1,000	4,000	6,000	10,000
							--	--	0	1,000	2,000	4,000	6,000
Summer							5,332,000	5,059,000	1,045,000	1,605,000	2,612,000	4,343,000	6,984,000
Chilko ^j	RJ4yr (smolt)	71M	77M				1,740,000	1,900,000	864,000	1,273,000	1,958,000	3,011,000	4,435,000
Late Stuart	RS8yr	14,000	160,000				750,000	396,000	8,000	21,000	60,000	169,000	429,000
Quesnel	KF	90,000	800,000				2,350,000	2,200,000	111,000	215,000	438,000	909,000	1,727,000
Stellako	RS4yr	80,000	100,000				492,000	563,000	62,000	96,000	156,000	254,000	393,000
Late (total excluding miscellaneous)							3,193,000	9,126,000	3,331,000	5,023,000	8,003,000	12,305,000	19,695,000
Cultus ^j	Smolt-Jack	400,000	100,000				(3,193,000)	(9,126,000)	(3,264,000)	(4,951,000)	(7,871,000)	(12,035,000)	(19,352,000)
Harrison ^k	Ricker-FrD-mean	91,000	57,000				17,000	18,000	5,000	6,000	9,000	14,000	19,000
Late Shuswap	Ricker-cyc	1.2M	12,000				58,000	NA	53,000	97,000	195,000	429,000	1,167,000
Portage	KF	11,000	8,000				2,210,000	7,640,000	3,101,000	4,652,000	7,252,000	10,791,000	16,702,000
Weaver	Ricker-FrD-peak	14,000	24,000				55,000	90,000	8,000	18,000	42,000	99,000	221,000
Birkenhead	KF	140,000	27,000				406,000	690,000	71,000	126,000	264,000	472,000	799,000
Misc. non-Shuswap ^l	RS (Weaver)						447,000	688,000	26,000	52,000	109,000	230,000	444,000
									67,000	72,000	132,000	270,000	343,000
TOTAL							-	-	4,567,000	7,028,000	11,439,000	18,315,000	29,827,000
(TOTAL excluding miscellaneous)							(9,333,000)	(15,095,000)	(4,455,000)	(6,851,000)	(11,105,000)	(17,695,000)	(28,980,000)

a. probability that return will be at/or below specified projection.

b. see Methods & Appendix 1 & 2 for model descriptions.

c. sockeye: 1980-2006 (excluding miscellaneous stocks)

d. sockeye: 1980-2008 (excluding miscellaneous stocks)

g. North Thompson River

h. Nahatlach River & Lake

i. Chilliwack Lake and Dolly Varden Creek

j. Brood year smolts (not effective females)

k. Harrison are age-4 (2006 brood year) and age-3 (2007 brood year)

l. unforecasted miscellaneous Late Run stocks (Harrison L.)

e. unforecasted mis. Early Summer Stocks (Early Shuswap stocks: S.Thompson); return timing most similar to Scotch/Seymour

f. unforecasted misc. Early Summer stocks (N. Thomson tributaries; return timing most similar to Fennell/Bowron/Nadina).

Model definitions: Pi (Pine Island SST covariate); Ei (Entrance Island SST covariate); FrD (Fraser discharge); PDO (Pacific Decadal Oscillation (PDO) covariate); cyc (cycle line stock-recruit data only); KF (Ricker model using Kalman Filter for 'a' parameter estimation); RS4yr (product of R/S from last 4 brood years & EFS in brood year); RJ4yr (product of R/smolt from last 4 brood years & smolts in brood year); RS8yr (product of R/S from last 8 brood years and EFS in brood year); R/S (used for stocks with no recruit data: product of R/S for stocks as indicated and EFS).

Fraser Sockeye Escapement Plan

2010 Escapement Strategy and Harvest Rate Calculations: The Fraser River Sockeye Spawning Initiative (FRSSI) was undertaken to develop escapement strategies for Fraser River sockeye. Feedback received through consultations with First Nations, Regional and sector advisory processes was considered in the development of the 2010 Fraser Sockeye escapement plan strategies. Refer to the DFO consultation website for details on options considered. Table 13a (p50) and Table 13b (p25) identify potential outcomes of the escapement plan that will be implemented in 2010 for the p50 and p25 forecast levels, respectively.

FRSSI uses a simulation model to evaluate different management objectives and assumptions about stock dynamics in a consistent framework. The FRSSI model was developed to improve our understanding of the complex interaction between the population dynamics of individual stocks and escapement strategies that, due to practical constraints on in-season management, are applied to groups of stocks. The model currently includes 19 stocks (i.e. production units delineated based on spawning site and timing), grouped into 4 timing aggregates for management purposes. Each model scenario applies a specified escapement strategy to a timing aggregate 48 years into the future, starting with recent years, and tracks the performance of each individual stock within the aggregate.

The stocks within each timing group are modelled individually, based on the historical relationship between spawning escapement (i.e. number of adults in the brood year) and recruitment (i.e. the number of adults returning four and five years later), but does not capture the dynamics of each individual life stage (e.g. egg-to-fry survival, juvenile migration).

Refer to report number 2855 by Pestal et al. (2008) on the following website for more information about the FRSSI model: <http://www.dfo-mpo.gc.ca/libraries-bibliotheques/manu-eng.htm>

The escapement options at two different run size forecasts (the mid-point (p50) and the lower quarter of the forecast range (p25) are shown in Tables 13(a) (p50) and 13(b) (p25).

Table 13(a): 2010 Escapement Options at p50

2010 Fraser River sockeye escapement plan using current run size estimates (in thousands of fish).
p50 Run Size Estimates used in this table!

Stock Group	Run Size Estimate of forecasted stocks	Run Size Reference Points		Total Mortality Rate Guidelines	Total Allowable Mortality at Run Size	Escapement Target at Run Size	Management Adjustment (a)		Exploitation Rate after MA (b)
Early Stuart	41	- 156 390	156 390	0% 0 - 60% 60%	0%	41	63%	26	0%
Early Summer	783	- 270 674	270 674	0% 0 - 60% 60%	60%	313	51%	160	40%
Summer	2,612	- 1,000 2,500	1,000 2,500	0% 0 - 60% 60%	60%	1,045	7%	73	57%
Lates (incl. Birkenhead)	8,003	- 1,220 3,050	1,220 3,050	0% 0 - 60% 60%	60%	3,201	66%	2,113	34%
Cultus	9								20-30% (c)
Sockeye Totals	11,439					4,500		2,372	
	Est. Return								

a) Management adjustments (MAs) are added to the escapement targets to correct for the actual differences between Mission and upstream abundance estimates over all years. This approach makes no prior assumption about environmental conditions because we don't yet know whether conditions will be favourable or unfavourable in 2010. We expect that the MAs will be revised to take into account environmental conditions during the inseason management period.

b) A fixed ER floor of up to a maximum of 10% for all stock groups is in place to allow for the harvest of co-migrating stocks and/or species in cases when the total allowable mortality in management adjustment results in an exploitation rate of less than 10%. Test fishing impacts will be included as part of the 10% maximum ER floor. The 10% fixed ER floor is to allow for fisheries targeted on more abundant co-migrating stocks and not intended for directed harvest opportunities on that run timing group nor is it intended to be an additional ER limit based on the escapement plan TAM rules.

c) Cultus Lake exploitation will be limited to a maximum of up to 30%, without exceeding the exploitation rate implemented for the Late run sockeye management aggregate.

Table 13(b): 2010 Escapement Options at p25.

2010 Fraser River sockeye escapement plan using current run size estimates (in thousands of fish).
p25 Run Size Estimates used in this table:

Stock Group	Run Size Estimate of forecasted stocks	Run Size Reference Points		Total Mortality Rate Guidelines	Total Allowable Mortality at Run Size	Escapement Target at Run Size	Management Adjustment (a)		Exploitation Rate after MA (b)
Early Stuart	26	-	156	0%	0%	26	63%	18	0%
		156	390	0 - 60%					
Early Summer	374	-	278	0%	26%	278	51%	142	0%
		278	695	0 - 60%					
Summer	1,805	-	1,000	0%	38%	1,000	7%	70	33%
		1,000	2,500	0 - 60%					
Lates (incl. Birkenhead)	5,023	-	1,217	0%	60%	2,009	86%	1326	34%
		1,217	3,044	0 - 60%					
Cultus	0								20-30% (c)
Sockeye Totals	7,028					3,313		1,555	
Est. Return									

a) Management adjustments (MAs) are added to the escapement targets to correct for the actual differences between Mission and upstream abundance estimates over all years. This approach makes no prior assumption about environmental conditions because we don't yet know whether conditions will be favourable or unfavourable in 2010, that the MAs will be revised to take into account an environmental conditions during the inseason management period.

b) A fixed ER floor of up to a maximum of 10% for all stock groups is in place to allow for the harvest of co-migrating stocks and or species in cases when the total allowable management adjustment results in an exploitation rate of less than 10%. Test fishing impacts will be included as part of the 10% maximum ER floor. The 10% fixed ER floor is for fisheries targeted on more abundant co-migrating stocks and not intended for directed harvest opportunities on that run timing group nor is it intended to be an additional ER based on the escapement plan TAM rules.

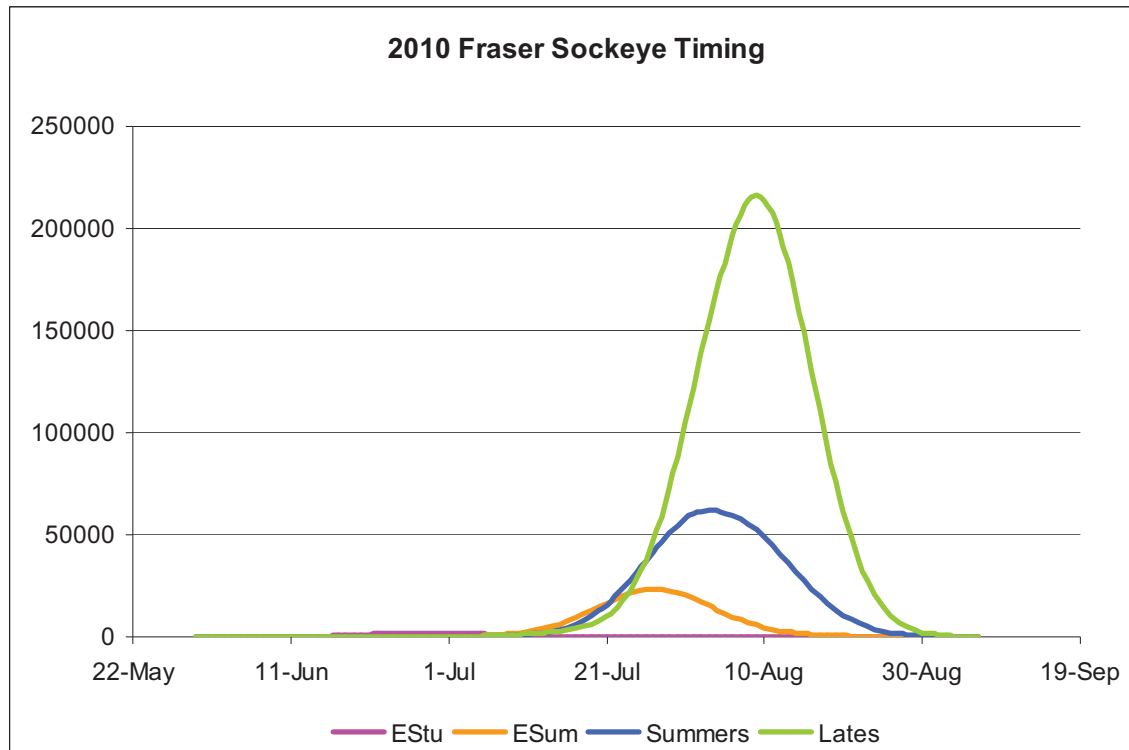
c) Cultus Lake exploitation will be limited to a maximum of up to 30%, without exceeding the exploitation rate implemented for the Late run sockeye management aggregate.

Incidental Harvest:

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

Run Timing: Fishing plan options are evaluated for a range of possible run sizes and return timing. In 2010, pre-season fishing plans will be developed at both the p50 and p25 probability levels. In-season run-size estimates form the basis for management once these estimates are available.

Figure 1: The preliminary run timing for the 2010 cycle and forecast abundance (based on the 50% probability level) for the four Fraser River sockeye aggregates based on a normal distribution of forecast returns.



Management Adjustments: Management adjustments are added to the escapement goal when necessary to account for discrepancies between Mission hydro-acoustic measurements and in-river catch and spawning escapement estimates and en-route mortalities (i.e. more fish are needed to pass by Mission than spawning ground requirements in order to account for measurement errors and en-route losses). Setting appropriate management adjustments is a major component of pre-season and in-season decision-making by the FRP. Management adjustment models consider observed biases as well as impacts from in-river water discharge, water temperature and timing of river entry to assist in this determination. Management adjustments are adopted by the FRP and have been applied to all four run timing groups in the past. Regardless of the causes, management adjustments to all management groups may be made in-season to increase the probability that spawning targets will be met.

5.5.4. In-season Decisions

Run Size Estimation and TAC calculations: Pre-season forecasts of run size at various probability levels different than the 50% probability level may be used to guide development of pre-season harvest plans. In-season run size estimates based on information from test fishing operations, catches during commercial fishery openings and assessment fisheries, and hydro-acoustic estimates of abundance at the PSC hydro-acoustic facility at Mission, BC will be provided by the PSC staff to the FRP for consideration. In 2010, the primary Mission acoustic estimate will be derived from a combination of a shore based split beam system and from single and split beam systems located on a boat that transects the river slightly downstream from the shore based system.

The FRP will meet regularly from late June to late September to review information as it becomes available over the course of the sockeye migration. Run size estimates will be regularly

updated through the FRP process. In-season run size estimates are then used to set spawning escapement objectives, gross escapement objectives, calculate available TAC, and determine opportunities for fishery openings. The TAC will also be affected by the ability of harvesters to access this TAC as well as a number of factors, including in-river migration conditions and conservation requirements for other co-migrating stocks or species.

Information on in-season run size estimates and management actions, such as openings and closures, as well as other important information for commercial, recreational and First Nations fisheries are posted on the Internet regularly throughout the fishing season by the Department and the PSC at: www.psc.org/news_frpnews.htm (PSC) and at DFO, fishery specific notices can be found at:

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

5.5.5. Early Stuart Management

Early Stuart sockeye have experienced poor returns in recent years, partly due to high en-route mortality as they migrate up the Fraser River. The escapement strategy, adopted in 2007, was intended to reduce total allowable mortality at run sizes below 270,000, with minimal allowable mortality at run sizes below 108,000. This strategy was further revised in 2009, to increase the probability of higher escapements. The revised 2009 strategy reduced total allowable mortality at run sizes below 390,000 total returns, and minimized allowable mortality at run sizes below 156,000. The implications of the escapement strategy for 2010 fishing plans will be strongly influenced by in-season run size estimates across the forecast range as well as management adjustments to account for environmental conditions during the return migration.

In recent years, window closures and other fishing restrictions have been necessary in commercial, recreational and First Nations fisheries to achieve very low exploitation rates indicated by the escapement plan. These measures are expected to be required again in 2010 which will include a rolling three week window closure based on run timing of the Early Stuart sockeye migration through various fisheries (Table 14). Directed fisheries targeting Early Stuart sockeye in 2010 are highly unlikely.

The table below indicates the anticipated window closure dates which also includes an additional one week closure at the end to provide additional protection to the Early Miscellaneous stock component (including Bowron) of the Early Summer stock group. Note that closure dates may vary based on updated in-season information on run timing and abundance.

Table 14: Window closure dates for protection of Early Stuart (3 weeks) and a portion of the Early Summer (1 week) in 2010. The total length of the closure is 4 consecutive weeks.

2010 Management Action Dates for Early Stuart and Early Summer (early stocks) Conservation Measures

Early Stuart Run

Size= 41,000 (p50)

Printed on:

14-Jun-10

A20 Peak= 04-Jul

Area	Actual Dates Start (date, time)	End (date, time)	Management Action
Area 127	open Jul 22, 7 days/week		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.)
Area 11	open Jul 22, 7 days/week		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.)
Area 12	open Jul 22, 7 days/week		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.) Closed to sockeye above Lewis Pt until late July (Nimpkish sockeye)
Area 13	open Jul 22, 7 days/week		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.)
Area 20	open Jul 22, 7 days/week		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.)
Area 29	open Jul 22, 7 days/week (off the river mouth)		Open to fishing for Fraser sockeye as of July 22 (sn., gn., tr.)
Steveston-Port Mann Br	Jun 28 12:00hrs	Jul 26 12:00hrs	Open to selective fishing for Chinook with a sockeye encounter limit.
Port Mann Br-Sawmill Cr	Jun 28 18:00hrs	Jul 26 18:00hrs	Open to selective fishing for Chinook with a sockeye encounter limit.
Sawmill Cr-Texas Cr	Jul 4 18:00hrs	Aug 1 18:00hrs	Open to selective fishing for Chinook (dipnet, rod and reel only)
Texas Cr-Kelly Cr	Jul 4 18:00hrs	Aug 1 18:00hrs	Open to selective fishing for Chinook (dipnet, rod and reel only)
Kelly Cr-Deadman	Jul 4 18:00hrs	Aug 1 18:00hrs	Open to selective fishing for Chinook (dipnet, rod and reel only)
Deadman-Chilcotin	Jul 11 18:00hrs	Aug 8 18:00hrs	Open to selective fishing for Chinook (dip net only)
Chilcotin-Quesnel	Jul 11 18:00hrs	Aug 8 18:00hrs	Open to selective fishing for Chinook (dip net only)
Quesnel-Hixon	Jul 11 18:00hrs	Aug 8 18:00hrs	Open to selective fishing for Chinook (dip net only)
Hixon-Prince George	Jul 16 18:00hrs	Aug 13 18:00hrs	Open to selective fishing for Chinook (dip net only)
Prince George-Stuart R	Jul 16 18:00hrs	Aug 13 18:00hrs	Some allowable harvest in terminal area

The dates of the closure may be adjusted in season based on information indicating the timing of the Early Stuart sockeye run is earlier or later than average. In the event in-season assessment indicates that the Early Stuart sockeye are returning in enough abundance to indicate there is a harvestable surplus, the proposed window closure dates may be adjusted.

5.5.6. Early Summer Management

The escapement plan TAM rules and associated harvest constraints for the Early Summer stock aggregate are identified in Tables 13(a) p50 and 13(b) p25. In addition, harvest constraints are also planned to provide further protection to weaker populations migrating in the earlier timed component of the Early Summer aggregate stock group. These measures will include an additional 1 week extension of the Early Stuart window closure (Table 14) and management of

Canadian fisheries with the target of reducing exploitation rates to 25% or less on the weaker, earlier timed Early Summer stocks. Specific plans will be confirmed based on in-season information.

5.5.7. Summer Run Management

The escapement plan TAM rules and associated harvest constraints for the Summer run stock aggregate are identified in Tables 13(a) p50 and 13(b) p25. Harvesting plans will focus on more abundant stocks (e.g. Chilko) in the summer run stock group to reduce impacts on less abundant stocks where possible. Specific plans will be confirmed based on in-season information.

5.5.8. Late Run and Cultus Lake Sockeye Management:

Late Run

The escapement plan TAM rules and associated harvest constraints for the Late run stock aggregate are identified in Tables 13(a) p50 and 13(b) p25.

While 2010 is the dominant Late run year, Late Run sockeye continue to enter the Fraser River much earlier than historically and have experienced very high levels of en-route and/or pre-spawn mortality since the mid 1990s when entering the Fraser early. While a range of studies have been, and continue to be, undertaken to attempt to understand the cause and impact of this phenomenon, no causal factors have been identified. Planning for 2010 will consider the the risk of early entry occurring in 2010 and the associated potential for mortalities will be incorporated into the plan. The Cultus Lake stock will continue to limit Late run exploitation rates in planning fisheries for 2010.

Cultus Lake sockeye

Management of Cultus Lake sockeye will be based on the Cultus Lake sockeye management objective and an assessment of in season information for the Late run sockeye stock aggregate.

Due to the low number of Cultus fish compared to the co-migrating stocks, the exploitation rate for Cultus sockeye cannot be calculated directly. Instead, the Cultus exploitation rate is assumed to be the same as the exploitation rate from the similarly timed Late run stocks (excluding Harrison and Birkenhead) caught seaward of the confluence of the Fraser and the Vedder Rivers. Exploitation rates are based on DNA analysis of fish sampled either directly from fisheries or indirectly, from nearby test fisheries.

5.5.9. Management Adjustments

Management adjustments are estimated pre-season for all run timing groups by the FRP. They may also be modified in-season by the FRP based on indications of changes in migration conditions in the Fraser River reported in weekly Environmental Watch reports and models used to predict the impact of current Fraser River conditions on the mortality of migrating fish. For further information see: www-sci.pac.dfo-mpo.gc.ca/fwh/.

5.5.10. Issues

Determining the migration pattern and run size of Cultus Lake sockeye will be difficult in 2010 due to the expectation of low abundance in relation to other Late and Summer run stocks. Consequently, Cultus Lake exploitation rates will be estimated in-season using the exploitation rate from similarly behaved stocks as a proxy. Unfavourable in-river environmental conditions or early entry of Late runs into the Fraser River may result in management actions in order to ensure target spawning goals are met. With restrictions to protect co-migrating Cultus Lake sockeye, some Summer Run and Late run stocks may arrive at the spawning grounds in numbers well in excess of spawning requirements. In addition to harvest restrictions, other recovery actions are underway for Cultus Lake sockeye. Increased numbers of fry and smolts from the hatchery releases, and an experimental predator control program conducted by Area E harvesters are ongoing. The Department will continue to work with all harvesters in order to have orderly and manageable fisheries conducted.

5.5.11. Prospects for 2010

General outlooks for the four stock aggregates, as well as stocks of special concern are outlined in Table 15.

Table 15. General fisheries outlook for 2010 Fraser sockeye

Stock/MU	Outlook	Comments
Early Stuart	Any targeted fisheries will need to be carefully planned and paced in order to ensure escapement targets are met. A precautionary approach to fishery planning may be warranted.	The 2010 cycle is the first of three weaker cycles following the dominant cycle for Early Stuart. The 2006 brood year escapement of effective female spawners (15,900 EFS) was similar to the cycle average (16,900 EFS).
Early Summer	There may be opportunities for directed fisheries. However, fishery planning may need to consider options to reduce impact on some weak co-migrating Early Summer stocks.	For individually forecasted stocks, the 2006 brood year escapement of effective female spawners (168,000 EFS) was above the cycle average (102,000 EFS). Most stocks were at or above their cycle average brood year escapements. Bowron was the one exception, with a brood year escapement that was less than 25% of the cycle average.
Summer	Directed fisheries expected, but will be constrained by concerns for ensuring Early Summer targets and conservation concerns for Cultus and Sakinaw are met.	Summer run stocks are; Chilko, Late Stuart, Stellako and Quesnel. Chilko brood year (2006) escapement of effective female spawners (260,000 EFS) was similar to the cycle average (290,000 EFS), however juvenile production was exceptionally high (71 million smolts). The 2010 cycle is the first of three weaker cycles following the dominant cycle for Late Stuart and Quesnel. Stellako brood year (2006) escapement of effective female spawners (80,000 EFS) was similar to the cycle average (79,000 EFS)

Late Run	Concern regarding high enroute mortality continues	The 2006 brood year is a dominant cycle for the highly cyclic Late Shuswap stock. Total Late run escapement in 2006 was 1.4 million effective female spawners for these stocks which are below the cycle average of 1.6 million (1980-2006). In contrast, the spawning escapement for Harrison has been well above documented escapements in recent years.
Special Concern Cultus Lake	– Conservation concern	Cultus continues to be very depressed and requires continued protection. Returns and escapement have substantially declined since the 1960s. Escapement has been trending downward and the brood year escapement (2006) of 418 effective female spawners was particularly low compared to the cycle average (5,000 EFS). On-going recovery actions (e.g. predator removal and hatchery enhancement) for this COSEWIC listed species ('endangered') are expected to continue in 2010.
Special Concern - Strait of Georgia Sakinaw	Conservation concern	The stock is extremely depressed, requiring continued protection. The projected return for 2010 is fewer than 10 fish.

5.6. Barkley Sound Sockeye

5.6.1. Background

- The Barkley Sound stock group is composed of sockeye returning to the Somass River (Sproat and Great Central Lake) and Henderson Lake.
- The stock group returns from May to October; the main fishing period typically occurs from mid-June to early August.
- This group of stocks is fished by First Nations, the recreational sector and the commercial sector (gill net, seine and troll).
- Somass optimum escapement is estimated to be 350,000 (200,000 Great Central Lake and 150,000 Sproat Lake) and 50,000 for Henderson Lake, while the minimum escapement is set at 200,000 (Great Central and Sproat Lake combined). Under the Somass Sockeye Harvest Strategy, escapement goals increase with run size reaching 600,000 for a run of 1.8 million. A review of the minimum escapement requirement for both lake systems will begin in 2010.
- The harvest plan is based on variable exploitation rate set out in the Somass Management Framework.
- The Barkley Sound sockeye fishery is terminal, with no directed fisheries outside Barkley Sound.
- A round table advisory body assists in the development of harvest plans and in-season management for the various fisheries.
- The basis for developing annual harvest plans on these stocks is to provide for:
 - Food, social and ceremonial harvest opportunities of a number of Nuuchah-nulth Tribal Council First Nations;
 - stable and predictable access for the recreational fishery; and

- meeting commercial catch allocations by licence category for “B”, “D” and “G” and economic opportunities for two Nuu-chah-nulth Tribal Council First Nations;

5.6.2. General Constraints

- Lack of precision of in-season run size estimates in the early portion of the season limits the exploitation rate.
- Environmental conditions may impact the timing of entry into the river, and may contribute to high mortality.
- Non-target by-catch (coho, chinook and steelhead) is of concern.
- Henderson sockeye is generally the weakest of the three sockeye stocks and frequently requires management measures to prevent overexploitation.

5.6.3. Pre-season Planning

- A pre-season forecast is used to determine fishery opening dates.
- Access issues are dealt with by the CSAB process for commercial fisheries, the SFAB for recreational fisheries, and bilateral discussions with First Nations. The Tseshaht and Hupacasath First Nations annually negotiate FSC sockeye requirements with the Department. Consultation will occur regarding the sequence and timing of these fisheries. Harvests of Barkley Sound sockeye may also occur in FSC fisheries for Huu-ay-aht, Toquaht, Uchucklesaht and Ucluelet First Nations.
- In years of below average abundance, catch targets for all participants must be set not to exceed a fixed overall harvest rate for the month of June. This precautionary approach is required to minimize the risk of over harvesting prior to commencement of in-season run-size re-forecasts.

5.6.4. In-season Decisions

- In order to provide protection for Henderson sockeye, boundary adjustments may occur in-season. In past years gill net fisheries were moved inside of Pocahontas Point after mid-July depending on the level of concern for Henderson sockeye. With continuing low escapements to Henderson Lake, gill net fisheries will move inside of Pocahontas Point in early July.
- The framework in Table 16 was developed in consultation with Tseshaht and Hupacasath First Nations, commercial and recreational harvesters. The fishing plan for 2010 will be finalized through continuing negotiations.

Table 16: Key Decision Points for Barkley Sound Sockeye

Run Size	First Nations (FSC) Fisheries	Recreational Fisheries	Commercial Fisheries
Less than 200,000	No harvest	No harvest	No harvest
200-210,000	Harvest initiated	No harvest	No harvest
210-240,000	Harvest	No harvest	No harvest
240-400,000	Harvest	Harvest initiated	No harvest
Greater than 400,000	Harvest	Harvest	Harvest initiated

Weekly in-season run size estimates are derived from commercial, recreational and First Nations fishery catches, escapement estimates from electronic counters on Sproat and Stamp Rivers, and estimates of terminal abundance from seine test fisheries and river surveys. The Barkley Sound Working Group meets weekly beginning in the last week of June to review the information and determine in-season run size estimates.

In-season harvest plan decisions are based on a weekly forecast of in season abundance and the status of catches relative to allocations. A multi party advisory board, the Area 23 Harvest Committee meets weekly in-season to review the weekly run size re-forecast, catch and escapement for the purpose of developing weekly fishing plans. Commercial boundary adjustments to protect Henderson Lake sockeye in the first week of July may be required.

5.6.5. Issues

- Determining recreational daily limits at low run sizes.
- DNA sampling to verify impacts is an ongoing component of fishery management in the Barkley fishery. The level to which DNA analyses will be conducted is dependent on available funding and other priorities with Barkley Sound sockeye
- Lack of agreement about escapement goals at higher run sizes.
- Sharing arrangements and timing of access for seine and gill net.
- Maa-nulth member group participation will be required in the advisory process.
- Uncertainty associated in negotiating economic opportunities for Tseshah and Hupacasath First Nations.

5.6.6. Prospects for 2010

For 2010, the sockeye return to the Somass River is forecast to be 600,000 (range from about 350,000 to 850,000), which is above levels required to support fishing opportunities for all sectors in Area 23.

As in past years, the pre-season forecast provides information to guide fisheries planning in the months leading up to the start of the return. The pre-season forecast is revised in-season based on information provided through test fishing and escapement enumeration, with in-season forecast revisions anticipated to begin in July 01, 2010.

5.7. Okanagan Sockeye

5.7.1. Background

Okanagan River sockeye is the last remaining viable sockeye salmon stock returning to Canada through the Columbia River. Run timing into the Canadian portion of the Okanagan River depends on water temperature. Peak spawning usually occurs from mid to late October. Regularly there is a difference of approximately 40-60% between Okanagan River sockeye enumerated at Wells Dam on the Columbia River and adults that are enumerated on the spawning grounds in Canada. The majority of this difference is believed to be due to en-route mortalities associated with the high water temperatures these sockeye face but there is also some removal of sockeye in United States recreational and First Nation subsistence fisheries in the Columbia and Okanagan Rivers above Wells Dam.

5.7.2. Pre-season Planning

The escapement goal is 35,500 sockeye as enumerated on an indexed section of the spawning ground or 61,200 sockeye as enumerated through Wells Dam on the Columbia River in Washington State. To date harvest plans with the Okanagan First Nations have been based on the escapement of sockeye through Wells Dam by July 15.

5.6.3 In-season Decisions

If projected escapement past Wells Dam is less than 10,000 sockeye, extremely limited Okanagan First Nations fishing for FSC purposes is recommended. If projected escapement past Wells Dam is between 10,000 and 60,000 sockeye, a First Nations allowable catch of 5% of the run that has migrated past the dam by July 15 is permitted. If projected escapement past Wells Dam exceeds 60,000 sockeye, a First Nations allowable catch of 10% of the run that has migrated past the dam by July 15 is permitted. Should the projected escapement past Wells Dam exceed 60,000 sockeye, recreational and economic fisheries in Canada may be considered.

5.6.4 Prospects for 2010

The preliminary forecast return for Okanagan River sockeye in 2010 is 110,300 fish with approximately 90% of the return comprised of 4-year old fish. Returns are expected to exceed the long term average 17,550 (avg. 1970-2006) for the 2010 cycle based on the brood year escapement and recent smolt to adult return rates. Spawning escapement in the 2006 brood year was 20,819 (AUC count) and the average spawning escapement on the 2010 cycle is 16,098 (AUC count). However, a high degree of uncertainty exists with respect to marine survival conditions. Harvest opportunities for First Nations FSC purposes is anticipated and limited directed fishing opportunities on these stocks by other harvest groups is possible.

5.8. Johnstone Strait Chum

5.8.1. Background

The Johnstone Strait chum fishery targets fall run chum stocks that migrate through Johnstone Strait. Most of these fish spawn in Johnstone Strait, Strait of Georgia, and Fraser River areas, though a small component is bound for Washington State systems. The main components of the harvest are the Mid-Vancouver Island (MVI) and Fraser River stock groupings. The migration timing of these fall chum stocks in the Johnstone Strait fishing area range from September to November with the peak typically early to mid October. Mixed-stock fisheries occur in Areas 12 and 13 with terminal opportunities where surpluses are identified. Harvesters include First Nations (FSC fisheries), recreational, and commercial (seine, gill net and troll).

Due to the variation in chum returns over the years, a new strategy for chum management was initiated in Johnstone Strait starting in 2002. In order to ensure sufficient escapement levels, while providing more stable fishing opportunities, a fixed exploitation rate strategy was implemented. The exploitation rate is set at 20% across all harvesters, regardless of total abundance. Of this 20%, 16% is allocated to the commercial sector, and the remaining 4% is set aside to satisfy FSC and recreational harvest requirements and to provide a buffer to the commercial exploitation. Past tagging studies conducted in 2000, 2001 and 2002 helped in the development of this strategy in assessing the exploitation rate and migration timing of chum stocks in the Johnstone Strait.

Under the fixed harvest rate model, commercial fleets are expected to have more consistent and predictable fishing opportunities than with the previous clockwork model. This was one of the main objectives for the new approach. This goal has been met with regular fisheries planned each year well in advance of the actual return. A chum working group meeting will be scheduled in the May to June time period to begin planning discussions for the 2010 fishery.

It is anticipated that there will be two competitive seine openings; however, options for a demonstration fishery in 2010 are under discussion with the Area B Harvest Committee.

In 2008 and 2009, an Area H troll full fleet share-based demonstration troll fishery was implemented involving transferable boat days. The initial allocation of boat days was based on Area H's share of the allowable troll exploitation rate. The fishery was divided into two fishing periods with a short break in between. Boat days were transferable within each fishing period but not between periods. A maximum of one third of the total number of boat days held could be carried over from fishing period one to fishing period two provided that that the day(s) was not fished.

5.8.2. General Constraints

- For Inside Southern chum salmon a critical threshold, where little or no harvesting occurs, is defined as 1.0 million in Chapter 6 of the PST.
- For run sizes above the critical threshold, fisheries will be conducted using a fixed harvest rate approach. The fixed harvest rate approach is based upon a 20% harvest rate on the return through Johnstone Strait (16% commercial and 4% for FSC and recreational fishing).
- When run sizes are expected to be below the critical threshold, commercial fisheries will be suspended and there will be only assessment fisheries and non-commercial fisheries.
- No commercial opportunities will occur prior to late September due to coho conservation requirements.
- First Nations harvest opportunities are provided to meet FSC requirements.
- Recreational fishing opportunities are provided at normal daily limits of four chum per day.

5.8.3. Pre-season Planning

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

Fishing schedules and exact fishing dates will be confirmed pre-season following consultation with industry and other stakeholders. Considerations are given to avoid weekend commercial fisheries in lower Area 13, in order to minimize any conflicts with the recreational fishery.

Following is the fishing plan that has been developed in recent years:

Seines - First Fishery

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

Seines - Second Fishery

- Second fishery will provide for a one day, 10 hour fishery, in the third week of October. Note that the reduction in time to 10 hours is due to reduced daylight hours).
- If effort during the first and/or second fishery is considerably less than anticipated or severe weather hampers the fishery then additional fishing time will be considered.
- An option for a demonstration fishery in 2010 is under discussion with the Area B Harvest Committee and is to be confirmed.

Gill net

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

Troll

- Fisheries are scheduled to commence at the end of September or first week of October.
- Fishing opportunities on the weekend and Statutory Holidays in lower Area 13 are generally not planned in order to minimize any potential gear conflicts with the recreational fishery.
- In 2010, Area H is again planning an effort share based demonstration fishery. Refer to Appendix 10 for further details.

5.8.4. In-season Decisions

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

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

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

5.8.5. Issues

- When run size is expected to be below the critical threshold of 1.0 million fish commercial fisheries will be suspended and there will be only assessment fisheries and non-commercial fisheries.
- There have been requests by the seine fleet to review the effort based management approach and develop a revised approach that is better suited to implement share based (ITQ) fisheries. Discussions are continuing regarding potential demonstration fishery options for 2010.
- A troll demonstration fishery is planned again for 2010 which will be an effort share based management approach similar to 2009.

- A plan to minimize gear conflicts between the commercial and recreational sectors was implemented starting in 2007. Subarea 13-7 (Deepwater Bay) was closed during weekends and Thanksgiving Monday to the commercial sector. During weekdays, Subareas 13-6 and 13-7 were open to commercial gear. This plan is expected to continue in 2010.

5.8.6. Prospects for 2010

The 2010 chum return through Johnstone Strait is projected to be near target, based on average to above average escapements in the 2006 brood year; however, indications of below average marine survival rates are expected. There is high variability in chum returns, ocean survival rates will be a key factor in the strength of 2010 returns.

5.9. Fraser River Chum

5.9.1. Background

The Fraser River chum run size estimate is derived from a run size estimation model based on the Albion test fishery with the first estimate available in mid-October. The escapement goal for Fraser River chum is 800,000.

5.9.2. General Constraints

- Albion test fishing data will be used to identify the abundance of chum salmon returning to the Fraser River. The first in-season run strength assessment will be announced October 15.
- Management of the chum fisheries will be based upon in-season information.
- By-catch of other species will be minimized as required (e.g. coho and steelhead). Conservation of Interior Fraser coho will result in fishing restrictions from early September to mid-late October in the main stem of the river from the mouth to Mission.
- Conservation of upper Fraser steelhead will result in fishing restrictions to protect steelhead. These restrictions will result in fishing opportunities delayed until after mid-October in order to meet conservation requirements for Interior Fraser steelhead.
- Development of a Fraser River commercial chum salmon management plan will require involvement from the Province of British Columbia.
- Commercial fisheries for Lower Fraser River First Nations for chum salmon will be considered. If Fisheries Agreements are negotiated they will assume the same priority as Area E commercial fleet fisheries.

5.9.3. Pre-season Planning

The practice of providing forecasts for Fraser River chum salmon has been discontinued in recent years for two reasons:

- Chum salmon typically have highly variable survival and maturation rates; and
- Adoption of a management regime based on decision rules that encompass a broad range of abundance estimates as determined by the Albion test fishery make a forecast unnecessary.

Fishing plans will be developed that meet the objective for Interior Fraser River Steelhead to protect 80% of the run with a 90% certainty in Fraser River fisheries. There are ongoing discussions between DFO and the Province to develop a management framework for Interior Fraser Steelhead.

5.9.4. Decision Guidelines

Table 16 provides a summary of key decisions for the management of the Fraser River chum fishery. Further changes may be made to Table 16, dependent on results of further analysis.

Table 17. Key decision points for Fraser River chum

Run Size	Harvest Plan	First Nations	Commercial	Recreational
<800,000 in Fraser	<10%	Limited (Reduced hours and days/week fishing).	Closed	Restricted openings
800,000-916,000 in Fraser	Catch not to exceed 81,000 (72,000 First Nations and 9,000 test fishing)	Normal (72,000)	Closed	Tributary openings
916,000-1,050,000 in Fraser	Commercial catch not to exceed 10% for chum.	Normal (72,000)	Open (35,000-105,000)	Open
>1,050,000 in Fraser	Commercial catch not to exceed 15% for chum.	Normal (72,000)	Open	Open

The following additional decision guidelines apply to the management of the Area 29 chum fishery.

- Mandatory non-retention of all incidentally caught steelhead and coho.
- A minimum commercial TAC of 35,000 chum has been identified as a requirement to support a one day commercial fishery.
- The standard fishing areas for directed chum harvesting are primarily inside the river (portions of Subarea 29-9 and 29-11 through 29-17).
- Whenever practical, 24 hours notice will be provided for openings.
- Advisors will be updated on current in-season status through conference calls.
- In-river commercial gear is restricted to gill nets with a minimum mesh size of 158 mm (approximately 6.25”).
- Revival tanks are mandatory, as identified in the 2010 Area E Gill Net Conditions of Licence.

5.9.5. Issues

- There is currently fleet implementation of selective fishing methods to avoid/reduce steelhead encounters in order to minimize steelhead mortality. Shorter nets, reduced soak times and shorter duration fishery open times have been tested since 2002 with some success and will continue to be implemented in 2010.

- The importance of timely commencement of the chum fishery in order to harvest higher quality chum salmon is recognized but must fall within steelhead management objectives.

5.9.6. Prospects for 2010

Although formal quantitative forecasts are not prepared for Fraser River chum, a stock status ranging from “low” to “near target” suggests some level of abundance to conduct directed fisheries may be possible, depending on in-season information. Steelhead prospects are poor; the stock continues to show a downward decline and the abundance is well below carrying capacity. As such, Fraser River commercial fisheries will continue to be restricted.

5.10. Area 14 Chum Decision Guidelines

5.10.1. Background

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

This fishery has a specific harvest strategy, implemented since 1981. The strategy consists of limited early harvest prior to escapement occurring. The allowable early chum harvest is calculated from 65% of the predicted surplus (terminal return run size minus escapement (300,000) and buffer 100,000. The buffer safeguards against errors in forecast stock abundance. The surplus within the 100,000 buffer and remaining 35% of the surplus may be harvested provided that escapement targets have been achieved. Since 2002, Puntledge River stock returns have been above average resulting in terminal fisheries focusing on this slightly earlier timed stock. This fishery continued in 2009.

Strait of Georgia chum are managed as a component of “mixed-stock harvest strategy” chum for Johnstone Strait and the northern Strait of Georgia. Fishing opportunities are guided by commercial allocation targets for chum salmon in the south coast. Management is guided by advice from the South Coast Chum Advisory Committee which has been in operation since 2004. This committee represents interests for mid-Vancouver Island, Johnstone Strait and WCVI fisheries.

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

occur as early as the second to fourth week of October based upon in-season and past return timing of chum, chinook and coho. The management objectives for Area 14 are:

- Achieve Area 14 chum escapement requirements of 300,000.
- Ensure adequate chinook and coho escapements to Area 14 enhancement facilities.
- Provide access to First Nations for FSC purposes.
- Maximize economic return.
- Work towards south coast chum allocation targets for gill net, seine and troll.
- Minimize the harvest of passing stocks.
- Attempt to manage initial fisheries in Area 14 to avoid large surpluses (i.e. greater than 100,000).

5.10.2. General Constraints

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

5.10.3. Pre-season Planning

Opportunities for gill net, seine and troll fishery openings starting in the second or third week of October are based on pre-season forecasts and, in-season catch per unit effort (CPUE) information from commercial chum fisheries in Johnstone Strait.

A limited early harvest of chum is planned prior to escapement occurring based on the formula described above. Escapement information becomes increasingly important when considering further opportunities.

The recommended approach regarding Area 14 is made at the first meeting of the Chum Advisory Committee. This meeting is tentatively scheduled for the first week of October. If poor catches in the commercial chum fisheries in Johnstone Strait indicate low chum abundance, the decision may be deferred until the following week. Seine opportunities are normally considered from late October to late November although there may be consideration of controlled (limited effort) fishing earlier. Based on feedback from the Area D Harvest Committee, the open times for gill net fisheries in Area 14 in the latter part of 2007 were changed to start at 9 am and finish at 9 am, based on a 48 hour opening, rather than 4 pm to 4 pm. This approach was also taken in 2008, opening times varied in 2009.

5.10.4. In-season Decisions

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

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

5.10.5. Issues

- The presence of sea lions in Area 14 appears to have reduced net and troll CPUE, reduced escapement in some streams, and altered migration and holding behaviour which has impacted assessment capabilities. These impacts will be considered in the management of the fishery, and may include exploring new assessment techniques.
- In recent years the Puntledge River has experienced proportionally greater escapements than the two Qualicum Rivers and in the last two years, escapements to the two Qualicum Rivers have been below target. This trend may continue, necessitating consideration of fishing strategies to increasingly target the Puntledge River return.

5.10.6. Prospects for 2010

Brood year (2006) escapements were average. Survival rates appear average to low. Preliminary 2009 returns are projecting to be higher than the pre-season forecast for southern Strait of Georgia and Puntledge. Big and Little Qualicum and Englishman Rivers are projected to be less than forecast. For 2010, a below average return is expected; however, chum forecasts remain highly uncertain. Some fishing opportunities are anticipated.

5.11. Area 16 Chum Decision Guidelines

5.11.1. Background

This fishery targets wild chum stocks returning to river systems in the Jervis Inlet area. The main systems are Tzoonie, Deserted and Skwawka Rivers. The overall escapement goal for Jervis Inlet streams is 110,000. These terminal fisheries occur when the individual or combined escapement goals have been assured. Fishing opportunities do not occur on a regular basis. There were no fisheries in Area 16 in 2009.

Management is guided by advice from the South Coast Chum Advisory Committee which has been in operation since 2004. This committee represents interests for mid-Vancouver Island, Johnstone Strait and WCVI fisheries. Fishing opportunities do not occur on a regular basis. Area 16 chum fishing opportunities are guided by coast-wide allocations of chum salmon. Assessment in the area is conducted by Fisheries and Oceans Canada Charter Patrol vessels, DFO Stock Assessment, and Sechelt Indian Band staff.

5.11.2. General Constraints

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

5.11.3. In-season Decisions

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

5.11.4. Prospects for 2010

A below average return is expected to Area 16 streams based on trends in recent years. Fishing opportunities are unlikely.

5.12. Area 17 Chum Decision Guidelines

5.12.1. Background

This fishery is directed primarily at Nanaimo River stocks. The Nanaimo River chum stocks are supplemented by the Nanaimo River Hatchery on poor return years. Escapements fluctuate annually and fishery openings are planned in-season based on escapement estimates. Management is also guided by advice from the MVI Chum Subcommittee as discussed for Areas 14 and 16. Area 17 chums are managed as a component of Study Area chums and fishing opportunities are guided by coast-wide allocations of chum salmon. The overall escapement goal for the Nanaimo River is 60,000.

5.12.2. General Constraints

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

5.12.3. In-season Decisions – Net and Troll

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

Escapement estimates are derived from a combination of helicopter over-flights, combined DFO/Snuneymuxw in-river assessment, on-grounds charter patrol surveys of approach and terminal areas and fishery officer patrols of the river.

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

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

5.12.4. Issues

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

5.12.5. Other Fisheries

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

5.12.6. Prospects for 2010

Brood year (2006) escapements were average. Survival rates appear average to low. Preliminary 2009 returns are projecting to be near the pre-season forecast in the Nanaimo River. For 2010 a below average return is expected; however, chum forecasts remain highly uncertain.

5.13. Area 18 Chum Decision Guidelines

5.13.1. Background

This fishery is directed primarily at Cowichan River stocks and to some extent Goldstream chum are also harvested. Fishery openings in mid to late November are limited to Satellite Channel to minimize impact on the earlier timed Goldstream stocks. Chemainus River stocks are also impacted but likely to a lesser extent.

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

5.13.2. General Constraints

- Subarea boundaries protect coho holding off Cherry Point.

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

5.13.3. In-season Decisions – Net and Troll

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

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

A revised escapement target of 140,000 has been accepted by the Roundtable. The revised chum target is based on habitat area and chum spawning densities in the Cowichan River. The previous Cowichan chum escapement target of 110,000 was largely based on historical escapement estimates (visual inspection). Since the 2006 installation of the DIDSON Counter, sonar has been used to estimate the number of fish swimming past a lower river site. The sonar was instituted to assess these chum stocks because the visual counting method had deteriorated due to poor visibility through the water column (silt) and often high water from fall storms.

Results from the 2007 – 2009 seasons show that the DIDSON counter may offer a more accurate and consistent method of gathering escapement estimates, both in-season and post-season. With this new assessment tool, the Roundtable proposed a set of specific decision guidelines which would trigger commercial and recreational fisheries in Area 18. However, because the Didson counter escapement estimates have been consistently higher than other methods of assessment, the triggers for a commercial fishery were re-evaluated.

After discussion it was decided that the interim trigger, for commercial fisheries, could remain similar to the previous year. However, the initial trigger which is based on the DIDSON escapement estimate would not trigger a fishery, but would be the starting point for the test fishery in Area 18. Subsequent discussions at the Roundtable regarding the timing of the test fishery resulted in the downward revision of this trigger from 40-50,000 chum to 25,000 chum. As escapement numbers build and it becomes obvious that escapement targets will be reached, chum fisheries would take place after consultation with the Cowichan Harvest Roundtable and the MVI Chum Subcommittee.

Regardless of in-river escapement estimates, the assessment of marine abundance through the test fishery and/or over-flights will decide if there is an opening on Cowichan chum stocks in the 2010 season.

Specific dates and boundaries will be determined in-season by the roundtable process. Timing of migration is also important in terms of the health of the run and in relation to mixed stocks of Goldstream chum in the Area 18 fishing area. These issues will need to be addressed on an in-season basis.

- 25,000 chum enumerated in the Cowichan River triggers the start of the Area 18 seine test fishery.
- Overflight and Area 18 seine test fishery information will be used in conjunction with upper river spot indicators to determine whether the remainder of the escapement goal is expected to be achieved.
- Small gill net and troll fisheries will be initiated on short notice if in-stream migration numbers and marine approach area abundance warrants an opening. These fisheries are subject to commercial licence area allocation status.
- Recreational fisheries in the river open when abundance is deemed sufficient.
- Troll fisheries may open seven days per week because of demonstrated low catch rates (depending on allocation).
- Subject to fishery review and continued escapements, commercial fisheries may continue and opening types will be adjusted to meet overall guidelines.

5.13.4. Issues

- In 2009, a chum escapement prediction tool was used to estimate a weekly surplus. The tool was based on chum migration/day, and run timing dates but was built and based upon only the DIDSON data of the past years (2007 and 2008). The 2009 run duration was shorter than the previous two years. As more years of information are added to the tool, it should become more accurate in predicting weekly surpluses.
- Discussions are on-going to discuss First Nations economic opportunities.

5.13.5. Other Fisheries

First Nations FSC fisheries and tidal/non-tidal recreational fisheries are conducted on these stocks. Tidal recreational fisheries are subject to the normal daily and possession limits. Non-tidal recreational fisheries will also be considered in 2010, if escapement and FSC needs are met.

5.13.6. Prospects for 2010

Brood year (2006) escapements were average. Survival rates appear average to low. Preliminary 2009 returns are projecting to be higher than the pre-season forecast for the Cowichan River. For 2010 a below average return is expected; however, chum forecasts remain highly uncertain.

5.14. Area 19 Chum Decision Guidelines

5.14.1. Background

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

Fisheries are planned in-season based on escapement estimates. Management is also guided by advice from the MVI Chum Subcommittee. Area 19 falls under the same management regime as Area 18, and fishing opportunities are guided by coast-wide allocations of chum salmon. The overall escapement goal for the Goldstream River is 15,000.

If a surplus is identified, an economic opportunity fishery to Saanich Tribes will be conducted separately from food, social and ceremonial fisheries under the same priority and similar rules as the commercial fishery and fish harvested will be off-set with licences retired from the commercial fishery.

5.14.2. General Constraints

- Subarea boundaries to protect chinook and coho holding in Squally Reach.
- Gill nets may be restricted to daylight hours if coho encounters are high.
- Additional conservation measures are in effect, such as: non-retention of coho and chinook, barbless hooks for troll, mandatory brailing for seines. Maximum soak times for gill nets and on-board observers could be implemented if high by-catch occurred.

5.14.3. In-season Decisions – Net and Troll

Chum fisheries in Area 19 are managed on the basis of in-season escapement estimates. There is no counting fence on the Goldstream so escapement estimates are derived from stream walks. This is a relatively small system with good viewing conditions.

If commercial opportunities are identified, management will be guided by the following considerations:

- Seines and gill nets will alternate fishing days subject to escapement estimates and the entire MVI Chum Subcommittee review process and status in the coast wide gear type allocation.
- After the initial opening, continued fishing opportunities depend upon information derived from CPUE in the commercial fisheries, and on-going approach area and in-river assessments, as well as encounters of chinook and coho.
- If catches remain good and escapement is reached, commercial fisheries can continue.

5.14.4. Issues

- Further discussions on harvest planning arrangements are required for potential commercial and Saanich Tribes economic opportunity fisheries. The goal will be to attempt to finalize plans well in advance of the fishing season.

5.14.5. Prospects for 2010

Brood year (2006) escapements were average. Survival rates appear average to low. Preliminary 2009 returns are projected to be higher than the pre-season forecast for the Goldstream River. For 2010 a below average return is expected, however, chum forecasts remain highly uncertain.

5.15. Nitinat Chum

5.15.1. Background

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

- Commercial fisheries occur on a regular basis for seine and gill net; trolling is also permitted, but there has been little interest in previous years.
- The fishing period is generally October 1 to November 15.
- A gill net test fishery occurs in Nitinat Lake and provides weekly escapement estimates for the lake, beginning in the last week of September.
- Escapement estimates for the Nitinat River and Nitinat Lake tributaries are based on river swims and aerial surveys.

5.15.2. General Constraints

- Typically no commercial fishery takes place prior to the first week in October due to Fraser River steelhead by-catch concerns, unless consultations with the Provincial fisheries biologist allows for late September opening.
- Fisheries from October 01 to October 15 will operate inside a one mile boundary between Dare Point and Pachena Point, with a weed line of between 1.2 and 2.0 metres on nets in order to minimize steelhead mortalities.
- After October 15, fisheries are permitted within a two mile boundary of the shore line between Bonilla Point and Pachena Point.
- Non-retention of steelhead, coho and chinook during periods of low abundance.
- No commercial fishery inside Nitinat Lake.
- Boundaries at Cheewat and Klanawa Rivers in place to protect local chum and coho stocks.
- When both fleets fish together, gill nets only may be permitted between Bonilla Point and Logan Creek, subject to coho encounters.

5.15.3. Pre-season Planning

- Annual pre-season forecasts for the Nitinat system (predominantly enhanced) are based on escapement, hatchery fry output and estimated survival rates.
- The fishing plan will be developed by August, 2010.
- In the early portion of the fishery (Oct 01-15), the allocation target will be 75% gill net and 25% seine. The overall fishery allocation target is 30% gill net and 70% seine.
- If the forecast surplus is low, a gill net test fish program outside Nitinat Lake may be implemented to provide additional abundance information.
- If no surplus is forecast, the commercial fishery is contingent on in-season assessment.

5.15.4. In-season Decision Guidelines

- Gill net and limited fleet seine fisheries may occur in the first week of October if an adequate surplus is forecast, or if assessment information is required.
- A gill net and seine advisory group will be convened, as required, to assist the DFO fishery manager in developing weekly in-season fishing plans.

- In the early portion of the fishery (Oct 01-15), seine fisheries will be assigned a weekly catch target.
- If the forecast surplus is low, weekly escapement milestones must be achieved before openings are scheduled.
- A full fleet seine fishery may proceed when assessments in Nitinat Lake and in the adjacent marine area indicate there is a fishable surplus. During this phase of the fishery, both gill net and seines will fish at the same time in the same areas, except that gill nets may be provided an exclusive fishing area between Bonilla Point and Logan Creek.
- The commencement/continuation of fisheries after the first week of October is contingent on achieving established escapement milestones:

<u>Date</u>	<u>Escapement Milestone</u>
Oct.5-8	75,000
Oct. 9-11	125,000
Oct. 16-18	175,000
Oct. 23	225,000

5.15.5. Issues

- Area B area harvest committee intends to work towards share-based fishery arrangements in the Nitinat fishery.
- Fish in the lake are not available to the commercial fishery.
- Accuracy of pre-season forecasts have been very poor.
- An outside gill net test fishery in early October may be required in those years where a below average return is forecast.
- Uncertainty regarding the use of test fisheries to assist with in-season management of the fishery.

5.15.6. Prospects for 2010

Brood year escapements were average to below average. 2007, 2008 and 2009 returns were lower than expected. The forecast return of chum in 2010 is 83,000.

5.15.7. Other Fisheries

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

Table 18. 2010 Nitinat Chum Fishing Plan

DATE	GUIDELINES	ACTION
Week 9/3		No fisheries due to Fraser steelhead concerns. No gill

(Sep 13-19)		net test or commercial fishery anticipated.
Week 9/4 (Sep20-Sep 26)		No fisheries due to Fraser steelhead concerns. No gill net test or commercial fishery anticipated
Week 10/1 (Sep 27- Oct 3)	No fishery until October 01. Fishery opportunity based on preseason forecast. Escapement in lake by Oct. 5-8 = 75,000 *	Gill net and seine fishery anticipated. Fishery inside a line one mile south of Pachena Point to one mile south of Dare Point. Continue assessment with test fishing and escapement monitoring to lake.
Week 10/2 (Oct 4-10)	Escapement in lake by Oct 9-11 = 125,000.*	Fisheries in this week dependent on escapement to date. Early season allocation is 75:25 gill net:seine. Maximum gill net catch of 200,000 chum before seine fishery.
Week 10/3 (Oct11-17)	Escapement in lake by Oct 16-18 = 175,000.*	Seine and/or gill net opportunities depending on escapement to date, escapement rate and effort.
Week 10/4 (Oct18-24)	Escapement in lake by Oct 23 = 225,000.	Seine and/or gill net opportunities depending on escapement to date, escapement rate and effort.

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

5.16. Nootka Chum

5.16.1. Background

- Conuma Hatchery enhances four systems in Tlupana Inlet that have different run timings. There are approximately 30 unenhanced wild chum river systems in Nootka Sound.
- The general fishery management approach is to achieve an approximately 20% exploitation rate in the approach waters (outer Nootka Sound). This is believed to be achieved by fishing one day per week during daylight hours with a “moderate” fleet of approximately 50 gill net vessels. A review of the harvest approach has been initiated which will include discussion with First Nations and other interested parties.
- Seines have fished in years of high chum abundance.
- Outer Nootka boundaries are designed to target fish migrating through the approach area and to avoid harvest of fish holding off the stream mouths.
- A terminal harvest in Tlupana Inlet occurs if a surplus is identified through in-season abundance indicators.
- There is potential for an ESSR fishery which is dependent upon identifying a surplus to the enhanced systems in Tlupana Inlet through in-season abundance indicators. The likelihood of an ESSR fishery has been reduced in recent years due to the ability of the fishing industry to conduct controlled fisheries on identifiable surpluses.

5.16.2. General Constraints

- Daylight only fisheries to reduce by-catch. The goal is to optimize Nootka chum harvest and limit by-catch of chinook and dogfish
- Stream mouth boundary at Marvinas Bay to protect local stocks adjacent to fishing area.
- Hisnit Inlet closed during Tlupana Inlet fisheries to protect Deserted River chums.
- A mid- to late-September start date is normal.

- There are separate approach area and terminal fisheries to facilitate bio-sampling for age and hatchery contribution.
- Concern for wild chinook stocks in mid-September in outer Nootka Sound.

5.16.3. Pre-season Planning

- The first gill net fishing date typically occurs after September 20th.
- Following the harvest rate management strategy, a fishery would not occur if the forecast was extremely poor.

5.16.4. In-season Decisions

- If fleet size is modest (maximum 50 vessels), openings are one day per week in approach waters.
- If fleet size is less than 25 vessels, openings may be two days per week in approach waters.
- A terminal fishery on hatchery stocks in Tlupana Inlet is carried out if there is an identified surplus based on escapement or test-fishery information.
- Seine opportunities will be considered in-season, if chum abundance is adequate.
- Coho (and chinook) retention in net fisheries when abundance permits.
- In 2010 DFO stock assessment staff will design a pilot project for two-vessel surveys in Nootka Sound and Esperanza Inlet; information collected during fishing events will be utilized to assess run-sizes and fishery potential prior to escapement.

5.16.5. Issues

- Minimum forecast to trigger commercial fishery will be developed.
- Conuma Enhancement Facility frequently has difficulty in achieving egg targets on all four Tlupana Inlet enhanced systems (Sucwoa, Tlupana, Conuma and Canton).
- Conuma hatchery chum production targets may be reduced.
- Deserted River chum stocks are no longer enhanced. These late-run stocks will require additional protection during later Tlupana Inlet openings.
- Chinook by-catch in mid-September needs to be considered.
- With the introduction of the limited fleet fishery in Esperanza Inlet, the overall Area 25 chum harvest rate is under review.

5.16.6. Prospects for 2010

2009 returns were generally lower than expected. The forecast return for 2010 is 69,000. This may result in reduced fishery opportunities in 2010.

5.17. Nimpkish Chum

5.17.1. Background

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

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

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

5.17.2. General Constraints

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

5.17.3. Pre-season Planning

- Confirm in-season assessment programs for 2010.

5.17.4. In-season Decisions

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

5.17.5. Issues

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

5.17.6. Prospects for 2010

Although there were strong brood year returns in 2006, marine survivals for the 2006 and 2007 out migration years appear to be low based on subsequent returns of coho, pink, sockeye and chum salmon. Therefore, a low to near target return is expected on Nimpkish chum. Possible surplus may occur in 2010.

5.18. Limited Effort Terminal chum (WCVI)

- Starting in 2004 the Area D Gill net Association proposed limited, small fleet fishing opportunities for chum salmon in terminal areas.
- The intent of this program is to determine if small scale limited effort gill net fisheries could be economically viable while limiting exploitation rates to 10 to 20% of returning stocks and also providing stock assessment information.
- In 2009 chum abundance on WCVI was too low to operate these fisheries. In previous years these fisheries occurred in: Barkley Sound where 8 vessels fished a maximum of 2 days per week; Clayoquot Sound, where 4 vessels started 2 weeks later than Barkley Sound to avoid chinook by-catch; Esperanza Inlet, where 8 vessels fished concurrently with the Nootka Sound gill net openings to a maximum of 2 days per week; Quatsino Sound (Neroutsos Inlet), where 2 vessels fished 1 day per week for a total of 3 fishing days and Bute Inlet, where 5 vessels fished for a total of 3 fishing days.

- An assessment review has been conducted for limited effort chum fisheries in Areas 23 to 25. Fishery planning in 2010 will be guided by the preseason forecast and the limited effort chum fishery assessment review document.
- There are currently no plans for expanding these fisheries in 2010.
- Fishing plans are developed including observer coverage and data collection for each area.
- Decision guidelines have been developed for each of these fisheries, contact the local resource manager for details

5.19. Fraser River Pink

2010 is an off-year for Fraser Pinks. There will be minimal numbers of Fraser River pink salmon returning in 2010, no directed harvest is anticipated.

5.20. Mainland Inlet Pink

5.20.1. Background

Mainland Inlet pink are comprised of two main stocks, the Kakweiken River in Thompson Sound and the Glendale system in Knight Inlet. Other significant Mainland Inlet stocks include the Phillips River. These stocks are mainly harvested in terminal areas and provide opportunities for all three commercial gear types, although seines catch the majority of fish. Opportunities are also available for First Nations and recreational harvesters, however effort is generally low.

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

Normal recreational fishery opportunities are available. First Nations fishing opportunities on these stocks are normally available but interest is usually low.

5.20.2. General Constraints

- Directed Mainland Inlet pink fisheries are restricted to terminal areas.
- Daylight fishing only.
- Fishing boundaries are established to minimize encounters of chinook, coho, sockeye and chum and to ensure escapement targets are reached.
- Upper Knight Inlet boundary is implemented to conserve weaker stocks of pink.
- Kakweiken, Glendale and Phillips pink stocks are managed separately.
- In 2010 a cautious approach to managing these stocks will continue due to continued uncertainties on return rates.
- Directed limited fleet commercial fisheries may occur in 2010 and will be confirmed in-season based on in-season assessment.

5.20.3. Pre-season Planning

- Develop assessment plans for in-season monitoring.
- Develop plans for a continuation of Broughton Archipelago pink salmon action plan and studies.

5.20.4. In-season Decisions

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

The following considerations will guide fisheries management decisions:

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

5.20.5. Issues

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

5.20.6. In-season Decisions

These systems are dominant in even-cycle years. Recent cycle returns in 2002, 2004, 2006 and 2008 have all been well below average and are showing a continued declining trend on the even year cycle. No surplus is expected in 2010; however, in-season monitoring beginning in July will confirm run strength.

In addition to the Mainland Inlets, there may be a potential surplus of pink salmon to the Campbell/Quinsam Rivers in Area 13 based on the 2008 brood year escapement, 2009 fry out migration estimates and ocean survival rates observed in the 2009 adult return which produced a significant surplus.

In-season monitoring of the Campbell/Quinsam system will be done to assess run strength and any potential harvestable commercial surplus of pink salmon to this system. First Nations FSC harvest opportunities will be available. Commercial harvest opportunities in the terminal area will need to consider by-catch concerns for returning Campbell River chinook and also passing Fraser River sockeye which could limit potential commercial pink salmon harvest in the terminal area off the river mouth. In-river ESSR opportunities will also be considered if a surplus is identified. Campbell/Quinsam in-river recreational pink opportunities are currently planned for 4/day from Aug 15 to Sept 15 and will be reviewed in-season.

6. SOUTHERN B.C. / FRASER RIVER FIRST NATIONS FISHING PLAN (FSC FISHERIES ONLY)

6.1. Catch Monitoring and Reporting Initiatives

6.1.1. FN Electronic Reporting System

Since the year 2000, Fisheries and Oceans Canada has been working with First Nations groups to design and develop an electronic recording and reporting systems for First Nations Food, Social and Ceremonial catch data. The PC based software has incorporated recommendations from numerous First Nations members and is based on their reporting requirements within their communities and those required by the Department. The application also has a licensing system, allowing First Nations to track FSC catch and other fishing information for their members.

The ultimate goal of this initiative is to improve the efficiency and accuracy of reporting FSC catch and other fishing information to the Department.

Since its beginnings this program has expanded to other interested First Nations group within the Pacific Region, including the B.C. Interior area, South Coast and the Central Coast. Approximately 25 First Nations groups have employed this software application.

For more information please contact Ron Goruk at (250) 756-7392, Carmen McConnell at (250) 756-7272.

6.1.2. Improving Coded Wire Tag (CWT) sampling of FSC fisheries

Many First Nations FSC fisheries have not been sampled for CWTs, and most of those that were have been inconsistently or inadequately sampled for CWTs. Since many of these fisheries are terminal and intercept chinook and/or coho indicator stocks, this is a serious concern because it generates unknown bias for cohort analyses and implementation of PST management regimes for chinook and coho salmon.

In 2006, the Department began addressing this concern in the lower Fraser River FSC fisheries that retain chinook or coho salmon. Fishery monitors, who were already in place for catch data collection, were instructed to obtain heads from adipose fin-clipped chinook and coho if the fisher did not object. Since then, this approach has been extended to other FSC fisheries in the Fraser watershed and on the Cowichan River.

In 2009, sampling in the Lower Fraser River (below Sawmill Creek) FSC fishery continued as in 2008 but was not consistently performed across all monitoring sites and no heads were recovered. In the mid-Fraser River (above Sawmill Creek to Lytton), sampling was introduced but no heads were recovered. In the BC Interior, sampling was introduced in Little Shuswap Lake, Lower Shuswap River and the mouth of the Bonaparte River and heads were recovered at all locations. Similarly, on the Cowichan River, sampling was introduced and some heads were recovered. These programs will continue in 2010 with a focus on increasing participation and expanding to more areas.

6.2. Specific Conservation Measures

6.2.1. Lower Strait of Georgia Chinook

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

6.2.2. Interior Fraser River, Lower Fraser and Strait of Georgia coho

Historical coded wire tag (CWT) data and DNA sampling indicate that Thompson and upper Fraser River coho are present in the lower Fraser River from late-August until mid-October. Closures during the following periods will be implemented in portions of the Fraser River to protect Thompson and upper Fraser River coho:

Fraser River – below Mission	September 7 to October 8
Fraser River - Mission to Hope	September 9 to October 11
Fraser River – Hope to Sawmill Creek	September 11 to October 16
Fraser River – Sawmill Creek to Lytton	September 20 to December 31
Thompson River - Upstream to Bonaparte River confluence.	September 20 to December 31

During these times fishing will be restricted to very limited selective and experimental fisheries for all harvesters.

6.2.3. Early Stuart Sockeye

The 2010 forecast for Early Stuart sockeye is 41,000 at the 50% probability level (range: 17,000 to 101,000, Table 12). The 2010 cycle is the first of three weaker cycles following the dominant cycle for Early Stuart. The 2006 brood year escapement of effective female spawners (15,900 EFS) was similar to the cycle average (16,900 EFS). Fishery implementation will depend upon the in-season assessment of run size, the conservation and harvest plan (developed through pre-season consultations) and the available TAC for this stock group.

Based on the pre-season forecasts at the p25 and p50 probability levels, there is expected to be minimal or no sockeye available for harvest based on the proposed escapement plan. In order to conserve Early Stuart sockeye, management will likely need to focus on restricting all fisheries.

In past years, Early Stuart sockeye have been managed to avoid directed fisheries on 90% of the run using a closure window (Table 14). During the closure window, fishing for sockeye would not be permitted except for limited First Nation ceremonial licences for unplanned events.

6.2.4. Early Summer Sockeye

Harvest constraints are planned to provide further protection to weaker populations migrating in the earlier timed component of the Early Summer aggregate stock group. These measures will include an additional 1 week extension of the Early Stuart window closure (Table 14) and management of Canadian fisheries with the target of reducing exploitation rates to 25% or less on the weaker, earlier timed Early Summer stocks. Specific plans will be confirmed based on in-season information.

6.2.5. Cultus Lake and Late Run Sockeye

There are expected to be restrictions and closures for First Nations fisheries that target Fraser River sockeye stocks throughout southern BC in order to afford protection to Cultus Lake and Late Run stocks. Harvest limitations may also be required in the Fraser River upstream of the Vedder River confluence with the Fraser River to protect returns of Late Run sockeye that may be subject to significant levels of en-route mortality as forecasted by timing of river entry date.

6.2.6. Sakinaw Lake Sockeye

Harvest related measures to ensure protection of Sakinaw Lake sockeye are expected to continue in 2010. These measures include restrictions in First Nations FSC fisheries prior to the last week of July in Johnstone Strait and until early to mid-August in the northern Strait of Georgia. The waters near the mouth of Sakinaw Creek in Area 16 will be closed to fishing all season. Returns to Sakinaw Lake have been 100 or less since 2004, with no fish returning in 2007 or 2008 and only 1 in 2009. The 2008 smolt production which is expected to be the main component of the 2010 return was 12,000 smolts. The return of adult spawners in 2010 is expected to be very low.

6.2.7. Nimpkish Sockeye

The 2010 return is expected to continue to be well below historic levels. Harvest related measures continue to be required to minimize impacts on this stock. These measures include sockeye non-retention in First Nations FSC fisheries and recreational fisheries in Area 12 above Lewis Point until late July.

6.2.8. Fraser River Chinook

In the 2010 Salmon Outlook, Spring 4₂, Spring 5₂, Summer 5₂ chinook have been classified as *stocks of concern*. For Fraser Summer 4₁ chinook, the outlook is near target/abundant. For Fraser Fall 4₁ (Harrison) chinook the forecast indicates returns are expected to be at the lower end of the escapement goal range.

Additional management actions to protect and conserve Fraser Spring 4₂ chinook that build on and extend actions implemented in 2008 and 2009 are proposed. The migration timing of Spring 4₂'s is significantly longer than Early-timed Chinook and fishing restrictions are being considered for the entire migration period, in times and areas where these stocks are present. For the lower Fraser River, this period is proposed until July 15th.

Management of Spring 5₂ and Summer 5₂ chinook will depend on the in season abundance of chinook estimated from the Albion test fishery and will follow the management zones for Spring 5₂ and Summer 5₂ outlined in Section 4.1.9.

The Department is continuing to consult with First Nations on management measures for Food, Social and Ceremonial (FSC) fisheries in 2010.

6.2.9. Inshore Rockfish

The management objective for inshore rockfish is to introduce conservation strategies that will reverse declines and ensure stock rebuilding over time. A fishing mortality rate of less than 2.0 percent (all Pacific Region fisheries) will be required to achieve this objective.

Rockfish Conservation Areas, (RCA's, no fishing zones for gear that impact on rockfish), have been implemented within the Strait of Georgia and in all outside waters including the Queen Charlotte Islands. The conservation strategy for rockfish along the coast of British Columbia is long term. Rockfish are a long-lived species with a low level of productivity and therefore rebuilding will take several decades.

6.3. Communal Licence Harvest Targets

First Nations access to salmon for FSC purposes is managed through communal licences. These licences are designed for the effective management and regulation of First Nations fisheries through a negotiated series of mutually acceptable conditions wherever possible. These licenses describe the dates, times and locations where harvesting may occur, including type of gear, and other conditions. Communal licences can be amended in-season for resource conservation purposes.

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. Where agreement cannot be reached, Fisheries and Oceans Canada will issue an Aboriginal Communal fishing licence to the group authorizing them to fish for FSC purposes.

Draft anticipated harvest targets for communal licences in the Fraser River and south coast of BC are outlined in the table below. Consultation with First Nations in each of the areas is underway. Actual catches will be dependent on, among other factors, in-season assessments of actual stock strength and management measures taken to ensure conservation of individual stocks.

Table 19. Communal licence harvest targets

	South Coast	Lower Fraser	Middle/Upper Fraser	Total
Sockeye				
Fraser River	260,000	449,000	300,000	1,009,000
Non-Fraser River	20,000	0	0	20,000
Coho	43,500	0	1500*	44,500
Pink	60,000	125,000	500	185,500
Chum	155,000	72,000	500	227,500
Chinook	34,000	12,000	18,000	64,000
Total Salmon	572,000	658,000	320,500	1,550,500

*Note: Majority of harvest in mid/upper Fraser area is anticipated to occur from terminal systems experiencing strong escapements as identified using enumeration by counting fence methodology.

6.4. Aboriginal Commercial Fishing Opportunities

The AFS was implemented to address several objectives related to First Nations and their access to the resource. One of these objectives was to contribute to the economic self-sufficiency of Aboriginal communities. An integral component of the AFS is the Allocation Transfer Program (ATP). This Program facilitates the voluntary retirement of commercial licences and the

issuance of licences to eligible Aboriginal groups in a manner that does not add to the existing fishing effort on the resource, thereby providing Aboriginal groups with much needed employment and income. Since 1994-95, when the ATP was first launched, over 250 commercial licences have been issued to Aboriginal groups.

Negotiations to provide economic opportunities to First Nations in Barkley Sound and the lower Fraser River will be undertaken as in recent years. Economic opportunity fisheries will be conducted under agreements that specify provisions for planning fisheries, allocations, catch reporting requirements as well as roles and responsibilities regarding the management of the fishery. All economic opportunity fisheries will be managed as the same priority as the commercial fishery. In the lower Fraser, DFO will work with First Nations and commercial harvesters to develop an approach to an integrated commercial fishery based on the principles of transparency, accountability and collaboration. Specific elements of this approach will include defined harvest shares, enhanced catch monitoring and compliance programs, some initial work on a traceability program and improved collaboration amongst harvesters.

Discussions regarding demonstration fisheries that will provide economic opportunities for First Nations are on-going with First Nations and stakeholders. For 2010, as in previous years, the focus with First Nations will be on experimenting in terminal areas on abundant stocks. These fisheries will be conducted separately from food, social and ceremonial fisheries, under the same priority and similar rules as the commercial fishery and fish harvested will be off-set with licences retired from the commercial fishery.

6.5. Special Projects or Initiatives

6.5.1. Fraser Salmon Conservation and Harvest Planning Arrangements

In January 2008, Fisheries and Oceans staff initiated a series of meetings with First Nations throughout the South Coast and the Fraser River watershed to discuss possible management approaches in the case that there are insufficient salmon returns to meet FSC requirements. A similar process was initiated in 2009 and continues in 2010 in an effort to further discussions on management principles and approaches for Fraser salmon. Meetings will continue during the winter and spring of 2010.

6.5.2. FSC Coordinated Fishery

In recent years, a number of marine First Nations have worked cooperatively to harvest salmon, particularly Fraser sockeye, for FSC purposes. There was no coordinated fishery in 2009 due to low returns of Fraser River sockeye. Discussions will be occurring amongst marine First Nations regarding the potential for a coordinated Fraser sockeye FSC fishery in 2010.

6.6. Tsawwassen Fisheries

The Tsawwassen First Nations domestic fishery (Food, Social and Ceremonial) came into effect on April 3rd, 2009 as per the Tsawwassen First Nation Final Agreement. The Tsawwassen Fisheries Operation Guidelines (TFOG) sets out the operational principles, procedures and guidelines needed to assist Canada, BC and Tsawwassen in implementing Fisheries Chapter 9

and managing the Tsawwassen salmon fishery on an annual basis. The TFOG provides guidance on how management decisions with respect to the Tsawwassen fishery will be made via the Joint Fisheries Committee, how abundance is estimated, biological and harvesting considerations, catch monitoring and reporting requirements, etc. Each year the Joint Fisheries Committee will make recommendations to the Minister on the issuance of specific 'Harvest Documents' to license the salmon fishery for food, social and ceremonial harvests.

More information on the Treaty can be found at: <http://www.bctreaty.net/>

6.6.1. Tsawwassen Fisheries (Domestic)

As per the Tsawwassen Fisheries Operation Guidelines (TFOG), each year the Tsawwassen First Nation will develop a Tsawwassen Annual Fishing Plan (TAFP) for the harvest of salmon as per the Tsawwassen First Nation Final Agreement. The TAFP will include the Tsawwassen preference for stocks and species to be harvested, locations, timing, access to specific runs, method of harvest, catch monitoring and reporting, enforcement, etc. The TAFP is then presented to the Joint Fisheries Committee (JFC) for their review. The JFC is made up of representatives of Canada (DFO), Province of BC and the Tsawwassen First Nation. The Joint Fisheries Committee considers the TAFP in making its recommendations to the Minister of Fisheries and Oceans about the issuance of Harvest Document(s) which in effect license the fishing of FSC salmon during the season. Multiple harvest documents will be issued over the course of a season for each salmon species. Harvest Documents may include: species and quantity, use of fish, gear type, dates and times, area, designations, monitoring and reporting, etc.

The FSC allocation for salmon under the Tsawwassen First Nations Final Agreement is as follows:

Sockeye Salmon

In any year, the Tsawwassen Fishing Right Allocation for sockeye salmon will be:

- a) when the Canadian Total Allowable Catch for Fraser River sockeye salmon is 500,000 or less, 1.0% of the Canadian Total Allowable Catch for Fraser River sockeye salmon;
- b) when the Canadian Total Allowable Catch for Fraser River sockeye salmon is greater than 500,000 and less than 3.0 million, then 5,000 Fraser River sockeye salmon plus 0.40904% of that portion of the Canadian Total Allowable Catch for Fraser River sockeye that is greater than 500,000 and less than 3.0 million; and
- c) when the Canadian Total Allowable Catch for Fraser River sockeye salmon is equal to or greater than 3.0 million, then 15,226 Fraser River sockeye salmon.

Chum Salmon

In any year, the Tsawwassen Fishing Right Allocation for chum salmon will be 2.58% of the Terminal Surplus of Fraser River chum salmon to a maximum of 2,576 Fraser River chum salmon.

Pink Salmon

In any year, the Tsawwassen Fishing Right Allocation for pink salmon will be that number of fish caught incidentally in the harvest of Tsawwassen Allocation for sockeye salmon, up to a maximum of 2,500 Fraser River pink salmon.

Chinook Salmon

In any year, the Tsawwassen Fishing Right Allocation for chinook salmon will be determined by an abundance based formula, based on Canadian Total Allowable Catch that produces an average annual harvest of 625 Fraser River chinook salmon based on Fraser River chinook salmon returns for the 1982 to 2004 time period.

Coho Salmon

In any year, the Tsawwassen Allocation for coho salmon is an amount of Fraser River coho salmon that will result in an annual average harvest of 500 Fraser River coho salmon and will be harvested a) incidentally in fisheries that target other species; or b) using selective harvesting techniques to capture specific coho stocks.

6.6.2. Tsawwassen Fisheries (Commercial)

In addition to the allocation of salmon for FSC, TFN have an allocation for commercial catch outside of the Treaty as identified via the “Tsawwassen First Nation Harvest Agreement”. The allocation in the Harvest Agreement does not affirm aboriginal or Treaty rights. Fishing undertaken via the Harvest Agreement will be comparable to the requirements of the current Fraser River commercial fishery (Economic Opportunity First Nation fishery), or a general Commercial Fishery (Area E). For 2010, the HA will be comparable to the Economic opportunity First Nation fishery. Tsawwassen fishers will be expected to operate under the same rules that apply to other fishers taking part in that Fraser River commercial fishery. TFN may also prepare a Harvest Agreement Fishing Plan and give to the JFC for review prior to the season’s commencement. Each year that the Minister authorizes a Fraser River commercial fishery in the Tsawwassen fishing area, or a general commercial fishery, the Minister will issue a communal commercial fishing licence for the Tsawwassen First Nation. The Joint Fisheries Committee set up by the Tsawwassen Final Agreement will conduct a post season review.

Salmon allocation under the Harvest Agreement:

- **Sockeye:** 0.78% of the Commercial Allowable Catch for Fraser River Sockeye Salmon for that year.
- **Chum:** 3.27% of the Commercial Allowable Catch for Fraser River Chum Salmon for that year.
- **Pink:** 0.78% of the Commercial Allowable Catch for Fraser River Pink Salmon for that year.

7. SOUTHERN B.C. / FRASER RIVER RECREATIONAL FISHING PLAN

Recreational fishing opportunities for salmon are regulated by the *British Columbia Sport Fishing Regulations, 1996* made under the *Fisheries Act*. The regulations are generally summarized in the *2009 to 2011 British Columbia Tidal Waters Sport Fishing Guide* and the *2009 to 2011 British Columbia Freshwater Salmon Supplement*.

This information is subject to change in-season if additional conservation concerns arise or if additional recreational opportunities become available. Changes will be communicated through Fishery Notices, media reports, telephone information lines and/or postings on the Pacific Region Fisheries and Oceans Canada website at:

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

7.1. Catch Monitoring and Reporting Initiatives

7.1.1. Increasing Coded Wire Tag (CWT) submission rates

The CWT program relies on voluntary submissions of heads from adipose fin-clipped chinook and coho salmon to estimate the quantity and stock composition of salmon in various fisheries. Over the past several years, submission rates have decreased. Returns of heads from adipose clipped coho salmon have become so low that they no longer provide sufficiently precise CWT catch estimates for stock assessment purposes. In certain fisheries, recovery rates of heads from adipose clipped chinook salmon are also low.

Sport catch taken on guided trips, both lodge-based and non-lodge based, is one sector of the sport fishery that has seen increased head submission rates in recent years, due to cooperation of the guides in collecting and in some cases delivering heads. In 2010, the Department will strive to increase the proportion of guiding companies collecting heads to better represent their fishing activity. Where possible, head collections and logbook data will be combined to realize the full benefits of these programs.

To increase awareness of the CWT program and to increase the rate of salmon head submissions, the Department is increasing promotion of the CWT program through communications with the SFAB and Sport Fishing Institute. For further information on the CWT program, please see:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/tag-etiquette/SHRP-PRTS-eng.htm>

7.1.2. Recreational Electronic Logbooks

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

In 2010, the Department will be continuing with this co-management project with the Sport Fishing Institute, Sport Fishing Advisory Board and members from the Provincial Government by expanding the pilot for the fourth consecutive year. The software application consists of three components: a PC based component, a Dockside handheld component and an On Water handheld component. The design of the handheld components is based on the content of current

paper logbooks and advice from the recreational sector. The ultimate goal of this new initiative is to improve the efficiency and compliance of reporting catch and other recreational fishing information to the Department.

For more information please contact Ron Goruk at (250) 756-7392 or Carmen McConnell at (250) 756-7272.

7.2. Chinook

Conservation concerns persist for wild chinook originating from WCVI systems, Lower Strait of Georgia (in particular the Cowichan River chinook) stocks and the Fraser River Spring 4₂, Spring 5₂ and Summer 5₂ stocks.

7.2.1. Lower Strait of Georgia

Conservation concerns for Lower Strait of Georgia (LGS) chinook stocks will guide fisheries planning in 2010. The Cowichan River chinook stock is an indicator stock of the LGS chinook aggregate. Escapement trends have been declining in recent years. The 2009 escapement was the lowest on record and less 10% of the escapement target. Management actions instituted in 2009 will again be implemented in 2010 and will include a number of chinook non-retention areas and closed areas.

7.2.2. West Coast Vancouver Island

Since 1999, a recreational fishery “management corridor”, extending one nautical mile offshore from the surfline, has been in place along the West Coast of Vancouver Island in order to lower the exploitation rate on adult female chinook that are travelling along the shoreline back to their natal streams. The surfline is defined in the *Pacific Fishery Management Area Regulations, 2007*.

In 2010, the management actions in the chinook conservation corridor will include a daily limit of two chinook with a maximum size limit of 77 cm (excluding that portion of the corridor south of 48°55.872’N and 125°33.028’W) similar to 2009. This measure is to continue the protection of large mature female chinook larger than 77cm. These large fish are age 4 and older, which are the primary spawners for the WCVI wild stocks. Additional management measures in Area 24 inside the surf line are proposed to protect returning WCVI wild chinook stocks in this area.

Approximately 43,000 adult Somass chinook are forecast to return to Barkley Sound and Alberni Inlet in 2008, similar to the terminal return of about 43,000 (excluding 5,000 2 year olds) observed in 2008. This forecast is a low return of Somass chinook given the 24 year average of approximately 104,000 terminal return. The predicted adult age composition is 27%, 41% and 32% of 3, 4 and 5 years old, respectively. The 2010 forecast suggests a relatively even distribution of mature age classes. The Stamp River escapement target corresponding to the 57,200,000 egg target (50,000,000 river/7,200,000 hatchery) is 34,000 spawners. There is potentially about 9000 surplus fish available for harvest.

Similarly, the return to the Conuma River (Conuma River Hatchery) has also declined with a return to the terminal area of 17,000 chinook. This estimate is down 17% from the 2009 estimate.

7.2.3. Fraser River Chinook

In the 2010 Salmon Outlook, Spring 4₂, Spring 5₂, Summer 5₂ chinook have been classified as *stocks of concern*. For Fraser Summer 4₁ chinook, the outlook is near target/abundant. For Fraser Fall 4₁ (Harrison) chinook the forecast indicates returns are expected to be at the lower end of the escapement goal range.

Additional management actions to protect and conserve Fraser Spring 4₂ chinook that build on and extend actions implemented in 2008 and 2009 are proposed for 2010. The migration timing of Spring 4₂'s is significantly longer than Early-timed Chinook and additional restrictions or closures are proposed for portions of Areas 18, 19, 20, 29 and in the Fraser River.

Juan de Fuca recreational fishery:

- March 1 through June 2, the daily limit is two (2) chinook per day which may be wild or hatchery marked between 45 and 67 cm or hatchery marked greater than 67cm in Subareas 19-1 to 19-4 and 20-5.
- June 3 through June 18, the daily limit is two (2) chinook salmon per day which may be wild or hatchery marked between 45 cm and 67 cm or hatchery marked only chinook over 67 cm in length in Subareas 19-1 to 19-4 The minimum size limit in these areas is 45 cm in length.
- June 19 through July 15, the daily limit is two (2) chinook salmon per day of which only one (1) chinook may be greater than 67 cm in Subareas 19-1 to 19-4, a portion of area 20-4, and 20-5.. The minimum size limit in these areas is 45 cm in length.

Strait of Georgia recreational fishery:

- May 1 through July 15, 2010, off the mouth of the Fraser in Sub areas 29-6, 29-7, 29-9 and 29-10, non-retention of chinook salmon.
- June 3 through July 15, 2010, the daily limit is two (2) chinook salmon per day of which only one (1) chinook may be greater than 67cm in Subareas 18-1 to 18-6, 18-9, 18-11, 19-5, and portions of Subareas 29-4 and 29-5. The minimize size limit in these areas is 62cm.

Fraser River recreational fishery (tidal and non-tidal Fraser):

- i) Tidal and non-tidal Fraser in Region 2: No fishing for salmon prior to May 1, 2010. From May 1 through July 15, no fishing for salmon. This measure may be reviewed in season if there is new information.
- ii) non-tidal Fraser in Region 3: Thompson River at mouth of the Nicola River; no fishing for salmon when Fraser Spring 4₂ chinook are present. Thompson River from Kamloops Lake downstream to the confluence of the Fraser River and waters of the Fraser River downstream of the confluence of the Thompson River to the Alexandra Bridge no fishing for salmon to July 15th. These measures may be reviewed in season if there is new information.

Management of Spring 5₂ and Summer 5₂ chinook will depend on the in season abundance of chinook estimated from the Albion test fishery and will follow the management zones for Spring 5₂ and Summer 5₂ outlined in Section 4.1.9. For fisheries in the Fraser River, management actions if warranted will be in place after July 15th until the end of July in the lower Fraser River when greater than 70% of this run is expected to have passed Albion.

- For fisheries in Subareas 29-6, -7, -9 and -10 the management actions may range from those in place on July 15th to protect Spring 4₂ Chinook, a reduction in the daily limit or a size limit restriction e.g. between 62 and 77cm.
- For fisheries in the Fraser River, both tidal and non-tidal, the management actions may range from those in place on July 15th to protect Spring 4₂ Chinook, a reduction in the daily limit or a size limit restriction e.g. between 30 – 77 cm.

7.3. Interior Fraser River Coho

Conservation measures to protect coho will be similar to those implemented in 2009. There will be no retention of wild coho, with the exception of some terminal areas which have an identified surplus.

Selective hatchery marked coho fishing opportunities will be similar to those provided in 2009. That is, you may retain two hatchery marked coho per day from June 1 to December 31 in tidal waters unless otherwise specified in the final plan or by fishery notice. Increased opportunities for the recreational fishery on hatchery marked coho will be determined in-season. A hatchery marked coho is defined as one that has a healed scar in place of an adipose fin.

Interior Fraser River coho are present in the lower Fraser River from late August until mid-October. Conservation measures are necessary during the time period when much of the run passes through an area. These dates are adjusted slightly each year to commence on the Tuesday following Labour Day. Conservation measures will be in place in the portion of the river listed during the times listed below:

Fraser River - Below Mission	September 7 to October 8
Fraser River - Mission to Hope	September 9 to October 11
Fraser River - Hope to Sawmill Creek	September 11 to October 16
Fraser River - Sawmill Creek to Lytton	September 20 to December 31
Fraser River - Lytton to Williams Lake	September 27 to December 31
Fraser River - Upstream of Williams Lake	October 2 to December 31
Thompson River –	
Upstream to the outlet of Kamloops Lake	September 22 to December 31
Upstream of Kamloops Lake	September 27 to December 31

Decisions with respect to management actions deemed necessary to address conservation concerns will be made in consideration of the objectives listed in Section 4 of this plan.

7.4. Sockeye

Measures are required in order to meet conservation objectives for stocks of concern such as the Fraser River Late Run timing group, Cultus Lake, Sakinaw Lake and Nimpkish River sockeye stocks.

For southern BC tidal waters, it is anticipated that sockeye non-retention will be in effect during those times and in those areas when stocks of concern are present. For example, in inside waters (Johnstone Strait, Strait of Georgia, Strait of Juan de Fuca) sockeye retention is unlikely to be permitted until late July or early August when more abundant stocks are migrating through the area. In non-tidal waters, sockeye non-retention is in effect year-round except where harvestable surpluses are identified and potential impacts on stocks of concern are within management constraints. For 2010, sockeye fishing opportunities are anticipated to begin in late July in tidal waters or early August in non-tidal waters.

The sockeye return to the Somass River is expected to be above levels required to support fishing opportunities for all sectors in Area 23.

7.5. Pink

In most south coast tidal waters, the daily limit will be four pink salmon. See Appendix 6. Fraser River pink exhibit odd year cyclic dominance.

7.6. Chum

In most south coast tidal waters the daily limit will be four chum. See Appendix 6.

8. SOUTHERN B.C. / FRASER RIVER COMMERCIAL FISHING PLAN

8.1. Catch Monitoring and Reporting Initiatives

The development of an improved catch monitoring regime will continue to be a priority in the management of commercial fisheries. The Department will work with the Commercial Salmon Advisory Board and Area Harvest Committees to implement tools and develop annual catch monitoring plans for commercial fisheries. The standards focus on data collected to estimate catches, releases, and essential biological data, such as CWT sampling, for stock assessments and fishery evaluations.

The Department is proposing to implement start and end fishing reporting requirements for all Southern Commercial Licence Area fleets in 2010. Consultations will occur with commercial fleets that currently do not have this requirement in effect.

Traceability of commercially harvested fish is increasingly a focus of concern as a result of the need to provide market confidence in resource sustainability and product safety. The Department will work with all fleets to implement components of traceability. These could include mandatory hail-in/hail-out provisions (currently in place in troll fisheries) and a pilot mandatory dockside monitoring program.

8.2. Coded Wire Tag (CWT) Sampling of Freezer Troll Catch

The importance of adequately CWT sampling this catch has increased as the portion of landings frozen at sea has increased. There are three ongoing concerns with CWT sampling of freezer troll catch which will continue to be addressed in 2010.

The first concern results from the removal of heads from the catch at sea when trollers freeze their catch. For commercial landings chosen for CWT sampling, sampling activity must examine 100% of the landed fish, and collect all heads that are suspected to contain a CWT. Therefore, trollers removing heads at sea are required by Condition of Licence to keep all heads from retained chinook and coho and deliver them to processing plants when landing their catch. However, heads are not always delivered, and when they are delivered, many deliveries have to be excluded from the CWT sample because they contain fewer heads than the body count in the landing.

The second concern also results from the removal of heads before sampling. Recognizing that freezer trollers may have space limitations for retaining heads, the Department allows the alternative of retaining only the portion of the head likely to contain the CWT, referred to as the 'snout'. Unfortunately, many deliveries of snouts have to be excluded from the CWT sample because the snouts have been cut too small, making it likely that CWTs actually present in the fish are not included in the sample.

To help address these concerns, the Department:

- i) has standardized the requirements regarding head retention and delivery from all retained coho and chinook in the Conditions of Licence for all troll Licence Areas;
- ii) has specified, as a Condition of Licence, the minimum portion of each head that must be retained;
- iii) will provide instructions regarding these conditions, via troll Fishery Notices, this document (Appendix 8), and other routes.

The third concern results because freezer trollers often land two or more weeks worth of catch during one landing. The Mark Recovery Program (MRP) is required to estimate the catch of CWTs by week. Ice trollers land often enough that CWTs detected in their catch can be attributed to the week they were caught in. However, when freezer trollers land after a trip lasting two or more weeks, and deliver heads for the entire fishing trip duration, it is unknown which week each discovered CWT was caught in; thus, such samples can not contribute to the estimates of CWT catch by week (but are still useful for improving estimates of CWT catch in each fishery).

To address this concern, the Department has implemented a program in which special purpose bags and labels are provided to freezer trollers for use in storing and labelling head samples separately according to the week they were caught. For 2010, freezer trollers will be able to pick up packages of bags and labels at Pacific Fishery Licensing Unit offices in Vancouver, Nanaimo, and Prince Rupert. Vessel masters unable to pick up bags from licensing offices should contact the Department toll-free at 1-866-483-9994 to arrange delivery.

8.3. 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 4.1 – Management Objectives for Stocks of Concern). Fisheries that occur on the South Coast may be required to release all non-target species to the water with the least harm, depending on local stock concerns.

In 2010, DFO will continue to encourage the development of demonstration fisheries that promote biologically sustainable and economically viable fisheries. Fishery managers are working with fleet advisors to develop demonstration fisheries that experiment with meeting a range of objectives including matching fleet size to the available stock, pacing fisheries to maximize value of the harvest and developing more cooperative fishing arrangements between harvesters. Reports on previous demonstration fisheries can be found on-line at: www.pac.dfo-mpo.gc.ca/species/salmon/policies/default_e.htm. See Appendix 10 for further details for 2010 projects.

Catch monitoring improvements continue to be a priority in the management of all salmon fisheries. DFO in consultation with harvest sectors and First Nations will focus efforts on improvements to current catch monitoring and reporting requirements and standards.

8.4. Test Fishing

DFO uses a range of methodologies to determine in-season stock abundance and composition. Historically, test fisheries have played an essential role in collecting the data necessary to set user TACs and to ensure that conservation objectives are met. Recent federal court decisions have required changes to the way DFO has traditionally delivered test fishing programs. As in the 2009 salmon fishing season, DFO will work in close collaboration with resource users to ensure that the fisheries data collections necessary to set TAC's and to ensure conservation will continue to be undertaken.

8.5. Licence Application and Issuance

The 2010/2011 Salmon licensing period will encompass April 1, 2010 to March 31, 2011. Applications must be completed and submitted to a Pacific Fishery Licence Unit by March 31, 2011 along with the required fee to maintain the licence eligibility whether fishing will take place or not.

Prior to annual licence issue, vessel owners must ensure that:

- a) Any Ministerial conditions placed on the licence eligibility have been met
- b) Any conditions of the previous year's licence have been met, such as:
 - i. Submission of all harvest logs or a nil report for 2009 (for further information contact the Salmon Catch Monitoring Unit at (250) 756-7279 or 250-729-8385); and

- ii. Submission of all fish slips for 2009 (for further information contact the Regional Data Unit at (604) 666-2716).

For further licensing information see:

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

8.5.1. Fisher Identification Number

Unique Fisher Identification Numbers (FIN) are assigned to all Pacific commercial harvesters. Once the FIN is issued to a fisher, it does not change from year to year. More information on FIN may be obtained from your DFO fisheries manager or the Pacific Fishery Licensing Unit (PFLU).

8.6. Mandatory Log-Book and In-season Catch Reporting Program

The current mandatory log-book and in-season reporting program for catch information will remain in place for all commercial fisheries. In-season decisions could be directly affected by the level of compliance to the in-season reporting provisions.

The Conditions of Licence, for the 2010 season, require that commercial fish harvesters make service arrangements with an approved service provider in order to fulfil reporting requirements. An approved service provider is a third party company, organisation or individual who meets departmental requirements for technical capability, impartiality and security, and who will provide services including, but not limited to, the following:

- Provide fish harvesters with harvest logs for recording of catch information;
- Establish and maintain a computer network with secure access to the departmental salmon fishery database and computer software that will enable data entry into that database;
- Establish and maintain a mechanism (such as a call centre) that will receive in-season reports, enter the reported information electronically into the departmental salmon fishery database, and provide fish harvesters with a confirmation number for their report;
- Submit the post-season catch reports required by conditions of licence electronically to the departmental salmon fishery database, and issue letters confirming receipt of these reports;
- Contact reporting fish harvesters to resolve data quality issues that are identified to the service provider by the Department;
- Provide a support person for fish harvesters to contact following the fishing season for resolving catch reporting licence condition clearance issues; and
- Provide the Department with a weekly update on the status (e.g. active, returned, and lost) of the harvest logs that they have issued.

The above information is a synopsis of the service provider requirements. For the complete service provision requirements, contact the Department. Information on contacting currently approved service providers will be included with licence packages mailed to licence holders.

8.6.1. Commercial Electronic Logbooks (E-Logs)

For the 2010 fishing season, Fisheries and Oceans Canada will be continuing a co-management arrangement with commercial salmon fishermen that will be available to fishers for the sixth consecutive salmon season. The software will be promoted from a pilot phase to production phase where the Electronic Logbook system (now termed DFO E-Log) will be available to all commercial salmon fishers that meet the hardware requirements. The PC based software application has been designed following the current paper versions of the commercial salmon logbooks for gill net, seine and troll. The ultimate goal of this initiative is to improve efficiency and compliance of reporting catch to the Department.

Currently, there may be as many as 100 commercial salmon fishing vessels from all the licence groups employing the DFO E-Log along the Pacific Coast. Catch data and other fishing information will be transmitted to the Department in the manner outlined in their conditions of licence, with respect to electronic logbooks. Participants in this pilot will not be required to purchase the salmon logbook service or be required to phone in their catch and fishery information to the service provider. Authority for continuing to use or starting to use the DFO E-Log will be determined by DFO and will be based on the previous season or season(s) compliance for reporting catch and other fishing information to DFO.

For more information please contact Ron Goruk at (250) 756-7392 or Carmen McConnell at (250) 756-7272.

8.7. Non-retention Species

There will be non-retention of chinook and coho in most southern BC commercial fisheries with the exception of some Area E (Fraser River) and Area G (WCVI) fisheries where retention of chinook may be permitted, in addition to some terminal opportunities in areas such as the WCVI where surpluses of coho and chinook may be identified. Non-retention of steelhead will be in effect in all commercial fisheries.

There are also local and at times seasonal restrictions on various other salmon species. Please refer to the Fishery Notice that is released prior to every commercial fishery to determine any locally restricted species, or any in-season updates to the above.

8.8. Revival Tanks

Revival tanks conforming to the conditions of licence will be required for all vessels participating in commercial salmon fisheries. All prohibited species captured incidentally must be either revived in the revival tank and released, or released directly to the water in a manner that causes the least harm. If in-season indicators show a deterioration of expected stock levels, additional measures may be implemented.

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.

8.9. Gill Net Construction

Gill nets of two different constructions may be used in all South Coast areas except for Areas 20 and 22, where net construction must be of the 30 filament type (multi-strand). Net construction in all other areas may either be of the 30 filament type (multi-strand) or Alaska Twist (six strands).

The use of Alaska Twist gill nets with four or five filaments of equal diameter in each twine of the web will be permitted in certain gill net fisheries, (excluding Areas 20 and 22) in 2010, providing that an approved study has been undertaken. Fish harvesters that wish to use this gear should contact their local fishery manager.

Specific restrictions, such as the specifications for net construction and revival tanks, are found in the conditions attached to individual licenses. Fish harvesters are urged to read these conditions carefully to ensure that their vessel and fishing techniques are in accordance with their licence.

8.10. Retention of Lingcod by Salmon Troll

To help meet the conservation and sustainability objectives under groundfish integration, an individual quota (IQ) system has been established for the lingcod fishery. Initial allocation of quota was based on catch history from 1996 to 2003 as this time period coincided with the Dockside Monitoring Program. For those who have fished lingcod in conjunction with salmon during the qualifying years, fish slips were used to determine catch.

Implementation of a commercial groundfish integrated fishery has management implications for those wishing to retain lingcod while salmon trolling. Similar to last year, all vessels wishing to retain any amount of lingcod must have their fish validated through the established dockside monitoring program. In addition to this, any vessel wishing to land lingcod must acquire sufficient quota to do so.

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

- Vessel must have sufficient IVQ.
- Transportation requirement – All lingcod must be transported by the licensed vessel either directly to land or to a fish pen.
- Hail in and Hail out requirements through the designated service provider - Archipelago Marine Research Ltd (AMR).
- Specific locations and times at which landing of fish is permitted.
- Landing requirements – The landing of any fish of any species is not permitted unless a designated observer is present to authorize the commencement of weight verification.

Vessels wishing to retain and land **more than 500 lbs** per trip of lingcod must, in addition to all of the above, meet the new electronic monitoring requirements. For more information on these requirements please refer to the 2010/2011 Groundfish Integrated Fisheries Management Plan.

The salmon troll fishery is currently permitted to retain 20 rockfish per day (excluding Yelloweye, Quillback, China, Tiger and Copper, as by-catch to salmon fishing (i.e. during salmon troll open times and when salmon are retained on board the vessel). This allowance will continue in 2010. There are no additional monitoring requirements.

8.11. Selective Fishing / Conservation Measures

In 2010, the Department will work with Area Harvest Committee representatives to continue to implement selective fishing measures to avoid non-target fish or, if encountered, to release them alive and unharmed. These measures include but are not limited to: the use of troll plugs, Alaska twist gill nets, maximum gill net set time and net length, gill net mesh size, gill net depth, brailing for seine vessels, and revival tanks.

8.11.1. Other Conservation Measures

In 2010, Fisheries and Oceans Canada will once again be seeking the co-operation of harvesters in minimizing fishing activities in Robson Bight. This is part of a long-term management plan to afford protection to the killer whale populations that frequent this area during periods from mid-May to early October. Fish harvesters are requested not to moor in the Robson Bight area until 24 hours prior to any fishery being announced for that respective gear type. Information on this management initiative can be obtained from Department charter vessels on the grounds and from Fisheries and Oceans Canada offices.

8.12. Catch Monitoring Standards

The consultation document released in February, 2008 called *“Interim Fishery Monitoring and Catch Reporting Standards for Commercial Salmon Fisheries”* is being used as the basis for discussion not only with the commercial salmon fleet regarding fishery monitoring and catch reporting standards but with other sectors as well. Applying consistent standards will improve the integration of fisheries, will increase transparency, will improve the reliability of data and will facilitate management and accountability. The document sets out interim standards for reporting parameters (such as catch, release and effort), reporting frequency as well as accuracy/precision targets for all salmon fisheries.

These interim standards will be used to discuss with commercial, aboriginal and recreational harvesters which specific fisheries may require enhanced monitoring, identify specific monitoring objectives and provide an affordable approach to collect the required information. This approach will provide for the collaborative evaluation of the interim standards, examining potential financial implications to harvesters and the overall effectiveness. Consultation will include obtaining feedback regarding full application of these revised standards in the 2010 fishery.

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. To address all elements of the Wild Salmon Policy, an effective catch reporting system will be required to assess the status of Conservation Units.

Furthermore, a ‘share-based’ management framework as envisioned in Pacific Fisheries Reform requires accurate, timely and verifiable catch reporting. However, several issues have been identified with the current monitoring of Pacific commercial salmon fisheries and the reporting of catch and associated harvest mortalities, including inconsistent requirements, inaccessible data, poor data precision and incomplete or missing data. The interim FMCR standards document initiated discussion on:

- elements of fishery monitoring and catch reporting standards, (i.e. what information is required and why);

- identifying required improvements and their associated rationale for each specific harvest opportunity;
- priorities for improvements in catch monitoring; and
- how to provide a basis for planning and implementing the most effective approach to achieve required monitoring programs within two years.

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. A fully developed, well documented and statistically verifiable fishery monitoring system is one important component of "eco-certification". Yet another facet of this is the issue of bio-security and the need to insure traceability of fish from the water to the buyer. Traceability can increase the value of products, assure continued access to world markets and assist with longer term economic stability of the commercial fishing industry. An essential first step in traceability is the full documentation of the commercial harvest together with its source fishery and fishing fleet. Finally, DFO is committed to implementing defined shares in the management of salmon fisheries; confidence among all harvesters in catch data is essential to achieving the trust required to support defined harvest shares.

Progress in the last year has included the ranking of all Pacific fisheries with respect to current level of monitoring and desired levels for the near future. A strategy is being developed to chart the course for fisheries monitoring and catch reporting in the Pacific. This strategy will be a collaborative effort with the Monitoring and Compliance Panel – an independent collection of representatives from the aboriginal, recreational, commercial and conservation sectors.

8.13. Demonstration Fisheries (Pacific Fisheries Reform)

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. Projects that fall under this category may include investigating quota management in salmon fisheries, fishing in an unconventional area/time, or testing the abundance of stocks prior to full fleet fisheries. Special projects or initiatives may have significant components that relate to selective fishing.

Special projects or initiatives should be planned well in advance of proposed implementation so that effective planning and approval can take place. If a group is interested in pursuing a special project or initiative they should contact the appropriate departmental resource manager and advisors for that fishery. After discussion, the resource manager will likely require a detailed proposal to submit for approval.

It should be noted that all special projects will have to be evaluated for conflicts with recent court cases regarding the Minister's authority regarding use of fish.

For more information, please refer to Appendix 10.

8.14. South Coast Net – Fraser Sockeye and Pink

Actual opportunities for targeted Fraser River sockeye fisheries will be determined based upon in-season assessment and abundance of Fraser River sockeye stocks. Fishing opportunities will also be subject to achieving fisheries management objectives for Late Run and Cultus Lake sockeye, Nimpkish sockeye, Sakinaw sockeye and Interior Fraser coho in areas where these stocks are present. The late run stock group is expected to be the dominant component of this years return.

Fishing opportunities will be planned and managed consistent with Fraser River sockeye management objectives.

2010 is an off cycle for Fraser River pink salmon, thus no directed fisheries on Fraser River pink salmon are planned.

8.14.1. Juan de Fuca Strait and Fraser River - Area 20 and 29

In Area 20, controlled fishing opportunities targeting Fraser River sockeye will be considered for licence Area B however, this will be subject to available TAC, in-season diversion rate estimates of Fraser River sockeye and estimated impacts on Interior Fraser coho.

Area B is considering a selective fishing study in Area 20 in 2010 to evaluate coho release mortality rates that should be applied to this fishery in the future. Currently a 70% coho release mortality rate is applied based on a study in 2002. The study may also be designed to address some or all of the following including: release mortality rates for sockeye, coho stock composition (e.g. DNA sampling) and seine bunt mesh comparisons.

In the lower Fraser River, Area B has proposed a limited effort and harvest experimental demonstration seine fishery to explore Fraser sockeye harvest opportunities in 2010 that may apply to future potential opportunities. This proposal is being considered for implementation in 2010 subject to addressing any potential gear group conflicts, in-season information and available Area B TAC. Refer to Appendix 10 for further details.

The majority of the Area B Fraser River sockeye harvest is expected to be from the Johnstone Strait harvest area. However, subject to in-season information, Area B seine opportunities are also expected in Juan de Fuca (Area 20), in Area 18, in Area 29 off the Fraser River mouth, and a limited demonstration fishery in the lower Fraser River. Opportunities and fishing locations will be confirmed based on in-season information.

Fraser River sockeye harvest opportunities are anticipated for Area E in Area 29.

The Fraser River Panel in conjunction with Fisheries and Ocean Canada will develop and implement Fraser River sockeye fishing plans for these areas, as they fall within Fraser River Panel management responsibilities.

Early to Late July - Area 20 and 29

- No fisheries anticipated prior to late-July in order to protect Fraser River Early Stuart sockeye stocks.

Late July to Mid August - Area 20

- Limited, controlled effort seine fisheries are anticipated to be available, fleet size limitations, strict selective fishing techniques and monitoring will be required.
- Avoidance of coho, Cultus and late run sockeye constraints, TAC and diversion rate will be factors determining available harvest opportunities during this period.

Late July to Mid August - Area 29

- Area E opportunities are anticipated subject to available TAC, and Cultus and late run sockeye constraints.
- In the lower Fraser River, Area B is planning for a limited effort and harvest experimental demonstration fishery to explore Fraser sockeye harvest opportunities. This opportunity will be subject to available TAC, Cultus and late run sockeye harvest constraints and must consider other harvest plans and requirements in this area.

Late August to early September – Area 20

- No fisheries planned as is an off cycle for Fraser River pinks and also due to constraints on Interior Fraser coho.

Early September to Mid October - Area 20 and 29

- Area 20 to remain closed to protect Interior Fraser coho and Cultus Lake sockeye.
- Area 29 fishing opportunities will not be available due to Interior Fraser coho, Cultus Lake sockeye and Interior Fraser River steelhead management constraints.

Late October to Early November - Area 29

- Gill net fishing opportunities for chum salmon will be confirmed in-season, based upon in-season assessment of the abundance of the chum salmon return and management objectives for Interior Fraser steelhead.

Early November to Late November - Area 29

- Potential gill net fishing opportunities will be determined in-season, based upon in-season assessment of the chum salmon return.

Refer to Appendix 10 for details on proposed demonstration fisheries.

8.14.2. Johnstone Strait (Areas 11 to 13)

Early to Late July - Areas 11 to 13

- No fisheries are anticipated prior to late July in order to protect Sakinaw Lake sockeye and Fraser River Early Stuart sockeye. No fishing opportunities are available above Lewis Point prior to late July to protect returning Nimpkish River sockeye.

Late July to Mid August - Areas 11 to 13

- Gill net and seine opportunities targeting Fraser River sockeye are anticipated. Opportunities will be subject to available TAC and constraints for Cultus Lake and late run sockeye and Interior Fraser coho.

Late August to Mid September - Areas 11 to 13

- No directed Fraser River sockeye fishing opportunities are anticipated due to management constraints for Cultus Lake and Late run sockeye

Late July to early September - Areas 12 and 13 (Mainland Inlets)

- Mainland Inlet pink – This is the dominant cycle year for most mainland inlet pink stocks. Returns are expected to be low to near target abundance and no directed fishing opportunities are anticipated, however in-season assessment will determine if any potential fishing opportunities are available. There will be no fishing opportunities unless surpluses are identified in-season.
- Terminal Summer Run Chum – Area D gill net is exploring limited effort opportunities in terminal areas where returns may be abundant such as Ahnuhati chum in Knight Inlet. Discussions are continuing regarding potential opportunities. Fishing opportunities targeting Orford River chum in Bute Inlet are not anticipated based on recent year trends of poor returns. Any fishing opportunities will be confirmed in-season.

Early October to Late October - Areas 12 and 13 (Johnstone Strait mixed stock chum fishery)

- The 2010 chum outlook indicates near target returns based on generally above average escapements in the 2006 brood year. The fixed harvest rate strategy which was implemented starting in 2002 is planned to continue in 2010. For seines, two fisheries are anticipated and will be scheduled for before and after the peak of the run. Area B is also exploring options for a demonstration ITQ fishery. Gill net fisheries will be scheduled during the October time period.
- Specific fishing plans will be determined pre-season following consultation with industry. A chum working group meeting will be scheduled during the May – June time period to begin this planning process.

Late November to early December

- No fishing opportunities directed at Nimpkish River chum are anticipated due to an expected poor return and recent trends of poor returns. In-season assessment will confirm the potential for any harvest opportunities.

Refer to Appendix 10 for details on proposed demonstration fisheries.

8.14.3. Strait of Georgia - Areas 14 to 19

- No fisheries are planned to occur in Area 16 (Sabine Channel). Consideration may be given in-season for Fraser River sockeye fisheries in Sabine Channel if warranted and will be subject to Sakinaw Lake sockeye constraints as well as constraints for other stocks of concern.
- The 2010 chum outlook indicates near average returns to most terminal areas based on average escapements to most systems in the brood year. Chum fishing opportunities in

terminal areas will be determined in-season and discussed through pre-season meetings and the chum advisory process. The following opportunities may be available:

Early October to Late-November - Area 14

- Possible Area D gill net openings starting in early October. Further gill net openings are subject to overall abundance in Area 14 and escapements in the Puntledge, Little Qualicum and Big Qualicum Rivers. Limited effort Area B seine opportunities may be available in late October dependent on escapement levels, abundance and allocation status. Full fleet opportunities may also be available.

Late-October to Mid-November - Area 16

- Gill net and seine opportunities are not anticipated due to the recent trend of poor returns; however, this will be confirmed in-season. Subject to escapement levels in Jervis Inlet in the Tzoonie, Deserter and Skwakwa Rivers. Area B seine opportunities will depend on abundance and allocation status.

October to Early November - Area 17

- Possible Area E gill net opening. Openings are subject to in-season abundance estimates of Nanaimo River chum. Area B seine opportunities will depend on abundance and licence area allocation status.

Late-October to Early December - Areas 18 and 19

- Possible Area E and B fisheries in Satellite Channel and Saanich Inlet. Openings are subject to in-season abundance estimates for the Cowichan and Goldstream Rivers. Fishing opportunities will be dependent on abundance and also licence area allocation status.

Refer to Appendix 10 for details on proposed demonstration fisheries.

8.14.4. West Coast Vancouver Island - Areas 21 to 27

Preliminary forecast information for WCVI chinook, sockeye and chum salmon are completed.

Sockeye

Mid June to Late July/Early August - Area 23

- Preliminary forecast for Barkley Sound sockeye is above levels required to support fishing opportunities for all sectors in Area 23.
- Opportunities will be determined based on in-season assessment.

Chinook

Mid August – Early September Area 23

- Gill net and seine opportunities in Alberni Inlet dependent on the pre-season forecast and allocation guidelines.

Mid August - Area 25

- Gill net opportunities in Tlupana Inlet dependent on the pre-season forecast and allocation guidelines.

Chum

Mid September to Late October - Area 23

- Limited small fleet gill net opportunities in Barkley Sound dependent on the pre-season forecast and allocation guidelines.

Mid September to Late October - Area 24

- Limited small fleet gill net opportunities in Clayoquot Sound dependent on the pre-season forecast and allocation guidelines.

Mid September to Late October - Area 25

- Possible gill net chum fisheries in outer Nootka Sound (Subarea 25-7 and portion of 25-6). Maximum 50 boat days per week operating a maximum 2 days per week (fleet size of 25 or less).
- Limited small fleet gill net fishery in Esperanza Inlet (Subarea 25-13 and portions of 25-14) dependent on the pre-season forecast and allocation guidelines.
- Possible seine opportunity dependent on abundance levels and allocation considerations.
- Terminal fisheries in Tlupana Inlet based on identified surplus chums to enhanced systems.

October - Area 21 and 121

- Dependent on pre-season forecast Area E gill net fishery anticipated for two days per week starting and limited fleet seine fisheries October 01-08 (daylight only) inside one mile boundary and north of Dare Point.
- Further fisheries depend on reaching escapement milestones into Nitinat Lake and indications of abundance through commercial fishing, test fishing and stream enumeration.

8.15. Area G Troll

8.15.1. Sockeye

Opportunities to harvest Fraser River sockeye in 2010 are not planned based on commercial licence area allocations for Fraser River sockeye (Appendix 4).

Barkley Sound sockeye returns are forecasted to be similar to last years return, Area G fishing opportunities targeting these stocks in Area 23 will be dependent upon gear allocation balances.

8.15.2. Fraser River Pink

There is no fishable surplus of Fraser pink salmon anticipated in 2010. There is generally an insignificant abundance of pink salmon that return to the Fraser River in even numbered years relative to the odd numbered years.

8.15.3. Chum-West Coast Vancouver Island

Troll opportunities will be dependent on abundance and allocation guidelines. Consultations with Area G troll may be conducted to discuss possible terminal chum opportunities. Forecast

chum returns are low for 2010. The 2008 and 2009 chum returns are well below average across WCVI stocks. It appears that for chum, the 2007 sea entry year was unfavourable. These fish will return as 4-year olds in 2010. There may be opportunities available to Area G Troll in areas such as Nootka Sound (Areas 25 and 125) and Nitinat (Areas 21 and 121). This will be determined in-season based on escapement and coast-wide gear allocation. Terminal chum opportunities usually occur in early October. Chum salmon may also be retained as incidental catch in other directed fisheries, such as the chinook fishery in Areas 23 to 27, and 123 to 127.

8.15.4. Coho

Management measures to protect stocks of concern, including Interior Fraser and Strait of Georgia coho, will constrain WCVI fisheries in the offshore area. However, there may be potential opportunities available for select hatchery marked coho retention during directed chinook fisheries. Any fishery that allows select hatchery marked coho retention will occur after September 15 when Interior Fraser and Strait of Georgia coho have migrated through the fishing area.

Area G has requested access to wild coho and select hatchery marked coho when levels of abundance are high. The Department's objective is to limit the Interior Fraser River coho to an exploitation rate of 3% (not including terminal harvest or systems experiencing strong escapements). This request requires additional evaluation to determine impacts on the ability to meet the Interior Fraser coho objective (Section 4.1.2) and consistency with the salmon allocation policy.

8.15.5. Chinook

Under the PST, WCVI chinook fisheries are based on an Aggregate Abundance Based Management (AABM) model. Fisheries are prosecuted on an aggregate of United States and Canadian chinook stocks. Initial abundance forecasts provide estimates for two years in advance. For management purposes, the chinook fishery year encompasses the period October to September.

For the 2009/2010 season, which ends September 2010, pre-season fishing plans could be subject to change pending the results of consultations focussing on the conservation and protection of Fraser River, Lower Georgia Strait and WCVI chinook stocks. The consultation process begins in the early spring period as part of the IFMP planning process.

Area G has requested a change to the chinook size limit. However, this request will be further reviewed by DFO and will need to be consulted upon with other interested groups prior to any changes being made. Changes are unlikely prior to the 2010/11 chinook year.

Effective January 1, 2009 the renegotiated Pacific Salmon Treaty terms were put into effect including, the implementation of a 30% reduction in the Total Allowable Catch (TAC) for the WCVI AABM.

On March 30, 2010, the Chinook Technical Committee completed the final calibration of the Chinook Model for the 2010 season. The Abundance Index (AI) for the 2010 season is 0.96

which results in a potential available catch in the WCVI AABM fishery of 143,700 chinook subject to domestic stocks of concern constraints. For planning purposes, the preliminary Area G harvest level is determined by subtracting the anticipated First Nations (5,000) and recreational (55,000) catches from the total TAC. The WCVI commercial Area G troll fishery harvest level is therefore 83,700 chinook. Adjustments to this harvest level will be made in-season based upon observed First Nations and recreational catches.

Within the bounds of the PST provisions, Area G chinook fisheries will be managed to limit impacts on domestic stocks of concern, including Fraser River Spring 4₂ chinook, Fraser River Spring 5₂ and Summer 5₂ chinook, WCVI chinook, Lower Strait of Georgia (LGS) chinook, and Interior Fraser coho.

Fraser River Spring 4₂ chinook, Fraser River Spring 5₂ and Summer 5₂ chinook stocks are present off the WCVI during the spring and summer period, most prevalently when they landfall on their migration back to the Fraser River. Time/area and effort restrictions, similar to the previous year, will be implemented to limit Area G impacts on Fraser chinook stocks of concern during the March to July period.

LGS chinook, identified in the fishery by the tagged Cowichan River stock, are broadly distributed in time and area on the WCVI. A number of management approaches have been utilized in previous troll fisheries to limit impacts on LGS chinook. Initially, limits were set on Cowichan chinook CWT encounters with the objective of a 10% reduction in harvest rate on LGS chinook. Given the uncertainty associated with the relatively small proportion of LGS chinook in the WCVI fishery, the approach of reducing the overall Area G harvest rate by reducing the Area G TAC was adopted to limit impacts in 2008. For 2010, it is anticipated that the substantial reduction in Area G harvest rate under the 2009 PST agreement should provide sufficient protection for LGS chinook. In addition, the fishery will be managed to disperse harvests throughout the fishery year to afford further protection to this stock of concern.

Preliminary forecasts indicates that WCVI wild chinook continue to be a stock of concern. As a result, management measures consistent with the previous year will be implemented to protect this stock. The objective for Area G in 2009/2010 will be to avoid encounters with WCVI chinook by restricting the troll fishery to offshore areas during the summer period. Specifically, there will be a 5 nautical mile inside boundary in South West Vancouver Island and a 2 nautical mile boundary in North West Vancouver Island during the period when WCVI chinook return to the West Coast of the island. The 5/2 nautical mile boundary may be reduced to 1 nautical mile as the WCVI chinook migration comes to an end. If further restrictions were required for conservation purposes, zone/area and time closures could be implemented.

Anticipated Chinook Opportunities for Area G Troll

Management actions will be taken in the 2009/2010 chinook year to limit the annual exploitation rate on LGS chinook, Fraser River Spring 4₂ chinook, Fraser River Spring 5₂ and Summer 5₂ chinook, WCVI chinook and Interior Fraser coho. The following fishing plan is subject to

change if the status of a domestic stock passing the WCVI changes to a “stock of concern”. Fishery openings are planned to distribute harvests proportionately over all fishery periods.

October 2009 to March 2010

Stock composition data indicate the majority of fish harvested during this period are US origin stocks rearing off the WCVI. With the exception of LGS chinook, which may also rear off the WCVI, other Canadian chinook stocks of concern are not vulnerable to the fishery during this period.

During the period from October 1 to March 15, a harvest of up to 20% of the Area G annual TAC is recommended, based on the two year out PST Chinook model forecast of abundance and resulting TAC for the WCVI troll fishing area. This precautionary harvest level reflects the preliminary nature of the TAC and the low catch per unit effort that typically occurs at this time of year.

March 16 to April 18, 2010

Stock composition data indicate the relative abundance of Fraser bound chinook in the fishery begins to increase in March and April. The status of Fraser River Spring 4₂ chinook is stock of concern. Fraser River Spring 4₂ chinook migrate off the continental shelf outside the WCVI troll harvest area. However, a portion of the stock is vulnerable to the troll fishery on their return migration. In 2008/09, a time-area closure for the WCVI troll was increased to provide further protection for Early-Timed Fraser chinook during the period in which they were vulnerable to the fishery.

For the 2009/10 year, a full time-area closure will be maintained from March 15 to April 18 to avoid interception of Fraser River Spring 4₂ chinook.

April 19 to June 15, 2010

Stock composition data indicate the relative abundance of Fraser and Columbia chinook in the fishery increases during this period. Many of the Fraser and Columbia origin stocks vulnerable to the fishery during this period are relatively abundant. With the exception of LGS chinook and Fraser River Spring 4₂ chinook in SWVI through early May, other Canadian chinook stocks of concern are not generally vulnerable to the fishery at this time. However, from mid-to-late June, there is increasing potential for interception of stocks of concern including Fraser River Spring 5₂ and Summer 5₂ chinook and Interior Fraser coho.

During the period from April 19 to June 15, the harvest is managed by an effort based model. From April 19 through April 30 the boat day cap is 250 boat days. In addition, portions of SWVI will remain closed until May in order to avoid interception of Fraser River spring 4₂ chinook. For May 1 through May 30 the boat day cap is 1000 boat days and for June 1 through June 15 time period, the boat day cap is 650 boat days. Further consideration is given to the total percentage of the Area G annual TAC harvested in these months so that the catch is spread as evenly as possible throughout the fishery year.

June 16 to July 31, 2010

Through July, stock composition data indicate the relative abundance of Fraser and US bound chinook (Puget Sound, Columbia, Oregon stocks) in the fishery remains high during this period. Many of these stocks are relatively abundant. However, opportunities for harvest in July are limited due to increasing interception of Interior Fraser coho and WCVI Chinook. As well, starting in 2007/08, a time–area closure for the WCVI troll was implemented from June 16 to July 31 to provide protection for Fraser River spring 5₂ and Fraser River summer 5₂ chinook. For the 2009/10 year, a full time-area closure will be maintained from June 16 to July 31 to avoid interception of Fraser River spring 5₂ and Fraser River summer 5₂ chinook.

August 2010

Through August, stock composition data indicate the relative abundance of Fraser and US bound chinook (Puget Sound, Columbia, Oregon) in the fishery remains high during this period. Many of these stocks are relatively abundant. Fraser River spring 5₂ and Fraser River summer 5₂ chinook are less vulnerable to the fishery at this time. However, opportunities for harvest in August are limited due to increasing interception of Interior Fraser coho and WCVI Chinook.

During August, a harvest of up to 20% of the Area G annual TAC will be considered based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. The harvest level may be adjusted to ensure sufficient WCVI AABM TAC remains for First Nation and recreational fisheries. In addition, the fishery will be managed to minimize mortality on Interior coho through: i) a maximum interception of coho and ii) the mandatory use of plugs. As well, the fishery will be managed to minimize mortality of WCVI origin chinook through the use of closures during time and areas where WCVI Chinook stocks are prevalent.

September 2010

Stock composition data indicate the majority of chinook stocks vulnerable to the fishery during this period are bound for the Fraser River, Puget Sound and the Columbia River. Vulnerable stocks of concern include Interior Fraser coho and WCVI chinook, which are present until about mid-September. After mid-September, Interior Fraser coho are not vulnerable to the fishery and retention of adipose fin clip (AFC) coho has been permitted in recent years. In addition, September may be utilized to harvest any remaining available WCVI AABM harvest as the chinook model calendar year ends on September 30th.

During September, a planned harvest of up to 20% of the Area G annual TAC will be considered based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. The harvest level may be adjusted based on the available WCVI AABM TAC remaining after accounting for First Nation and recreational fisheries. Any harvest opportunities prior to September 15 must be managed to avoid interception of coho and WCVI chinook. After September 15, retention of adipose fin clip (AFC) hatchery origin coho may be permitted.

October 2010 through winter time period to May 2011

As of October 2010, chinook fisheries will be managed under PST defined allowable limits for the 2010/11 fishery year. For the winter period from October to early-March, low intensity fisheries are anticipated, with harvest levels set to harvest approximately 20% of the 2010/11 Area G TAC (based on the two year out forecast). In the March to May period, management measures are likely required to protect Early-timed Fraser Chinook.

8.16. Area H Troll

8.16.1. Sockeye

Actual opportunities for targeted Fraser River sockeye fisheries will be determined based upon in-season assessment and abundance of Fraser River sockeye stocks and also subject to achieving fisheries management objectives for Late Run and Cultus Lake sockeye, Nimpkish sockeye, Sakinaw sockeye and Interior Fraser coho. In 2010, directed commercial fisheries targeting Fraser River sockeye returns are anticipated. The late run stock group is expected to be the dominant component of this years return. The 2010 Fraser River sockeye pre-season forecast is expected to be available by late March. Fishing opportunities will be planned and managed consistent with Fraser River sockeye management objectives.

If an opportunity is available, the following Subareas are expected to open in late July to mid August: 12-1, a portion of 12-2, 12-3, 12-4, 13-7 (excluding Deepwater Bay), 13-8, 13-9 and 13-27 to 13-32. Additional Subareas may open in upper Area 12 subject to the development of a fishing strategy for all gear types in that area. A staggered opening (from north to south) or closure (from south to north) may be considered if it results in increased fishing time without increased impacts on stocks of concern.

In addition, Areas 18 and 29 may open in relation to the abundance and timing of Early Summer and Summer run stocks which may not be timed with opportunities in Johnstone Strait. Fishing opportunities in the lower Strait of Georgia will be confirmed in-season following consultation with industry and will depend on run size, diversion rate, and remaining Area H allocation.

See Appendix 10 for demonstration fisheries under consideration.

8.16.2. Pink

8.16.2.1. Fraser River Pink

2010 is an off cycle for Fraser River pink salmon, thus no directed fisheries on Fraser River pink salmon are planned.

8.16.2.2. Mainland Inlet Pink

2010 is typically a dominant year cycle run for Mainland Inlet pink. Based on strong returns in the 2008 parental brood year, 2010 returns are expected to be average to above average. Fishing opportunities in 2010 will be confirmed in-season based on abundance assessments (e.g. over flights, escapement counts and possibly assessment fisheries). A troll fishery may be conducted in late July in Area 12 to assist in determining the abundance of pink. Boundaries will be determined in-season. Coho sensitive areas will remain closed.

Fishing opportunities will be considered in mid to late August to mid-September in Areas 12 and 13 if stocks appear to be returning in sufficient abundance. Details will be determined in-season.

8.16.3. Chum

Early October/Late October - Area 12 and 13

- Johnstone Strait chum are expected to return “near target” in 2010 based on the below average returns encountered in 2009 (preliminary), the above average parental brood abundance of the 2006 return, and the high variability in chum returns. Chum fishing opportunities are anticipated to commence in the first week of October. The “mixed-stock harvest strategy” chum fishing plan will be finalized pre-season following consultations with stakeholders.
- See Appendix 10 for demonstration fisheries under consideration.

October/November – Area 14-17

- Chum fishing opportunities in terminal areas will be determined in-season and discussed through pre-season meetings and the chum advisory process.

Mid to Late October - Area 29

- Potential fishing opportunities for chum in Area 29 will be determined in-season based on in-season abundance assessments.

8.16.4. Coho

There will be no coho retention opportunities in 2010; however, limited terminal assessment fishery opportunities may be considered subject to in-season information but are not anticipated.

8.16.5. Chinook

Due to concerns for Lower Strait of Georgia stocks, no directed chinook fisheries are planned for 2010 and there will be non-retention in fisheries directed at other stocks. Limited terminal assessment fishery opportunities may be considered subject to in-season information.

9. POST-SEASON REVIEW 2009

9.1. Conservation / Sustainability Objectives

9.1.1. Lower Strait of Georgia Chinook

The objective for Lower Strait of Georgia (LGS) chinook in 2009 was to continue with management actions to reduce fishery exploitation similar to 2005-2007 in known areas of significant impact.

Chinook returns to many LGS systems have been declining since the late 1990's and continue to be at low levels. For the Cowichan River, the PSC indicator for LGS wild fall chinook, the preliminary 2009 return declined to extremely low levels. The total adult return to freshwater was 1,260 chinook, including 540 natural adult spawners, 475 caught in terminal FSC fisheries and 245 retained for hatchery broodstock. The total jack return was 311, including 220 natural spawners, 30 retained in FSC fisheries and 61 retained for broodstock. The escapement goal for the Cowichan River is 6,500 natural adult spawners.

9.1.2. Interior Fraser River, Lower Fraser and Strait of Georgia coho

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

The best available estimate for the total impact of southern BC fisheries on Interior Fraser coho for 2009 is 2.41%. In 2009 escapements back to the Interior were slightly higher than those observed in 2008. The total spawning escapement of 21,043 is below the interim critical benchmark suggested by the recovery team, but is higher than escapements observed for the parental brood year (2006).

In 2009 the total abundance of Interior Fraser coho was estimated to be 24,443 which was 300% higher than the parental brood escapement of 7,705. Escapement returns to the aggregate in 2009, while higher than brood year, continue to indicate that poor marine survivals continue to be an ongoing concern. Despite ongoing habitat impacts, increases in escapement compared to brood year may be the result of higher survival rates during the freshwater rearing period.

9.1.3. Cultus Lake Sockeye

The objective for Cultus Lake sockeye is to limit exploitation rate to 20%.

In 2009, the Summer run returned well-below the 90 p forecast, allowing very few sockeye-targeted fisheries for First Nations FSC fisheries and no commercial or recreational openings. The estimated exploitation rate of Cultus sockeye in 2009 was approximately 7%; therefore, this objective was met.

9.1.4. Sakinaw Lake Sockeye

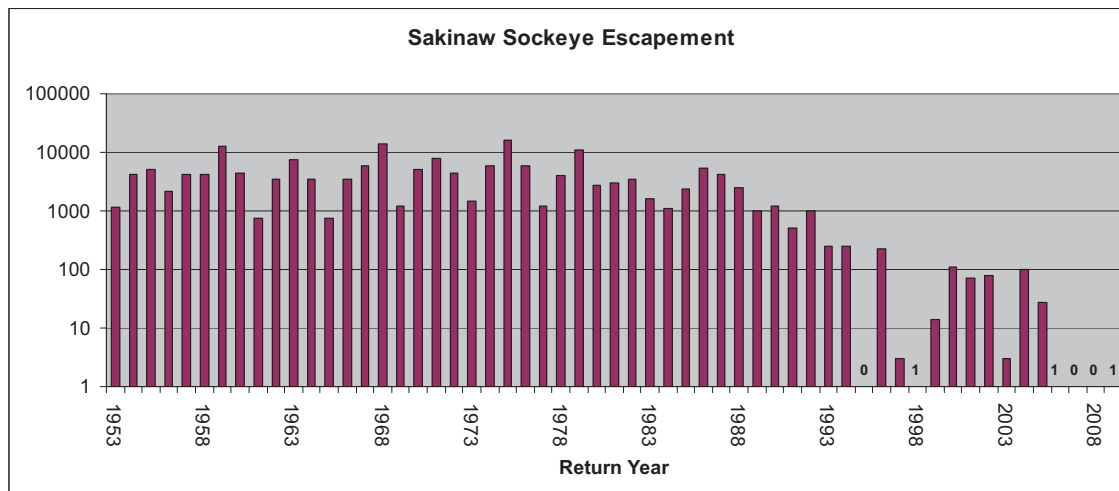
The objective for Sakinaw Lake sockeye is to stop their decline and re-establish a self-sustaining, naturally spawning population.

Annual exploitation rates were previously calculated using a model that incorporated daily harvest rate estimates for Fraser sockeye in Johnstone Strait combined with Sakinaw fence count (i.e. return timing) data. In years with low escapements, timing was estimated based on records for years with abundant timing data.

In spite of strong efforts to minimize mortality and increase the abundance of this population, spawner numbers remain extremely low. Only one sockeye returned to Sakinaw Lake in 2006, zero fish in 2007 and 2008 and one sockeye in 2009. However, 420,000 sockeye progeny from captive brood were released into Sakinaw Lake in 2008 and 720,000 in 2009. These cohorts will be smolting in 2009 and 2010 and should return in 2011 and 2012, respectively.

In addition, the uncertainties associated with timing and harvest rates are difficult to quantify and probably large, meaning that exploitation rate calculations are imprecise. For these reasons, we are unable to evaluate whether the 2009 objective of stopping the decline of this population was achieved.

Figure 2. Log scale of Sakinaw Lake sockeye spawner estimates over time



9.1.5. WCVI Wild Chinook

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

Management actions for 2009 were in place to ensure the exploitation rate did not exceed 10%. The exploitation rate was measured by Coded Wire Tag (CWT) data gathered from these fisheries. The exploitation rate limit includes chinook kept, as well as an estimate of fishing related mortalities of released fish.

As in past years, the North Coast troll fishery was monitored for in-season, DNA-derived estimates of stock composition, and closed when the composition of WCVI origin chinook in their catch was estimated to be at a maximum harvest rate of 3.2%. The 2009 preliminary exploitation rate estimated from CWT data was 2.1%.

The preliminary exploitation rate estimate for the QCI sport fishery (Area 1 and 2W) is included as part of the North Coast sport fishery exploitation rate. The North Coast sport fishery estimate also includes exploitation in Central Coast sport fisheries. The 2009 preliminary exploitation rate estimated for the total North Coast sport fishery was 12.4%.

The WCVI troll fishery was closed in July and a portion of August, and a partial closure of near shore areas of Areas 123 to 127 was implemented in September and October to allow a migration corridor for returning natural WCVI chinook. The time and area management actions for the WCVI troll fishery were designed to maintain negligible impact on these stocks. A limited Area G troll plug fishery occurred in early August 2009. The fishery was designed to avoid WCVI origin chinook by restricting fishing to offshore areas, and limiting the overall TAC. DNA-derived stock composition results from the plug fishery suggest negligible impacts on WCVI

origin chinook in both SWVI ($0\pm0.1\%$ or approximately 0 ± 10 chinook) and NWVI ($0.5\pm0.5\%$, or approximately 12 ± 11 chinook). The 2009 preliminary exploitation rate estimated from CWT data was 0%.

Size limit and harvest restrictions were in place for the WCVI recreational fishery from July 15 to September 1 (NWVI) and August 1 to September 15 (SWVI) to protect returning WCVI origin chinook stocks. Additional conservation measures included the '2 chinook per day under 77 cm maximum size limit', imposed within the 1-mile surfline corridor of the near-shore WCVI to protect the large female WCVI origin chinook. In more terminal in-shore areas, conservation measures included a combination of maximum size limits, chinook non-retention areas and finfish closures depending on the level of concern for local stocks. The 2009 preliminary exploitation rate estimated from CWT data was 4.7%.

With the exception of either hatchery or enhanced stocks, abundance of wild WCVI origin chinook remains very low. The brood year spawners in 2005, 2006 and 2007 were very low in the wild population originating from Clayoquot Sound (Statistical Area 24) and stocks like Nahmint River in the approach areas. These broods also seem to experience low marine survival which is resulting in low returns in 2010 but with relatively uniform age distributions. The predicted age composition for Somass chinook is 27%, 41% and 32% of 3, 4, and 5-years olds, respectively.

In 2009, the preliminary post-season exploitation rate estimated for the Canadian ocean fisheries above was approximately 19.1%. Since 2000, the exploitation rate has varied from 3.0 to 19.1 averaging 11.4%.

9.1.6. Interior Fraser River Steelhead

The objective for Interior Fraser River steelhead provided by the B.C. Ministry of the Environment is to protect 80% of the run with a 90% certainty in Fraser River commercial gill net fisheries. This objective does not apply to selective commercial fisheries (those using gear types other than gill nets) or fisheries conducted terminally on single stocks. In addition, other commercial south coast fisheries are to release to the water with the least possible harm all steelhead caught incidentally in fisheries targeting other species.

In order to achieve this objective in 2009, the BC Ministry of the Environment used a model to project the potential dates for a Fraser River commercial fishery that would protect 80% of the steelhead run with 90% certainty. This model is based on run-timing and migration speed data for steelhead, taken from historical catch in the Albion test fishery and studies on in-river migration speeds. There is no in-season update available for this model, as the Albion test fishery does not intercept enough steelhead in a given year to quantify any in-season changes in run-timing or abundance.

Using this model, the BC Ministry of the Environment concluded that the steelhead objective could be met by having a one day fishery on or after October 25th. Based on this recommendation, a 24 hour fishery occurred for Area E gill nets on October 27th. The regulations for this fishery included mandatory non-retention of steelhead, as well as maximum net length of 100 fathoms, 30 minute maximum soak times, and mandatory revival tanks. In

addition to this fishery, commercial openings for chum within the Fraser River included one gill net opening for First Nations below the Port Mann Bridge, as well as a selective beach seine fishery in the Fraser River near the mouth of the Harrison River.

In the marine areas the impacts on Interior steelhead were expected to be very limited due to: no commercial Fraser River sockeye-targeted fisheries; a consistent fishing pattern of the Johnstone Strait mixed stock chum fishery relative to recent years; and mandatory revival tanks for by-catch.

It is unknown at this point what the actual steelhead escapement was in 2009, or whether the target escapement to the Thompson and Chilcotin River steelhead groups of more than 1,250 fish was met.

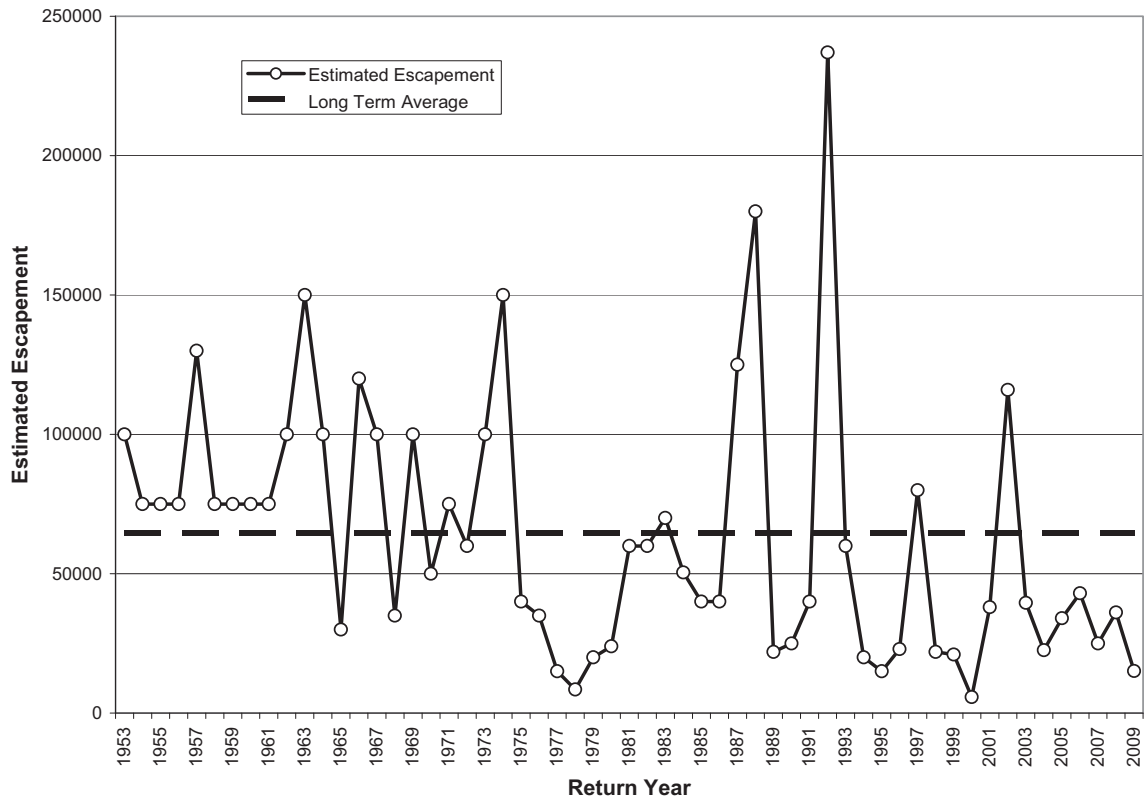
9.1.7. Nimpkish Sockeye

The objective for Nimpkish sockeye is to minimize the impact of Canadian fisheries

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

In 2009, there were no directed Fraser River sockeye commercial or recreational fisheries due to lower than anticipated Fraser River sockeye returns. In years of harvestable surpluses of Fraser River sockeye, effort is restricted to below Lewis Point to protect returning Nimpkish sockeye. In 2009, the Nimpkish sockeye return (Figure 3) demonstrated a continued low (relative to the long term average) return and the second lowest in the last decade. However, the objective of minimizing the impact of Canadian fisheries was met.

Figure 3. Historic trend of Nimpkish River sockeye escapement



9.1.8. Early Timed Fraser Chinook

The objective is to implement management actions that will reduce the exploitation rate approximately 50% relative to the 2006 to 2007 period.

In response to the continued decline in abundance of Early-timed Fraser chinook stocks in recent years, the Department put in place additional management measures in 2009 to reduce fishery impacts on Early-timed Fraser Chinook by 50% overall, compared with average impacts observed in 2006 and 2007. Fishery reductions were structured so that the brunt of the conservation burden was borne by commercial and recreational fisheries, rather than First Nations' fisheries. However, all fisheries which have been shown to impact Early-timed Fraser chinook were subject to additional management measures.

Specific management actions that were implemented in 2009 during the Early-timed Chinook migration period included:

- Effort limits and time/area closures in the Area G troll fishery;
- Slot limits and non-retention for chinook in marine recreational fisheries;
- Non-retention of chinook in the Fraser River recreational fishery; and
- Delayed opening dates and reduced fishing times in Fraser River First Nations fisheries.

Evaluation of the effectiveness of the 2009 management actions on Early Timed Chinook has not been assessed. In future, the management of Fraser River Chinook will be managed based on the 5 Fraser Chinook management units used in the Pacific Salmon Treaty process (Table 10). As a result, exploitation rate analysis will be provided for fishery specific and total exploitation rates for CTC indicator stocks, based on coded-wire tag (CWT) recoveries. The Nicola CWT indicator stock is the indicator for the Spring 4₂ management unit, which includes some of the Early-Timed Chinook stocks (Table 10). The remainder of the Early-Timed Chinook stocks are included in the Spring 5₂ management unit which does not have an indicator stock at this time. The preliminary estimate of the exploitation rate on the Nicola CWT indicator in 2009 was 48.7% in Canadian fisheries.

9.1.9. Spring and Summer Fraser Chinook

The objective for Spring and Summer (age 5₂) Fraser Chinook is to ensure the spawner abundance of these populations does not decline below the 1979 to 1982 base period level of 30,050.

In response to the recent trend of decreasing productivity for Spring and Summer 5₂ Chinook, the Department implemented additional management measures in 2008 and 2009, based on in-season abundance information. The objective was to ensure that spawner abundance for these stock groups met or exceeded the 1979-1982 average escapement of approximately 30,000 spawners (equivalent to a 40,000 return to the mouth of the Fraser, given a recent year average in-river harvest rate of 25%). An in-season estimate of the terminal return of Spring and Summer 5₂ Chinook was provided by Departmental staff using the relationship between the cumulative Catch Per Unit Effort (CPUE) of chinook caught in the Albion chinook test fishery and historical returns of Spring and Summer 5₂ chinook stocks. This in-season abundance estimate informed a two-zone management approach, based on a breakpoint of 40,000 estimated terminal returns. Details of fishery management actions associated with each zone are provided in the table below.

Management Zones:

Zone	Predicted Return to the Fraser River	Rationale
2	Above 40,000	Rebuilding required; continue to use management actions implemented in previous years prior to 2008. (e.g. remove recreational and commercial restrictions implemented in 2008, allow additional FSC fishing time)
1	Below or equal to 40,000	First Nations opportunities similar as in 2006-2008. Management actions to reduce harvest in recreational and commercial fisheries similar to 2008.

The estimated terminal return for the Spring and Summer 5₂ aggregates using Albion catch through the end of May was 65,986 (95% CI: 49,963 and 87,148). A second prediction of terminal returns using data through mid-June was 56,588 (95% C.I.: 41,523 and 77,119). These estimates resulted in the implementation of a Zone 2 management approach. The 2009 spawning

escapement, as enumerated using various stock assessment techniques, was approximately 62,000. The management objective was achieved for these stock groups.

9.1.10. Inshore Rockfish

The management objective for inshore rockfish is to introduce conservation strategies that will ensure stock rebuilding over time. A fishing mortality rate of less than 2.0 percent (all Pacific Region fisheries) will be required to achieve this objective.

Rockfish Conservation Areas, (RCA's, no fishing zones for gear that impact on rockfish), have been implemented within the Strait of Georgia and in all outside waters including the Queen Charlotte Islands. The conservation strategy for rockfish along the coast of British Columbia is long term. Rockfish are a long-lived species with a low level of productivity and therefore rebuilding will take several decades.

9.2. First Nation Objectives

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

Opportunities for First Nations FSC fisheries in the South Coast and Fraser River in 2009 were available for most salmon stocks. However, due to significantly lower returns of Fraser River sockeye than expected, FSC harvest opportunities directed at Fraser River sockeye were very limited. For the majority of the season and in most areas, sockeye harvest was limited to low levels of sockeye by-catch during FSC fisheries directed at other species. Also, as in recent years restrictions were implemented to protect 90% of the Early Stuart component of the Fraser River sockeye return through a series of window closures.

Restrictions were also in place to protect Spring and Summer run Fraser chinook, Interior Fraser coho, Sakinaw Lake and Nimpkish River sockeye, Interior Fraser steelhead and to minimize impacts upon WCVI chinook, Lower Strait of Georgia chinook and Early-Timed Fraser chinook.

First Nations had first priority access in Fraser River sockeye salmon allocations. In total, First Nations food, social, and ceremonial fisheries harvested approximately 61,429 sockeye in the Fraser River watershed and 10,144 Fraser River sockeye in marine waters (Johnstone Strait, Strait of Georgia and Area 20).

In addition to sockeye, First Nations had opportunities to harvest chinook and coho as well as chum salmon (utilizing both gill nets and selective gear in the Fraser River). In the Fraser River watershed there were approximately 27,437 chinook, 12,991 chum, 1,982 pink and 280 coho harvested for FSC purposes. In marine waters there were approximately 1,321 chinook, 17,819 chum, 22,712 pink and 3,749 coho harvested.

9.3. Recreational and Commercial Objectives

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

The primary objective in the recreational fishery to maintain the expectation and opportunity to catch fish in a stable manner was achieved; however, returns on some stocks such as Fraser River sockeye were considerably lower than forecast in 2009. In the commercial fishery, the objective to improve the economic performance of fisheries so that they can reach their full potential, to provide certainty to participants, and to optimize harvest opportunities was limited due to generally lower than forecast levels on some stocks, in particular for Fraser River sockeye in 2009. Stocks of concern also impacted on available fishing opportunities in 2009.

9.4. International Objectives

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

Review and performance of the PST provisions for sockeye, coho, chum and chinook salmon occur annually at bilateral meetings of the PST, and these results 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>

9.5. Domestic Allocation Objectives

The objective is to manage fisheries in a manner that is consistent with the *Allocation Policy for Pacific Salmon* and the 2009 Pacific Salmon Commercial Allocation Implementation Plan.

While fisheries were managed to address conservation objectives, they were generally conducted in a manner consistent with the Allocation Policy for Pacific Salmon.

The commercial salmon allocation plan for 2009 resulted in projected coast-wide salmon shares as follows: seine 31%, gill net 26% and 43% troll. Analyses indicate that what was achieved was 18.4% seine, 34.1% gill net and 47.5% troll. The main reason was the very good catches of chinook by Areas F and G relative to the much smaller abundance of pink, chum and coho in the North Coast and Fraser River sockeye in the South Coast compared to the pre-season forecasts.

The other objective was an equitable sharing arrangement between the southern gill net fleets and the southern inside troll fleet. At the end of the season, the southern gill net sharing was: Area D 420 sockeye equivalents per vessel (seq/v), compared to Area E 150 seq/v. The troll sharing was Area G 3,860 seq/v, compared to Area H 219 seq/v.

9.6. Compliance Management Objectives

At the end of each season, statistics are compiled on the numbers of checks conducted from various platforms (vessel, vehicle and foot), and the number of charges resulting from these checks and others. Using this information, staff can evaluate whether compliance management objectives were met and whether the activities undertaken were effective. Overall compliance rates for each area and fishery are calculated to help identify priority areas for enforcement in subsequent seasons. In addition, valuable narrative data is collected to ensure problem areas are identified and addressed.

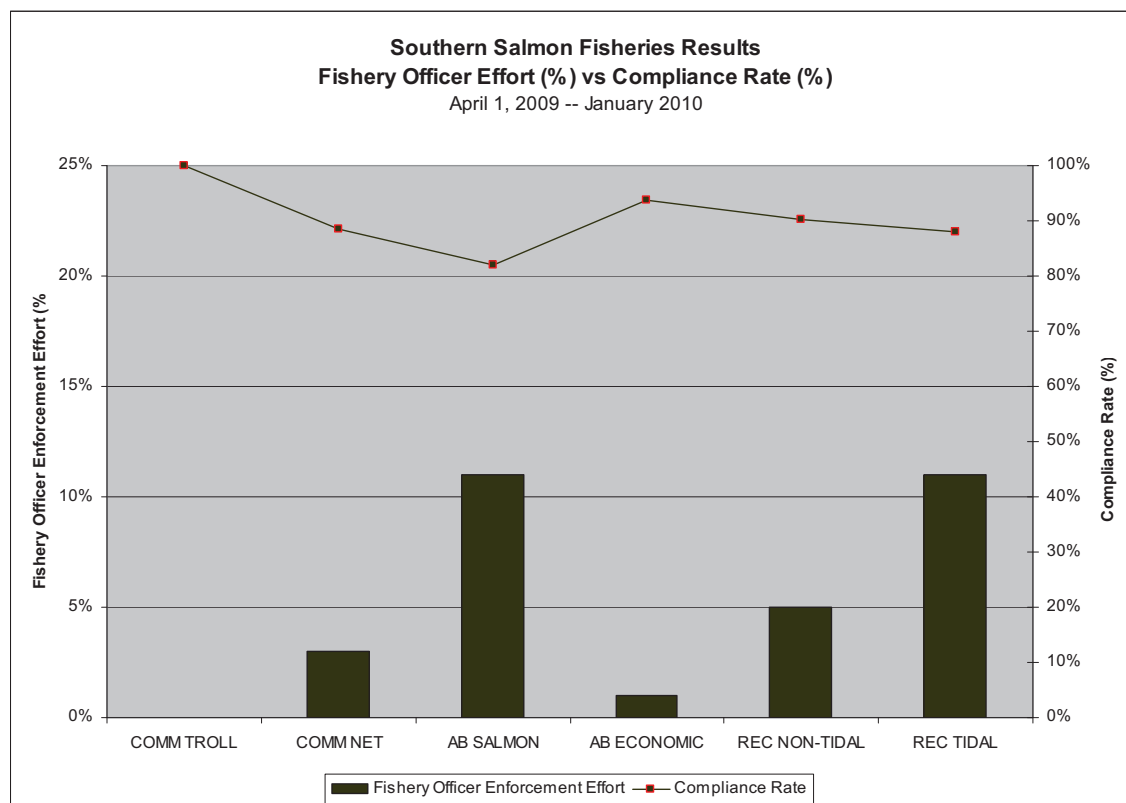
Reports generated from C & P's Fisheries Enforcement Activity Tracking System (FEATS) are tracked and analyzed against business plan projections to see if patrol effort is taking place in areas where increased compliance is needed.

Table 20: A summary of the compliance management program statistics for the Pacific salmon fisheries in the south coast management area.

SOUTHERN SALMON FISHERIES -- APRIL 1, 2009 TO JANUARY 12, 2010 (South Coast, Lower Fraser & BC Interior)					
Fishery Category	Fishery Officer Effort Hours	Percent Of Total Effort	Checks*	Violations	Compliance Rate**
Comm Salmon (Troll)	39		8	0	unknown
Comm Salmon (Net)	1614	1%	539	62	88%
Ab. Salmon	13689	10%	1731	317	72%
Ab. Salmon (Economic)	280	0.2%	68	10	93%
Rec Salmon (Non-Tidal)	3264	2%	2756	247	91%
Rec Salmon (Tidal)	6252	4%	6881	829	88%

Notes: * Checks = no. of persons checked, ** Compliance rate number of violations/person checked X 100

Figure 4: Compliance information (by sector), correlated to proportional effort by DFO fishery officers with respect to Pacific salmon in the south coast management area.



9.7. Salmon Enhancement Objectives

Egg targets are determined pre-season for each stock. Actual egg take numbers in these tables are preliminary. Difficulties in capturing brood stock because of environmental conditions or poor returns can limit success in achieving targets. Actual fecundity and in-hatchery survival rates will determine the number of juveniles released. If there are excess fry due to higher than usual fecundity and in-hatchery survival, they are usually released as unfed or small fed fry. Hatcheries may collect additional eggs for other programs for education, research or stock re-establishment. These additional eggs are not included in the hatchery targets in the following tables, but are included in the actual eggs taken. In 2008, larger or more complex Public Involvement Projects (Designated Public Involvement, or DPI), operated by volunteers, were included in these tables in addition to major DFO operations and contract hatcheries (Community Economic Development Program, or CEDP). The smaller Public Involvement projects that are not included are focussed towards stewardship, stock rebuilding or educational activities, and do not release large numbers of fish. Facilities may also enhance steelhead and cutthroat under the direction of the Province of BC. Targets and actual numbers for these species are not included. SEP also works with First Nations, industry, community groups and other government agencies to design and implement habitat restoration projects. Habitat-related activities are not addressed in this management plan.

9.7.1. Chinook

Chinook in the South Coast are largely enhanced to support important recreational fishery opportunities in marine and freshwater areas. The “Eggs Attained” for the most recent brood year will be released as indicated under Release Target. East Coast Vancouver Island stocks showed slightly improved returns in 2009 over the previous few years, but the West Coast Vancouver Island and Fraser River returns were barely average to quite poor.

Table 21(a): Production of Chinook – DFO Enhancement facilities

Project	Run	Stock	Release Site	Release Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Big Qualicum R	fall	Big Qualicum R	Big Qualicum R	Smolt 0+	3,500,000	3,192,447	4,200,000	4,296,538
Capilano R	fall	Capilano R	Capilano R	Smolt 0+	460,000	334,534	900,000	656,438
			Burrard Inlet	Seapen 0+	100,000	171,365		
Chehalis R	sum	Chehalis R	Chehalis R	Smolt 0+	390,000	704,812	500,000	914,487
	fall	Harrison R	Harrison R	Smolt 0+	300,000	291,153	420,000	330,659
Chemainus R	fall	Chemainus R	Chemainus R	Smolt 0+	160,000	47,000	175,000	85,787
Chilliwack R	spr	Chilliwack R	Chilliwack R	Smolt 0+	50,000	0	62,500	0
	sum	Chilliwack R	Chilliwack R	Smolt 0+	410,000	514,750	512,500	584,269
	fall	Chilliwack R ²	Chilliwack R	Smolt 0+	1,000,000	1,114,112	1,250,000	1,921,066

					2008 Brood		2009 Brood	
Project	Run	Stock	Release Site	Release Stage	Release Target	Actual Release	Egg Target	Eggs Attained
Conuma R	fall	Burman R	Burman R Est	Seapen0 +	0	0	400,000	419,652
	fall	Conuma R	Conuma R Est	Seapen0 +	1,700,000	2,135,462	3,200,000	3,167,420
	fall	Gold R	Gold R	Smolt 0+	0	0	350,000	39,896
	fall	Sucwoa R	Sucwoa R	Smolt 0+	40,000	8,948	50,000	16,767
	fall	Thupana R	Thupana Est	Seapen0 +	40,000	34,270	50,000	43,085
Inch Cr	sum	Maria Sl	Hope & Camp Sl	Smolt 0+	100,000	97,426	150,000	126,602
L Qualicum R	fall	L Qualicum R	L Qualicum R	Smolt 0+	2,250,000	2,356,623	3,150,000	3,071,214
Nitinat R	fall	Nitinat R ²	Nitinat Lk	Seapen0 +	2,000,000	3,053,623	3,500,000	3,979,891
	fall	Nitinat R ²	Sooke Hbr	Seapen0 +		93,641		
	fall	Sarita R	Poett Nook	Seapen0 +	300,000	405,685	450,000	423,688
	fall	Sarita R	Sarita R	Smolt 0+	100,000	100,600		
Puntledge R	sum	Puntledge R	Courtenay Est	Seapen 0+	1,600,000	199,524	2,400,000	1,087,827
	sum	Puntledge R	Puntledge R	Smolt 0+	1,500,000	203,249		
	fall	Puntledge R	Puntledge R	Smolt 0+		1,484,060	2,000,000	2,007,054
Quinsam R	fall	Quinsam R	Campbell R	Smolt 0+		903,485	4,400,000	4,462,688
	fall	Quinsam R	Campbell R	Egg Plant		42,800		
	fall	Quinsam R	Elk Falls Ch 1	Egg Plant	1,000,000	7,375		
	fall	Quinsam R	Elk Falls Ch 2	Egg Plant	1,900,000	28,934		
	fall	Quinsam R	Discovery Pass	Seapen0 +		1,070,269		
	fall	Quinsam R	Quinsam R	Smolt 0+		1,969,542		
	fall	Quinsam R	Quinsam Lk	Egg Plnt	165,000	32,131		
	fall	Salmon R/JNST	Salmon R/JNST	Smolt 0+	60,000	see Sayward F&G		93,183
Robertson Cr	fall	Nahmint R	Nahmint R	Smolt 0+	6,000,000	32,704	250,000	4,040
	fall	Nahmint R	Nahmint Est	Seapen 0+	500,000	0		
	fall	Robertson Cr	Stamp R	Smolt 0+	200,000	6,147,289	7,200,000	6,933,617
Shuswap R	sum	Shuswap R Low ²	Shuswap R Low	Smolt 0+		505,608	700,000	672,450
	sum	Shuswap R Mid	Shuswap R Mid	Smolt 0+	50,000	209,100	200,000	201,040
	sum	Shuswap R Mid	Shuswap R Mid	Egg Plant		68,650		
Spilus Cr	spr	Coldwater R	Coldwater R	Smolt 1+ ¹	140,000	48,208	90,000	39,928

					2008 Brood		2009 Brood	
Project	Run	Stock	Release Site	Release Stage	Release Target	Actual Release	Egg Target	Eggs Attained
	spr	Coldwater R	Coldwater R	Fed Spr		47,449		
	spr	Nicola R	Nicola R	Smolt1+ ¹	70,000	137,605	250,000	261,846
	spr	Nicola R	Nicola R	Fed Spr	400,000	54,595		
	spr	Salmon R/TOMF	Salmon R/TOMF	Smolt 1+ ¹	1,700,000	70,298	170,000	104,176
	spr	Salmon R/TOMF	Salmon R/TOMF	Fed Spr		44,855		
	spr	Spilus Cr	Spilus Cr	Smolt 1+ ¹	50,000	52,039	90,000	98,231
	spr	Spilus Cr	Spilus Cr	Fed Spr		62,444		
Tenderfoot Cr	sum	Porteau Cv	Porteau Cv	Seapen0+	800,000	494,546	1,400,000	578,556
	sum	Porteau Cv	Squamish Est	Seapen0+	400,000	0		
	sum	Cheakamus R	Cheakamus R	Smolt 0+	100,000	67,961	117,000	123,213
	fall	Cheakamus R	Cheakamus R	Smolt 0+		17,480		21,086

¹ Yearling smolts, to be released in 2010, are listed as number of fry on hand.

² Extra eggs are taken for transplants to other projects.

Table 21(b): Production of Chinook – Community Economic Development Projects & Designated Public Involvement Projects

					2008 Brood		2009 Brood	
Project	Run	Stock	Release Site	Release Stage	Release Target	Actual Release	Egg Target	Eggs Attained
Alouette R	fall	Chilliwack R	Alouette R S	Smolt 0+	200,000	149,800		
Chapman Cr	fall	Lang Cr	Chapman Cr	Smolt 0+	100,000	100,000		
Clayoquot	fall	Kennedy R Low	Kennedy R Low	Smolt 0+	380,000	280,000	525,000	347,000
Cowichan R	fall	Cowichan R	Cowichan Bay	Seapen 0+	100,000	200,294	1,000,000	500,000
	fall	Cowichan R	Cowichan R	Smolt 0+	1,000,000	1,216,351		
	fall	Cowichan R	Cowichan R Up	Fed Spr	700,000	346,700		
Englishman Enh	fall	L Qualicum R	Englishman R	Smolt0+	210,000	220,000		
Esquimalt Hb	fall	Nitinat R	Esquimalt Hb	Seapen 0+	172,000	95,426		
Gillard Pass	fall	Phillips R	Fanny Bay/JNST	Seapen 0+	90,000	37,684	220,000	182,996
	fall	Phillips R	Phillips R	Smolt 0+	90,000	102,527		
Goldstream R	fall	Goldstream R	Goldstream R	Smolt0+	36,000	236,042	250,000	18,000
Gwa'ni	fall	Woss R	Anutz Lk	Smolt0+	20,000	0	250,000	516,428
	fall	Woss R	Wagidis Ch	Smolt0+		10,604		
	fall	Woss R	Nimkish	Smolt0+	90,000	0		

Project	Run	Stock	Release Site	Release Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
			Lk					
	fall	Woss R	Vernon Lk	Smolt0+	30,000	0		
	fall	Woss R	Woss Lk	Smolt0+	40,000	24,900		
Kingfisher /TOMF	sum	Shuswap R Low	Shuswap R Low	Smolt0+	144,000	150,000	200,000	185,000
L Campbell R	fall	L Campbell R	L Campbell R	Smolt0+	75,000	53,884	100,000	58,000
Nanaimo R	sum	First L/GSVI	First L/GSVI	Smolt0+	180,000	232,496	250,000	255,407
	fall	Nanaimo R	Nanaimo R	Smolt0+	350,000	418,068	450,000	382,881
Nicomekl R	fall	Serpentine R	Nicomekl R	Smolt0+	50,000	51,006		
Nootka Sound Wtrshed Soc	Fall	Burman R	Burman Est	Seapen0+	400,000	393,559		
		Gold R	Gold R	Smolt 0+	0	178,942		
Oyster R	fall	Oyster R	Oyster R	Smolt0+	45,000	75,000	60,000	70,000
P Hardy / Marble	fall	Marble R	Marble R	Smolt0+	900,000	251,950	1,100,000	750,000
	fall	Marble R	Benson R	Smolt0+		142,847		
	fall	Marble R	Quatsino Sd	Seapen 0+	90,000	100,138		
Powell R	fall	Lang Cr ²	Duck Lk	Smolt 0+	500,000	772,964	871,000	1,231,944
	fall	Lang Cr ²	Lang Cr	Smolt 0+	100,000	75,000		
	fall	Lang Cr ²	Willingdon Est	Seapen 0+	100,000	40,000		
San Juan R	fall	San Juan R	San Juan R	Smolt 0+	720,000	906,200	1,000,000	1,064,000
Sayward F&G	fall	Salmon R / JNST	Salmon R / JNST	Smolt 0+	120,000	88,055	150,000	92,133
Sechelt	fall	Lang Cr	Maclean Bay	Seapen 0+	150,000	73,660		
Serpentine R	fall	Serpentine R	Serpentine R	Smolt 0+	57,600	80,000	80,000	100,000
Slammon R	fall	Lang Cr	Slammon R	Smolt 0+	150,000	69,537	0	91,426
Sooke R	fall	Nitinat R	Sooke R	Smolt 0+	212,500	240,000		
	fall	Sooke R	Sooke R	Fed Spr	180,000	263,000	250,000	220,000
Tahsis R	fall	Leiner R	Leiner R	Smolt 0+	72,000	97,291	150,000	107,106
	fall	Tahsis R	Tahsis R	Smolt 0+	200,000	162,350	150,000	71,929
Thornton Cr	fall	Thornton Cr	Thornton Cr	Smolt 0+	216,000	304,357	300,000	226,163
	fall	Toquart R	Toquart R	Smolt 0+	252,000	210,138	230,000	313,264
Tofino	fall	Bedwell R	Bedwell R	Smolt 0+	58,000		60,000	11,000
	fall	Cypre R	Cypre R	Smolt 0+	160,000	180,833	175,000	190,122
	fall	Cypre R	Cypre Est	Seapen 0+	36,000	64,200		
	fall	Tranquil Cr	Tranquil Cr	Smolt 0+	36,000	23,640	50,000	

¹ Yearling smolts, to be released in 2010, are listed as number of fry on hand.

² Extra eggs are taken for transplants to other projects.

Chehalis River Hatchery: summer run chinook eggs were obtained from returns to the river combined with a transplant from Chilliwack River, which has the same original upper Fraser River stock.

Chilliwack River Hatchery: in 2008, no spring run Chinook were captured, as they are in very low abundance. In 2009 they came in and spawned earlier than expected, so no eggs were obtained. 2009 brood hatchery summer and fall run egg targets were easily achieved. Fall eggs taken include transplants for Alouette, Coquitlam, and two small seapens in Burrard Inlet.

Conuma River Hatchery: enhancement for Gold River stock ceased in 2007 while DFO reviewed information regarding strays from Robertson Creek. Enhancement of the Gold stock resumed in 2008 under the Nootka Sound Watershed Society, but is still incubated and partly reared at Conuma Hatchery. Releases for Burman and Gold rivers are in the second table under Nootka Sound Watershed Society.

Little Qualicum River Hatchery provides fry for the Englishman Enhancement project.

Nitinat River Hatchery: Nitinat provides eggs for Esquimalt Harbour sea pen release (incubation and rearing takes place at Goldstream Hatchery). Some 2009 brood eggs from Sarita River stock were sent to Omega Pacific Fish Farm to be reared to yearling smolts for 2011 release.

Puntledge River Hatchery: summer chinook are the focus of a concerted effort at rebuilding, having been badly depressed in the 1990s. Progeny from captive brood began returning in 2004 and are now contributing to the escapement. In addition, there has been a variety of habitat improvements in the system to reduce stress-related pre-spawn mortality and improve access up river for returning fish. A portion of the brood stock is being held on cooler water at Rosewall Creek Hatchery which greatly increases holding survival, fertility and incubation survival. However, the 2008 returns to the river were low, adversely affecting smolt releases to Puntledge River in 2009.

Quinsam River Hatchery is working on rebuilding the chinook run in Campbell River. The Salmon River stock eggs are incubated at Quinsam, but reared and released by Sayward Fish and Game project (see table 14(b)).

Robertson Creek Hatchery: the 2008 & 2009 Nahmint Chinook returns were low, resulting in a 2009 release of only smolts that was below target (no sea pen releases) and few eggs taken in 2009. Half of the eggs were taken to Omega Pacific Fish Farm to be reared to yearling smolt in an attempt to increase the post-release survival.

Shuswap River Hatchery: changes in production levels for Lower and Middle Shuswap rivers were made after the IFMP had been finalized last year. For 2009 brood, more eggs were taken from Lower Shuswap and fewer from Middle Shuswap to allow for more of the lower stock to be tagged as part of a request from Stock Assessment Division. The reduction in the Middle Shuswap numbers was necessary due to water limitations.

Spilus Creek Hatchery takes more eggs than their target due to occasional high incidences of BKD. When BKD is low, they release excess production as small fry. More 2009 brood eggs were taken from the Nicola River at the request of Stock Assessment Division. More tags are required to assess this important interior Fraser River stock.

Tenderfoot Creek Hatchery: a broodstock collection program was initiated to collect eggs from Cheakamus River chinook in the fall of 2005. This program was partially funded by CN Rail and was a response to the caustic soda spill into the Cheakamus River that occurred in August 2005. 2008 brood eggs were collected as the program continued. There are both summer and

fall runs in the Cheakamus and some years the hatchery takes eggs from both. A poor return of Porteau Cove Chinook resulted in about half of the egg target being attained in 2008 and in 2009. Cowichan River Hatchery is operated as a “stock rebuilding” hatchery. As such, the percentage of total escapement removed for broodstock is limited to 33% under enhancement guidelines. The hatchery came close to attaining their target in 2008, and released fed fry, smolts and seapen smolts in 2009. In 2009, the returns were so low that approximately 300 fish taken for broodstock had to be returned to the river. All fish will be reared to large smolt size, which has the best survival of several strategies tried to date. The egg target was reduced in 2009 due to ongoing problems with the water supply.

Esquimalt Harbour: Nitinat hatchery provides the eggs, which are then incubated and reared at Goldstream hatchery before being transferred to the sea pens at Esquimalt Harbour.

Gillard Pass: 56,364 of the 2009 brood eggs attained were transferred out to Omega Pacific Fish Farm in Port Alberni, where the fish will be reared to yearling smolts.

Goldstream River Hatchery: the target was increased to try to build up the stock. They usually incubate and rear Nitinat River chinook for transfer to sea pens at Esquimalt Harbour (included here), and Saanichton (too small to be included).

Nicomel River Hatchery: eggs are transferred in from Tynehead Enhancement Society Hatchery (Serpentine River stock).

Nootka Sound Watershed Society: chinook eggs from Burman and Gold Rivers are incubated and partly reared at Conuma River Hatchery and then finished in the Gold River area under the direction of the society.

Powell River Enhancement Society provides up to 571K Lang Creek stock eggs to other projects including Sliammon, Chapman Creek, Sechelt, & Texada Island Volunteers.

9.7.2. Coho

Enhancement of coho is largely undertaken to support hatchery mark-selective recreational fishery opportunities in South Coast marine areas and terminal marine and freshwater areas adjacent to hatchery facilities. The adult returns in 2009 to the South coastal and lower Fraser systems were about average for the last few years, with stronger early returns and a poor showing in the later part of the run. Most egg targets were achieved, including those for hatchery mark-selective fishery opportunities. There is an ongoing experimental early release of smolts from Quinsam River and Inch Creek hatcheries to test the theory that plankton blooms of species on which young coho prey are now occurring earlier than in the past. At Quinsam, this is integrated with plankton surveys in the near-shore area.

Table 22(a): Production of Coho – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release ¹	Egg Target	Eggs Attained
Big Qualicum R	fall	Big Qualicum ²	Big Qualicum R	Smolts	1,000,000	1,101,823	1,200,000	1,284,953
Capilano R	fall	Capilano R ²	Capilano R	Smolts	525,000	530,000	1,500,000	1,703,046
Chehalis R	fall	Chehalis R ²	Chehalis R	Smolts	800,000	895,486	1,001,000	800,000
Chilliwack R	fall	Chilliwack R ²	Chilliwack R	Smolts	1,200,000	1,267,173	1,400,000	1,614,524

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release ¹	Egg Target	Eggs Attained
Conuma R	fall	Conuma R ²	Conuma R	Fed fry	52,000	47,990	140,000	257,385
	fall	Conuma R ²	Conuma R	Smolts		89,072		
Inch Cr	fall	Inch Cr ²	Inch Cr	Smolts	150,000	166,962	200,000	275,000
	fall	Norrish Cr ²	Norrish Cr	Smolts	150,000	172,470	200,000	116,381
	fall	Stave R ²	Stave R	Smolts	225,000	218,741	275,000	271,762
Nitinat R	fall	Nitinat R ²	Nitinat R	Smolts	100,000	119,789	300,000	666,613
	fall	Nitinat R ²	Darlington Lk	Fed Spr	25,000	25,750		
	fall	Nitinat R ²	Flora Lk	Fed Spr	25,000	25,750		
	fall	Nitinat R ²	Francis L/SWVI	Fed Spr	50,000	51,620		
Puntledge R	fall	Puntledge R ²	Puntledge R	Fed Spr	200,000	426,773	2,000,000	2,101,779
	fall	Puntledge R	Puntledge R	Smolts	600,000	0		
Quinsam R	fall	Quinsam R ²	Quinsam R	Smolts	800,000	868,163	1,100,000	1,350,978
	fall	Quinsam R	Quinsam R	Fed Spr	100,000	104,149		
	fall	Quinsam R	Quinsam R	Egg Plnt		268,999		
Robertson Cr	fall	Robertson Cr ²	Robertson Cr	Smolts	400,000	405,000	475,000	518,730
Shuswap R	fall	Duteau Cr	Duteau Cr	Fed Spr	60,000	18,460	74,000	54,000
	fall	Duteau Cr	Duteau Cr	Smolts		20,300		
Spilus Cr	fall	Coldwater R	Coldwater R	Fed Spr	20,000	3,626	150,000	136,258
	fall	Coldwater R	Coldwater R	Smolts	70,000	55,267		
	fall	Deadman R	Deadman R	Smolts	30,000	27,833	40,000	41,656
	fall	Deadman R	Deadman R	Fed Spr		16,484		
	fall	Salmon R/TOMF	Salmon R/TOMF	Smolts	70,000	66,073	170,000	7,200
	fall	Salmon R/TOMF	Salmon R/TOMF	Fed Spr	60,000	104,296		
Tenderfoot Cr	fall	Cheakamus R ²	Cheakamus R	Fed Spr	90,000	35,567	100,000	192,285
	fall	Cheakamus R ²	Cheakamus R	Egg Plant		3,368		
	fall	Cheakamus R ²	Cheakamus R	Smolts		72,206		
	fall	Mamquam ²	Mamquam R	Smolts	45,000	52,364	50,000	118,400
	fall	Mamquam ²	Mamquam R	Unfed		2,196		
	fall	Tenderfoot ²	Tenderfoot Cr	Smolts	130,000	129,576	160,000	336,668
	fall	Tenderfoot ²	Tenderfoot Cr	Unfed		63,496		

¹ Smolts to be released in 2010 are listed as number of fry on hand.

² Some or all are mass marked with an adipose clip for Mark Selective Fishery opportunities.

**Table 22(b): Production of Coho –
Community Economic Development Projects & Designated Public Involvement Projects**

2008 Brood	2009 Brood
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Project	Run	Stock	Release Site	Stage	Release Target	Actual Release ¹	Egg Target	Eggs Attained
Alouette R	fall	Alouette R S ²	Alouette R S	Smolts	80,000	66,000	270,000	23,700
		Alouette R S ²	Alouette R S	Fed Spr	100,000	97,000		
Chapman Cr	fall	Chapman Cr ²	Chapman Cr	Smolts	80,000	50,000	110,000	217,600
	fall	Chapman Cr ²	Halfmoon Bay	Seapen		20,000		
Fanny Bay / GSVI	fall	Coal Cr	Coal Cr	Smolts	16,875	14,921	0	0
	fall	Cook Cr	Cook Cr	Smolts	6,750	0	0	0
	fall	Rosewall Cr ²	Rosewall Cr	Smolts	67,500	12,137	100,000	74,000
Gillard Pass	fall	Quinsam R	Ito Cr	Fed Spr	20,000	25,000	25,000	0
Goldstream R	fall	Goldstream R ²	Goldstream R	Smolts	90,000	43,347	100,000	180,000
Gwa'ni	fall	Nimpkish R Low	Pink Cr	Fed Spr	85,000	20,969	100,000	291,108
	fall	Woss R	Woss R	Fed Spr		25,000		
	fall	Woss R	Sebalhall R	Fed Spr		25,000		
	fall	Woss R	Nimpkish R Up	Fed Spr		23,433		
Halalt Band	fall	Bonsall Cr	Bonsall Cr	Fed Spr	45,000	0	50,000	5,000
Kanaka Cr	fall	Kanaka Cr ²	Kanaka Cr	Smolts	50,000	75,000	200,000	27,000
	fall	Kanaka Cr	Kanaka Cr	Fed Spr	80,000	5,000		
L Campbell R	fall	L Campbell R ²	L Campbell R	Smolts	30,000	44,315	75,000	83,500
	fall	L Campbell R ²	L Campbell R	Fed Spr	24,300	19,230		
Little R / GSVI	fall	Little R / GSVI ²	Little R / GSVI	Smolts	30,000	22,000	50,000	72,000
	fall	Little R / GSVI ²	Little R / GSVI	Fed Spr	15,000	30,000		
Nanaimo R	fall	Nanaimo R	Nanaimo R	Fed Spr	50,000	25,154	260,000	255,644
	fall	Nanaimo R	Nanaimo R	Smolts	45,000	47,764		
	fall	Nanaimo R	First L/GSVI	Fed Spr		42,754		
	fall	Nanaimo R	Napoleon Cr	Unfed		13,707		
	fall	Nanaimo R	Napoleon Cr	Fed Fall		34,289		
	fall	Nanaimo R	Second Lk/GSVI	Fed Spr	60,000	42,304		
	fall	Nanaimo	Brannen Lk	Fed Spr		18,146		
	fall	Nanaimo	Millstone R	Fed Spr		14,729		
Nicomekl R	fall	Nicomekl R ²	Nicomekl R	Smolts	50,625	54,522	75,000	116,381
Oyster R	fall	Oyster R	Oyster R	Fed Spr	100,000	131,000	150,000	180,000
	fall	Oyster R	Oyster R	Smolts	40,000	35,000		
P Hardy / Marble	fall	Washlawlis R	Washlawlis R	Fed Spr	70,000	40,423	100,000	0
	fall	Washlawlis R	Washlawlis R	Unfed		2,757		
	fall	Marble R	Marble R	Fed Spr	162,000	75,258	200,000	85,000
P Hardy/	fall	Cluxewe R	Cluxewe R	Unfed		28,425		162,354

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release ¹	Egg Target	Eggs Attained
Quatse								
	fall	Cluxewe R	Cluxewe R	Fed Spr	45,000	88,200	165,000	
	fall	Cluxewe R ²	Cluxewe R	Smolts	90,000	104,937		
	fall	Quatse R	Quatse Lk	Fed Spr	22,500	36,343	165,000	134,535
	fall	Quatse R	Quatse R	Fed Spr		63,197		
	fall	Quatse R	Quatse R	Smolts		91,730		
	fall	Waukwaas Cr	Waukwaas Cr	Unfed		9,783	150,000	129,016
	fall	Waukwaas Cr	Waukwaas Cr	Fed Spr		39,580		
	fall	Waukwaas Cr	Waukwaas Cr	Smolts		93,554		
Powell R	sum	Lang Cr	Haslam Lk	Fed Spr	200,000	72,886	320,000	370,000
	sum	Lang Cr ²	Haslam Cr	Smolts	80,000	90,005		
	sum	Lang Cr	Anderson/ Lang	Fed Spr		72,886		
	sum	Lang Cr	Blackwater/ GSMN	Fed Spr		72,886		
San Juan R	fall	San Juan R	San Juan R	Fed Spr	175,000	120,000	200,000	350,000
Sechelt	fall	Capilano R	Maclean Bay	Seapen	100,000	100,000		
	fall	Chapman Cr	Maclean Bay	Seapen	100,000	100,000		
Sepentine R	fall	Serpentine R ²	Serpentine R ²	Smolts	64,000	70,410	90,000	146,792
Seymour R/GSMN	fall	Seymour R ²	Hurry Cr	Smolts	75,000	85,750	165,000	160,000
	fall	Seymour R	Seymour R/GSMN	Fed Spr	40,000	69,790		
Sliammon R	fall	Sliammon R	Sliammon R	Fed Spr	50,000	26,821	60,000	31,402
Sooke R	fall	Demamiel Cr	Demamiel Cr	Fed Spr	35,000	35,000	150,000	140,000
	fall	Demamiel Cr	Young Lk	Smolts	80,000			
Thompson R N	fall	Dunn Cr	Dunn Cr	Smolts	20,250	0	30,000	45,999
	fall	Lemieux Cr	Ianson Ch	Smolts	20,250	39,048	30,000	32,000
	fall	Louis Cr	Louis Cr	Smolts	20,250	0	30,000	0
Thornton Cr	fall	Kennedy R Up	Kennedy R Up	Fed Spr	40,000	0	0	0
	fall	Lost Shoe Cr	Lost Shoe Cr	Fed Spr		19,618	0	46,175
	fall	Lost Shoe Cr	Lost Shoe Cr	Unfed		35,130		
	fall	Thornton Cr	Thornton Cr	Smolts	40,000	51,566	60,000	49,650
Tofino	fall	Cypre R	Cypre R	Fed Spr	81,000	90,000	100,000	64,259
	fall	Kootowis Cr	Kootowis Cr	Fed Spr	81,000	43,923	100,000	0
	fall	Tranquil Cr	Tranquil Cr	Fed Spr	60,000	26,821	74,000	0

¹ Smolts to be released in 2010 are listed as number of fry on hand.

² Some or all are mass marked with an adipose clip for Mark Selective Fishery opportunities

Capilano River Hatchery provides Sechelt with 100,000 pre-smolts for Maclean Bay seapen smolt release. The release target is much lower than the egg target to allow for mortalities caused by the common occurrence of softshell parasite on Capilano's coho eggs.

Conuma River Hatchery: the coho program consists of a fed fry release unless community partnership funding is found to rear them to smolt. Some 2008 brood coho were released as fry in 2009, while the rest are being reared for smolt release in 2010.

Inch Creek Hatchery supports community programs on Nicomekl and Serpentine rivers by incubating and rearing their coho to smolt stage. The numbers are now available in Table 15(b). The target for Norrish Creek was doubled for the 2008 brood.

Nitinat River Hatchery collects a greater number of eggs than targeted to allow for expected high incidences of BKD.

Puntledge River Hatchery: all of the 2008 brood fish holding to smolt died over the very warm 2009 summer. Water temperatures in the Puntledge River have been increasing for several years, resulting in increasing mortality on fish holding over the summer. A decision has been made to release all coho as fry for 2009 brood and on.

Shuswap River Hatchery takes Duteau Creek eggs only when the run is poor. The return was low in both 2008 and 2009.

Spilus Creek Hatchery: Salmon River is a stock of conservation concern, however, 2009 escapement to the Interior was high and egg targets were nearly reached.

Tenderfoot Creek Hatchery takes extra eggs for transfer to several small Public Involvement Projects.

Chapman Creek: the number of 2009 eggs attained includes the eggs taken for Sechelt project (100,000).

Fanny Bay will concentrate on Rosewall Creek stock as Coal and Cook creeks are doing fairly well. The Rosewall run was poor in 2008 and the target was not attained.

Gwa'ni Hatchery: 71% of the eggs taken are attributed to the upper Nimpkish River and the balance is attributed to the broodstock that swam into the hatchery channel which is lower Nimpkish River.

Halalt Band: the capture of Bonsall Creek coho is shared by the Halalt Band, other local tribes, Ladysmith Sportsmen and Nanaimo Hatchery. The return to Bonsall Creek was extremely low in 2008 & 2009. As a result, no eggs were taken in 2008 & 2009 resulting in no releases.

Nanaimo River Hatchery takes eggs to allow for a 60K fry release to the Millstone River system (Second Lk & Brannen Lk). 34,289 fry that were meant to be released in May 2010 as smolts were released in September 2009 due to the DFO vet recommendation to release them early because of disease issues.

Port Hardy/Quatse River is doing the Waukwass stock now to allow the Port Hardy/Marble facility more chinook brood holding capacity.

Sechelt River takes eggs from their own returns and receives 100K pre-smolts from Chapman Creek for their seapen project in Maclean Bay.

Thompson River North: only enhanced Lemieux Creek stock in 2008 which were reared at Spilus Creek Hatchery. In 2009, eggs were taken from Lemieux and Dunn Creek stocks.

Thornton Creek only does stocks other than Thornton Creek when needed.

Tofino Hatchery: no eggs were taken from Kootowis Creek or Tranquil Creek due to excellent escapements.

Some other community hatcheries collect broodstock to provide potential opportunities for small hatchery mark-selective fisheries on local streams: Courtenay Fish and Game (Trent River),

Millard Piercy Watershed Stewards and Parksville Fish and Game (French Creek) on Vancouver Island; and Brunette River, Coquitlam River, Mossom Creek and Noons Creek in the Lower Mainland.

9.7.3. Chum

Chum returns for the South Coast and Fraser area were generally lower than average as they have been for a few years now, although a few stocks showed improvement. Chum salmon are mainly produced for fisheries.

Table 23(a): Production of Chum – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Big Qualicum R	fall	Big Qualicum R	Big Qualicum R	Chan Fry	54,000,000	9,049,923	125,000,000	20,310,625
	fall	Big Qualicum R	Big Qualicum R	River Fry				14,953,304
Capilano R	fall	Capilano R	Capilano R	Fed FW	81,000	42,997	100,000	85,194
Chehalis R	fall	Chehalis R	Chehalis R	Fed FW	6,000,000	947,314	6,400,000	2,803,885
	fall	Chehalis R	Chehalis R	Unfed		4,919,030		
Chilliwack R	fall	Chilliwack R	Chilliwack R	Unfed	2,000,000	2,841,421	2,500,000	1,200,310
	fall	Chilliwack R	Atchelitz Cr	Unfed	200,000	207,967		
	fall	Chilliwack R	Luckakuck Cr	Unfed	200,000	206,717		
	fall	Chilliwack R	L Chilliwack R	Unfed	200,000	205,469		
Conuma R	fall	Canton Cr	Canton Cr	Fed FW	1,000,000	418,655	1,200,000	902,320
	fall	Conuma R	Conuma Est	Seapen	1,500,000	1,011,562	2,000,000	1,962,416
	fall	Sucwoa R	Sucwoa R	Fed FW	1,000,000	292,430	1,200,000	583,501
	fall	Tlupana R	Tlupana R	Fed FW	1,000,000	254,905	1,200,000	770,498
Inch Cr	fall	Inch Cr	Inch Cr	Fed FW	800,000	1,016,358	1,200,000	1,180,336
	fall	Inch Cr	Nicomien Sl	Fed FW	200,000	199,752		
L Qualicum R	fall	L Qualicum R	L Qualicum R	Chan Fry	38,000,000	14,774,280	62,000,000	22,386,046
Nitinat R	fall	Nitinat R	Nitinat Lk	Fed FW	10,000,000	7,631,058	37,000,000	6,105,516
	fall	Nitinat R	Nitinat R	Fed FW	23,000,000	0		
	fall	Nitinat R	Klanawa R	Fed FW	3,000,000	0		
Puntledge R	fall	Puntledge R	Puntledge R	Fed FW	2,700,000	1,745,365	3,000,000	3,469,405
Quinsam R ¹	fall	Campbell R	Area Streams	Fed FW		87,955	320,000	279,429
Tenderfoot Cr ¹	fall	Mamquam R	Loggers Lane Cr	Fed FW		19,169		0
	fall	Tenderfoot Cr	Tenderfoot Cr	Fed FW	75,000	199,449	85,000	603,949

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
	fall	Tenderfoot Cr	Loggers Lane Cr	Fed FW		100,000		
	fall	Tenderfoot Cr	Squamish Est	Seapen		102,419		
Weaver Sp Ch	fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry	2,700,000	3,808,013	4,125,000	5,756,936

¹ Hatchery is incubating chum eggs for transfer to volunteer projects

**Table 23(b): Production of Chum –
Community Economic Development Projects & Designated Public Involvement Projects**

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Alouette R ¹	fall	Alouette R S	Alouette R N	Fed FW	216,000	366,481	500,000	887,000
Chapman Cr	fall	Chapman Cr	Chapman Cr	Unfed	200,000	70,000	750,000	510,000
Fanny Bay / GSVI	fall	Rosewall Cr	Rosewall Cr	Fed FW	225,000	215,913	250,000	105,000
Goldstream R	fall	Goldstream R	Goldstream R	Fed FW	75,000	326,942	104,000	135,000
Gwa'ni	fall	Nimkish R Low	Nimkish R Low	Fed FW	1,800,000	1,391,700	2,000,000	2,275,000
Halalt Band	fall	Chemainus R	Westholme Ch	Unfed	425,000	175,000	500,000	72,000
	fall	Bonsall Cr	Bonsall Cr	Unfed	41,000	4,000	45,000	15,000
Kanaka Cr	fall	Kanaka Cr	Byrne Cr	Fed FW	25,000	30,000	250,000	217,000
	fall	Kanaka Cr	Kanaka Cr	Fed FW	150,000	80,600		
	fall	Kanaka Cr	Brunette R	Fed FW		50,000		
	fall	Kanaka Cr	Spanish Banks	Fed FW		40,000		
Nanaimo R	fall	Nanaimo R	Nanaimo R	Unfed	1,062,500	491,482	1,250,000	396,700
Nicomekl R	fall	Chehalis R	Nicomekl R	Unfed	95,000	100,000		
Oyster R	fall	Oyster R	Oyster R	Fed FW	320,000	26,000	350,000	0
P Hardy/Quatse	fall	Quatse R	Quatse R	Fed FW	101,250	110,313	125,000	0
Powell R	fall	Lang Cr	Lang Ch	Fed FW	750,000	650,121	800,000	0
	fall	Lang Cr	Willingdon Cr	Fed FW		70,000		
Sechelt	fall	Maclean Bay	Maclean Bay	Seapen	750,000	48,797	750,000	275,000
Serpentine R	fall	Chehalis R	Serpentine R	Fed FW	150,000	38,000	150,000	
Seymour R/GSMN	fall	Alouette R S	Seymour R/GSMN	Fed FW	400,000	473,798	150,000	117,000
	fall	Alouette R S	Maplewood Cr	Fed FW	20,000	500,798		
Slammon R	fall	Slammon R	Slammon R	Unfed	1,500,000	473,400	3,000,000	1,615,500
	fall	Slammon R	Slammon R	Fed FW	500,000	578,894		

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Thornton Cr	fall	Salmon Cr/SWVI	Salmon Cr/SWVI	Fed FW	500,000	234,173	600,000	625,070
	fall	Mercer Cr	Mercer Cr	Fed FW	50,000	0	60,000	0
	fall	Twin Rivers	Twin Rivers	Fed FW	50,000	0	60,000	0

¹ Hatchery is incubating chum eggs for transfer to volunteer projects

Big Qualicum River Hatchery had very poor adult returns in both 2008 and 2009, resulting in low egg deposition in the channel. Discussions are ongoing on whether to do some as fed fry to boost survival and, if so, how many.

Capilano River Hatchery has not had a directed program to enhance chum, but they have decided to make more effort to obtain eggs and start to build the run back up. A target of 100K eggs was set at a production planning meeting in January, 2010 and will be considered retroactive to 2009 brood.

Chehalis River Hatchery: supplemental funding or assistance is provided in some years by the First Nation to maintain chum production at Chehalis Hatchery to provide an ESSR opportunity. Chehalis provides 100K eggs to Nicomekl Hatchery.

Chilliwack River Hatchery: when the 2008 return came in very low, a decision was made to take more eggs than targeted, resulting in a greater number released than the target in 2009. The 2009 return was very poor and the target could not be attained.

Conuma River Hatchery: fell short of their egg targets in 2008 due to adverse river conditions, low escapement levels and limited resources, resulting in a fewer number of fed fry releases in 2009 than targeted. Returns were low again in 2009.

Inch Creek Hatchery takes extra eggs and transfers 50K fry each to West Slough and Yorkson Creek PIP.

Little Qualicum River experienced poor returns in 2008, adversely affecting the fed fry production in 2009. The 2009 return was very poor.

Nitinat River Hatchery fell short of their release target in 2009 due to poor returns and escapement in 2008. The return was very poor in 2009.

Puntledge River Hatchery takes an extra ~180K eggs for Little River project. This stock continues to do fairly well.

Quinsam River Hatchery takes Campbell River stock for transfer to several small Public Involvement projects.

Tenderfoot Creek Hatchery takes eggs primarily for transfer to Public Involvement projects.

Alouette Hatchery started taking chum eggs for other projects in 2007. They take ~400K for others and about 500K for themselves.

Goldstream Hatchery takes extra eggs for transplants to several small creeks around the Victoria area and on the San Juan Islands.

Nanaimo River: the number of brood eggs attained for Nanaimo River stock includes regular production and eggs taken for the Gently Down the Stream program.

Powell River also transfers 100K eyed eggs to a PIP group on Texada Island.

Sechelt Hatchery is experiencing water and other infrastructure problems. Enhancement projects will be satellited from Chapman Creek for the near future. They took eggs from MacLean Bay returns in 2008 and 2009.

Seymour River Hatchery: chum targets vary. In odd years it is lower to allow for production of pinks. They are now obtaining broodstock from Alouette River rather than Indian River.

Sliammon River: returns have been low for several years and they could not reach their egg target in 2008, resulting in releases lower than targeted in 2009. The 2009 return was quite low, so the target was not attained.

9.7.4. Pink

Pink returns to the east coast of Vancouver Island were extremely high in 2009, so Quinsam Hatchery was able to obtain all the eggs needed for themselves and other projects. There is no even-year pink run in the Fraser.

Table 24(a): Production of Pinks – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Big Qualicum	fall	Big Qualicum	Big Qualicum	Unfed	67,500	0	0	0
Capilano R	fall	Capilano R	Capilano R	Unfed				120,694
Chehalis R ¹	fall	Chehalis R	Harrison R	Unfed		0	1,700,000	733,620
	fall	Weaver Sp Ch		Unfed				2,463,490
Chilliwack R ¹	fall	Chilliwack R	Chilliwack R	Unfed		0	0	1,785,343
Puntledge R	fall	Quinsam R	Puntledge R	Unfed	2,400,000	2,101,761		
Quinsam R	fall	Quinsam R	Quinsam R	Unfed	5,400,000	5,290,993	6,800,000	14,132,680
	fall	Quinsam R	Discovery Pass	Seapen	1,000,000	999,917		
	fall	Quinsam R	Campbell R	Egg Plant		418,708		
	fall	Quinsam R	Elk Falls Ch 2	Egg Plant		49,716		
Tenderfoot Cr ¹	fall	Cheakamus R	Cheakamus R	Unfed		0	0	1,213,491
	fall	Mamquam R	Gorbuscha Ch	Egg Plant		0		
	fall	Mamquam R	Cheakamus R	Unfed		0		
Weaver Sp Ch ¹	fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry		0	0	5,955,842

¹ Pinks are present on the Fraser River during odd years only

Table 24(b): Production of Pinks – Community Economic Development Projects & Designated Public Involvement Projects

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Chapman Cr	fall	Chapman Cr	Chapman Cr	Unfed	250,000	0	400,000	793,857
	fall	Chapman Cr	Gibsons	Seapen	100,000	0		
Cowichan R	fall	Quinsam R	Cowichan Bay	Seapen	200,000	160,000		

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Englishman Enh	fall	Quinsam R	Englishman Enh	Unfed	1,000,000	950,000		
Fanny Bay	fall	Quinsam R	Coal Cr	Unfed	1,000,000	986,143		
Kanaka Cr ¹	fall	Harrison R	Kanaka Cr	Unfed	0	0		
Nanaimo R	fall	Nanaimo R					1,000,000	1,229,020
	fall	Quinsam R	Brandon Is	Seapen	1,000,000	400,255		
	fall	Quinsam R	Jack Pt	Seapen		405,082		
	fall	Quinsam R	Nanaimo R	Unfed		54,393		
	fall	Quinsam R	Newcastle Is	Seapen		203,346		
Nile Cr	fall	Quinsam R	Deep Bay	Seapen	450,000	200,000		
		Quinsam R	Nile Cr	Unfed	1,000,000	1,250,000		
Oyster R	fall	Oyster R	Oyster R	Unfed	900,000	213,000	2,500,000	700,000
P Hardy/ Quatse	fall	Cluxewe R	Cluxewe R	Unfed	800,000	0	1,000,000	923,075
	fall	Quatse R	Quatse R	Unfed	1,350,000	726,984	1,500,000	
Sechelt	fall	Chapman Cr	Maclean Bay	Seapen	300,000	0		
Seymour R/GSMN ¹	fall	Chilliwack R	Seymour R/GSMN	Unfed	0	0	0	
Tsolum R	fall	Quinsam R	Tsolum R	Unfed	1,000,000	950,000		

¹ Pinks are present on the Fraser River during odd years only

Big Qualicum River Hatchery usually takes eggs for Nile Creek, Deep Bay sea pen, however, Quinsam was able to provide Nile Creek with enough eggs this year.

Chilliwack River Hatchery provides eggs to Seymour (2009 brood: 1,695,425).

Chehalis River Hatchery has a target of up to 1.7M eggs for other lower Fraser River projects from Weaver Spawning Channel and Chehalis River (Harrison River system), in odd years only. In 2009, the returns were very good to most Lower Fraser tributaries, so fewer eggs were taken as they weren't needed for several projects.

Puntledge River Hatchery acquires eggs from Quinsam River Hatchery. Returns of previous transfers were left to spawn naturally in the Puntledge River.

Quinsam River Hatchery provides eggs for many smaller projects (1M to Englishman Enhancement, 1M to Fanny Bay, 1.25M to Nile Creek and 1M to Tsolum River).

Chapman Creek: beginning in 2007, a sea pen at Gibson's Landing was added to increase returns for a sport fishery. In 2008, no eggs were taken due to low water levels in the creek, preventing return of adults. As a result, there were no 2009 pink releases. Eggs were taken in 2009 for the Gibson's sea pen and for transfer to Sechelt Hatchery.

Cowichan River began a pink sea pen project in 2007, using Quinsam River stock.

Kanaka Creek obtains pink eggs (Harrison River system) from Chehalis Hatchery in odd years only. There was a fairly good return to Kanaka Cr in 2009.

Nanaimo River Hatchery started taking Nanaimo Creek broodstock as the stock rebuilds. Few broodstock were obtained in 2008 due to a low return (~59k eggs taken), so the remaining balance was obtained from Quinsam (~1M). Eggs are reared in bulk incubators, therefore the stocks are not kept separate, and so all releases are listed in the above table as Quinsam stock. 2009 was the first large return of pinks, so only Nanaimo Creek stock was used.

Oyster River had a poor return of even year pinks, therefore the number of pinks released in 2009 were below target. The target for 2009 brood was increased in an attempt to increase the numbers back to the river.

Port Hardy/Quatse was unable to obtain any 2008 brood eggs from the Cluxewe River stock due to a poor return of adults, therefore no Cluxewe pinks were released in 2009.

Sechelt River: no eggs were taken from Chapman Creek in 2008 due to low escapement, therefore no pinks were released in 2009. 2009 eggs were taken and are incubated and reared at Chapman Creek Hatchery.

Seymour River Hatchery will receive 2009 brood eggs from Chilliwack Hatchery.

9.7.5. Sockeye

Sockeye production continued to focus efforts on maintaining production supporting stock conservation and sustainable fisheries. Sockeye returns to the Fraser River were lower than expected in both 2008 and 2009.

Table 25(a) :Production of Sockeye – DFO Enhancement facilities

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Gates Sp Ch	sum	Gates R	Gates R	Chan Fry	4,500,000	1,650,000	9,000,000	no estimate generated
Horsefly Sp Ch	sum	Horsefly Ch	Horsefly Ch	Chan Fry	17,500,000	program not operated	35,000,000	11,100,000
Inch Sat ²	sum	Pitt R Up	Pitt R Up	Fed Spr	2,000,000	1,620,609	2,500,000	2,233,412
	fall	Cultus Lk	Cultus Lk ¹	Smolts	50,000	56,996	1,000,000	868,200
	fall	Cultus Lk	Cultus Lk	Fed Spr	550,000	820,096		
	fall	Cultus Lk	Cultus Lk	Fed Fall	150,000	0		
Nadina Sp Ch	sum	Nadina R	Nadina R	Chan Fry	3,500,000	5,100,000	7,000,000	4,500,000
Shuswap R	sum	Adams R Up	Adams R Up	Fed Spr		0	0	0
	sum	Okanagan L	Okanagan L	Fed Spr	1,450,000	1,614,600	1,000,000	1,355,700
Weaver Sp Ch	fall	Weaver Sp Ch	Weaver Sp Ch	Chan Fry	46,800,000	1,396,451	65,000,000	44,567,012

¹ Smolts to be released in 2010 are listed as number of fry on hand

² With an additional 75,600 unfed released from Alvin Patterson Channel.

Table 25(b): Production of Sockeye – Community Economic Development Projects & Designated Public Involvement Projects

Project	Run	Stock	Release Site	Stage	2008 Brood		2009 Brood	
					Release Target	Actual Release	Egg Target	Eggs Attained
Gwa'ni	fall	Sebalhall Cr	Vernon Lk	Unfed	400,000	217,424	500,000	0
	fall	Woss R	Woss Lk	Unfed	800,000	470,866	1,000,000	521,673
Sakinaw L	fall	Sakinaw Lk	Sakinaw Lk	Fed Spr	720,000	727,376	800,000	430,000

Gates Creek Spawning Channel: the egg deposition in 2008 was low due to low escapement, resulting in a lower release in 2009 than targeted.

Horsefly Spawning Channel was not operated in 2008, but is being operated in 2009.

Inch Creek Sockeye Satellite: the 2009 brood egg take number for Inch Sockeye Satellite, Cultus Lake stock, is a preliminary estimate.

Nadina Spawning Channel: 2009 brood was not a dominant year, therefore the egg target was adjusted accordingly (from 30,000,000 to 7,000,000).

Shuswap Hatchery: the Upper River Adams stock was expected to have very low escapements in 2008, therefore no eggtakes were planned. As a result, there were no Upper Adams River releases in 2009. A production planning meeting held in Fall 2009, determined that further attempts to take broodstock should be abandoned.

Weaver Creek Spawning Channel experienced approximately 30% pre-spawn mortality in 2008, along with low escapement, so the channel was well short of its egg target, adversely affecting the number of 2009 releases. In 2009, the return was low, but the pre-spawn mortality was much lower than in 2008.

Gw'ani did not take any Sebalhall Creek/Vernon Lake stock in 2009.

Sakinaw Lake had extremely low adult returns in both 2008 and 2009, with no brood stock collected. Captives from several broods are currently holding at Rosewall Creek facility. Eggs were taken in 2008 and 2009 from captive brood stock.

Appendix 1: Advisory Board Memberships

Meeting dates and records of consultation can be found at:

<http://www.pac.dfo-mpo.gc.ca/consultation/fisheries-peche/smon/ihpc-cpip/index-eng.htm>

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Appendix 2: Fishing Vessel Safety

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

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

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

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

Education and Training Programs

Marine Emergency Duties

Fish Safe Stability Education

First Aid

Radio Operators Course

Fishing Masters Certificates

Small Vessel Operators Certificate

Publications:

- Transport Canada Publication TP 10038 '*Small Fishing Vessel Safety Manual*' (can be obtained at Transport Canada Offices from their website at www.tc.gc.ca/MarineSafety/Tp/Tp10038/tp10038e.htm),
- Gearing Up for Safety – WorkSafeBC
- Safe At Sea DVD Series – Fish Safe
- Stability Handbook – Fish Safe and Measuring Stability –DVD

For further information see: <http://www.tc.gc.ca/marine/menu.htm>

Important Priorities for Vessel Safety

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

1.1. Fishing Vessel Stability

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

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

1.2. Emergency Drill Requirements

The master must establish procedures and assign responsibilities to each crew member for emergencies such as crew member overboard, fire, flooding, abandoning ship and calling for help.

The Crewing Regulation under the Canada Shipping Act (CSA) states that as of July 30th, 2002 all seafarers, including fish harvesters, must have a Basic Safety Certificate (MED A1 or A3 depending upon vessel and operating waters) within 6 months of becoming a crewmember, regardless of time at sea. The MED A1 is a three day course, and must be taken by all crew regardless of duty station.

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

1.3. Cold Water Immersion

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

1.4. Other Issues

1.4.1. 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

1.4.2. Emergency Radio Procedures

Vessel owners and masters should ensure that all crew are able to activate the Search and Rescue (SAR) system early rather than later by contacting the Canadian Coast Guard (CCG). It is

strongly recommended that all fish harvesters carry a registered 406 MHz Emergency Position Indicating Radio Beacon (EPIRB). These beacons should be registered with the National Search and Rescue secretariat. When activated, an EPIRB transmits a distress call that is picked up or relayed by satellites and transmitted via land earth stations to the Joint Rescue Co-ordination Centre (JRCC), which will task and co-ordinate rescue resources.

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

Since August 1, 2003 all commercial vessels greater than 20 metres in length are required to carry a Class D VHF Digital Selective Calling (DSC) radio. A registered DSC VHF radio has the capability to alert other DSC equipped vessels in your immediate area and MCTS that your vessel is in distress. Masters should be aware that they should register their DSC radios with Industry Canada to obtain a Marine Mobile Services Identity (MMSI) number or the automatic distress calling feature of the radio may not work. For further information see the Industry Canada site at: http://www.ic.gc.ca/eic/site/ic1.nsf/eng/h_00014.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 Vancouver, Victoria, Prince Rupert, Comox and Tofino) or from the Coast Guard website:

<http://www.ccg-gcc.gc.ca/Pacific>

1.4.3. Collision Regulations

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

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

Exceptions include:

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

More detailed information on VTS can be obtained by calling (604) 775-8862 or from Coast Guard website:

<http://www.ccg-gcc.gc.ca/e0003901>

1.4.4. Buddy System

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

2. WORKSAFE BC

Commercial fishing is legislated by the requirements for diving, fishing and other marine operations found in Part 24 of the Occupational Health and Safety Regulation (OHSR). Many general hazard sections of the OHSR also apply. For example, Part 8: Personal Protective Clothing and Equipment addresses issues related to safety headgear, safety foot wear and personal floatation devices. Part 15 addresses issues on rigging, Part 5 addresses issues of exposure to chemical and biological substances, and Part 3 addresses training of young and new workers, first aid, and accident investigation issues. Part 3 of the Workers Compensation Act (WCA) defines the roles and responsibilities of owners, employers, supervisors and workers. The OHSR and the WCA are available from the Provincial Crown Printers or by visiting the WorkSafeBC website:

www.worksafebc.com

For further information, contact an Occupational Safety Officer (Shane Neifer, Terrace, (250) 615-6640), Bruce Logan (604) 244-6477 (Lower Mainland), David Clarabut (250) 881-7563 (Victoria), Pat Olsen (250) 334-8777 and Mark Lunny, (250) 334-8732 (Courtney) or the Focus Sector Manager for fishing Mark Peebles, (604) 279-7563.

For information on projects related to commercial fishing contact Ellen Hanson (604) 233-4008 or Toll Free 1-888 621-7233 ext. 4008 or by email: Ellen.Hanson@worksafebc.com.

3. FISH SAFE

Fish Safe is coordinated by Gina Johansen and directed by the Fish Safe Advisory Committee (membership is open to all interested in improving safety on board). The advisory committee meets quarterly to discuss safety issues and give direction to Fish Safe in the development of education and tools for fish harvesters.

Vessel masters and crew are encouraged to become more knowledgeable regarding vessel stability. FishSafe BC developed the Fish Safe Stability Education Course, which is available to all fish harvesters who want to improve their understanding of stability and find practical application to their vessel's operation.

Fish Safe also works closely with WorkSafeBC to improve the fishing claims process. For further information:

Gina Johansen, Safety Coordinator
Fish Safe
2-11771 Horseshoe Way
Richmond, BC V7A 4V4

Phone: 604-261-9700
Email: fishsafe@telus.net
Website: www.fishsafebc.com

Appendix 3: Rockfish Conservation Areas

A total of 164 Rockfish Conservation Areas (RCAs) have been implemented coastwide. With the onset of the Rockfish Conservation Strategy, the Department announced that it would create closed areas that encompassed up to 50% of the rockfish habitat within the Strait of Georgia and up to 20% on the West Coast of Vancouver Island, Central Coast, North Coast and the Queen Charlotte Islands.

Beginning in September 2005, Fisheries and Oceans Canada carried out further consultation to identify potential rockfish conservation areas within the Strait of Georgia. Additional RCAs have now been established within the Strait of Georgia. Upon completion of the closed area component of the strategy, 20% of outside rockfish habitat will have been described as RCA's. The goal for the Strait of Georgia is 30%.

Descriptions including maps of the RCAs can be found online at:

<http://www-comm.pac.dfo->

mpo.gc.ca/pages/consultations/fisheriesmgmt/rockfish/default_e.htm

or check with your local Fisheries and Oceans Canada office for more information.

Permitted Fishing Activity in Rockfish Conservation Areas

The following fishing activities **will be permitted** in RCAs:

RECREATIONAL	COMMERCIAL
Invertebrates by hand picking or dive Crab by trap Prawn by trap Smelt by gillnet	Invertebrates by hand picking or dive Crab by trap Prawn by trap Scallops by trawl Salmon by seine or gillnet Herring by gillnet, seine and spawn-on-kelp Sardine by gillnet, seine and trap Smelt by gillnet Euphausid (krill) by mid-water trawl Opal Squid by seine Groundfish by mid-water trawl

Recreational and commercial fishing activities not listed in the tables above are *not* permitted.

First Nations are encouraged to employ fishing methods or fish in locations to avoid the harvest of inshore rockfish. First Nations fishing for food, social and ceremonial purposes is permitted in RCAs.

Appendix 4: 2010 Pacific Salmon Allocation Implementation Plan

This document describes anticipated licence area allocations for each gear type and for each species of salmon. These anticipated licence area allocations are intended to guide fishing arrangements at the local level and are not fixed entitlements. Application of these sharing arrangements is subject to meeting all conservation objectives, First Nations obligations, international commitments, deliverability and manageability constraints and other management considerations including all conservation measures currently in effect. Where appropriate the potential harvest identified is a range that reflects the most recent approved forecasts for each stock grouping. In other cases, the potential harvest represents the informed point estimate of fisheries managers based upon historic average return rates and available PSARC approved analysis.

Although best efforts will be made to achieve these coast-wide allocation targets, no guarantees are offered that target allocations will actually be achieved in any given year. The achievement of these targets will depend upon the ability to fish selectively and the conservation needs of the resource. In the event that target allocations are not achieved, no compensatory adjustments will be made to future allocations. Specifically, as in 2009, “catch up/make up” adjustments to future target allocations will not be considered in the event that a gear type does not meet its target allocation.

The following specific operational guidelines for 2010 are noted:

- Individual licence holders and groups of licence holders will not be permitted to make their own allocation transfer arrangements unless agreed to by DFO under Demonstration Fisheries arrangements.
- As in recent years, there will be no directed commercial fisheries for Fraser River sockeye or Fraser River pink salmon in the north (i.e. area licence categories A, C and F).
- Harvest from assessment fisheries intended to obtain information that will benefit a specific fleet will be considered part of the allocation of the fleet conducting the exploratory fishery.
- The target allocations for gill net D and gill net E area licences will attempt to equalize the relative average catch per licence in sockeye equivalents.
- The target allocations for troll G and troll H area licences will attempt to equalize the relative average catch per licence in sockeye equivalents.
- If after spawning escapement objectives are met, and despite best efforts, it becomes apparent that an area licence group is unable to achieve its target allocation, subject to conservation requirements, uncaught balances will be given first to the same gear type in a different licence area and, second to different gear types in a manner that reflects their relative target allocations.

It is noted that these are not fixed entitlements but are a projection of available fishing opportunities given present forecasts of stock abundance and best efforts to achieve coast-wide target allocations by gear type. These represent the intentions of fisheries management if abundance is as expected and all other things are equal. However, in

many cases in-season adjustments will be necessary to address conservation concerns or other unforeseen events.

1. NORTH COAST

1.1. North Coast Sockeye

Areas	Potential Harvest (Pieces)	Seine A	Gill Net C	Troll F
1, 3 to 5, 101 to 105	350K	25%	74.8%	0.2%
6 to 10	-	25%	75%	0%

1.2. North Coast Pink

Areas	Potential Harvest (pieces)	Seine A	Gill Net C	Troll F
1 to 5, and 101 to 105	500K	80%	18%	2%
6 to 10	10K	90%	10%	0%

1.3. North Coast Chum

Areas	Potential Harvest (pieces)	Seine A	Gill Net C	Troll F
1,2,101 to 111,130,142	-	55%	45%	0%
3 to 5	-	0%	100%	0%
6 to 10	100K	55%	45%	0%

Notes on chum allocations:

- Catch shares in Areas 6 to 10 have been highly variable in recent years and depends on amount of gear fishing.

1.4. North Coast Coho

Areas	Potential Harvest (Pieces)	Seine A	Gill Net C	Troll F
1 to 10, 101, 102, 105-107, 130, 142	100K	20%	5%	75%

Notes on coho allocations:

- There will be opportunities for directed coho harvest in troll fisheries on the north coast of B.C. Non-retention of coho in net fisheries for Skeena salmon is planned.

1.5. North Coast Chinook

Areas	Potential Harvest (Pieces)	Seine A	Gill Net C	Troll F
1 to 5,101, 102, 130, 142	100K	0%	4.2%	95.8%
6 to 10	5K	0%	99%	1%

Notes on chinook allocations:

- There are no directed chinook fisheries on the north coast of B.C. for the seine fleet. Directed gill net fisheries occur in Areas 4 and 8 and there is some by-catch in other north coast fisheries.
- Areas 1-5 troll, the TAC is determined by the PST chinook model. The PST allocation for the Area F troll fleet is preliminarily set at 100K. However, due to conservation concerns for other stocks the expected harvest may be less than this level.

2. SOUTH COAST

2.1. South Coast Sockeye

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
Area 23	90K	60%	40%		0%	
Fraser River Sockeye	1.75 M	48.5%	21.5%	25%	0%	5%

Notes on sockeye allocations:

- Fraser River sockeye: Based on pre-season information, the potential commercial harvest of Fraser River sockeye has a range of 750K to 2.5M. However, protective measures will be implemented to address uncertainty about returns, environmental conditions as well as conservation concerns for Sakinaw Lake, Cultus Lake and Late Run sockeye. These factors could substantially reduce opportunities to harvest the full TAC. The Fraser River sockeye TAC will be established based on in-season information
- Barkley sockeye: The current estimate of potential harvest is based on a pre-season estimate of a 600K return. Sockeye abundance will be reforecast in-season and as a result actual catch available could change.

2.2. South Coast Pink

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
Fraser River	0	70%	4%	6.5%	6.5%	13%
Mainland Inlets (A12)	0	73%	9%	0%	0%	18%

Notes on pink allocations:

- This is an off cycle for Fraser pinks there no harvest anticipated.
- No surplus is expected for Mainland Pinks therefore no directed fishery anticipated.

2.3. South Coast Chum

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 19, 28 to 29	605K	63%	19%	12%	0%	6%
21 to 22	0K	70%		29%	1%	
23 to 27	0K	0%	98%	0%	2%	0%

Notes on chum allocations:

- 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. Anticipated catch in Johnstone Strait is approximately 500K with an additional 105K estimated in the terminal areas.
- For Fraser River chum, harvest opportunities will be constrained by conservation concerns for Interior Fraser River steelhead.

2.4. South Coast Coho

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 20, 29	0K	55%	15%	15%	0%	15%
21 to 27, 121, 123 to 127	0.5K	0%	0%	0%	100%	0%

Notes on coho allocations:

- Inside coho - no coho retention fisheries planned.

- WCVI coho - It is anticipated that retention of adipose clipped coho will be permitted in offshore troll fisheries in the latter half of September.

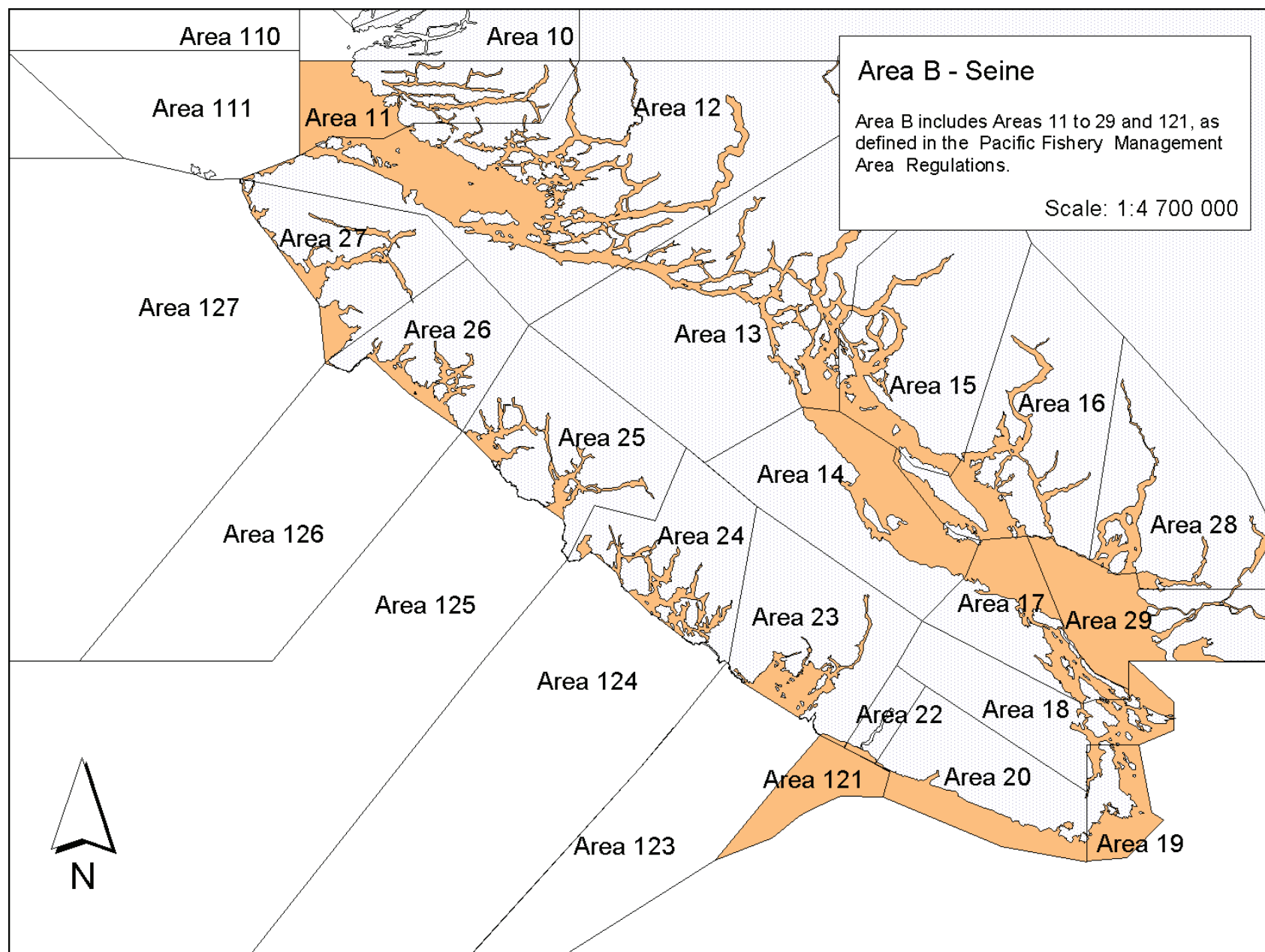
2.5. South Coast Chinook

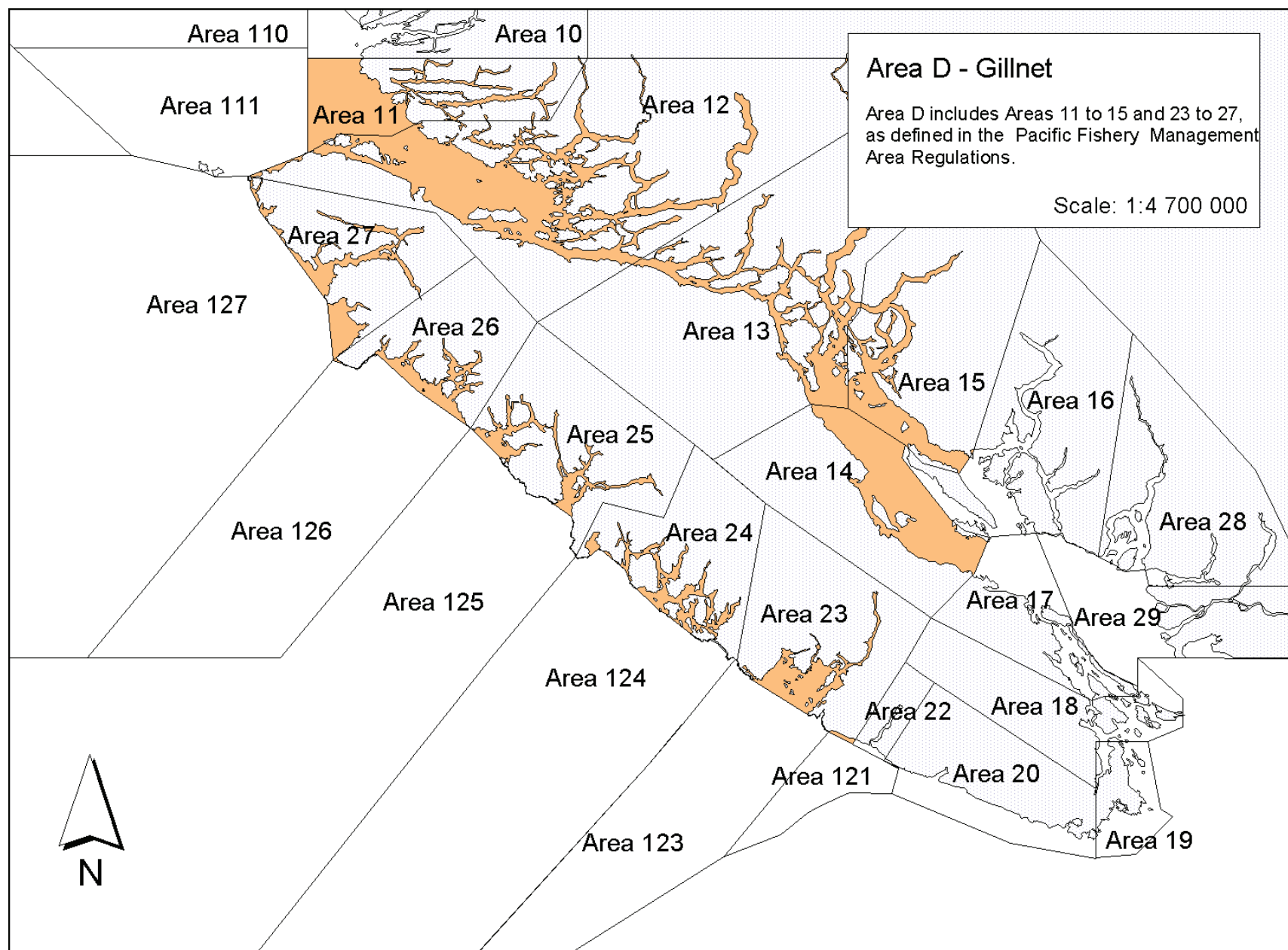
Areas	Harvest Forecast (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 20, 29	3K	0%	0%	100 %	0%	0%
21 to 27, 121 to 127	83.7K	0%	0%	0%	100%	0%

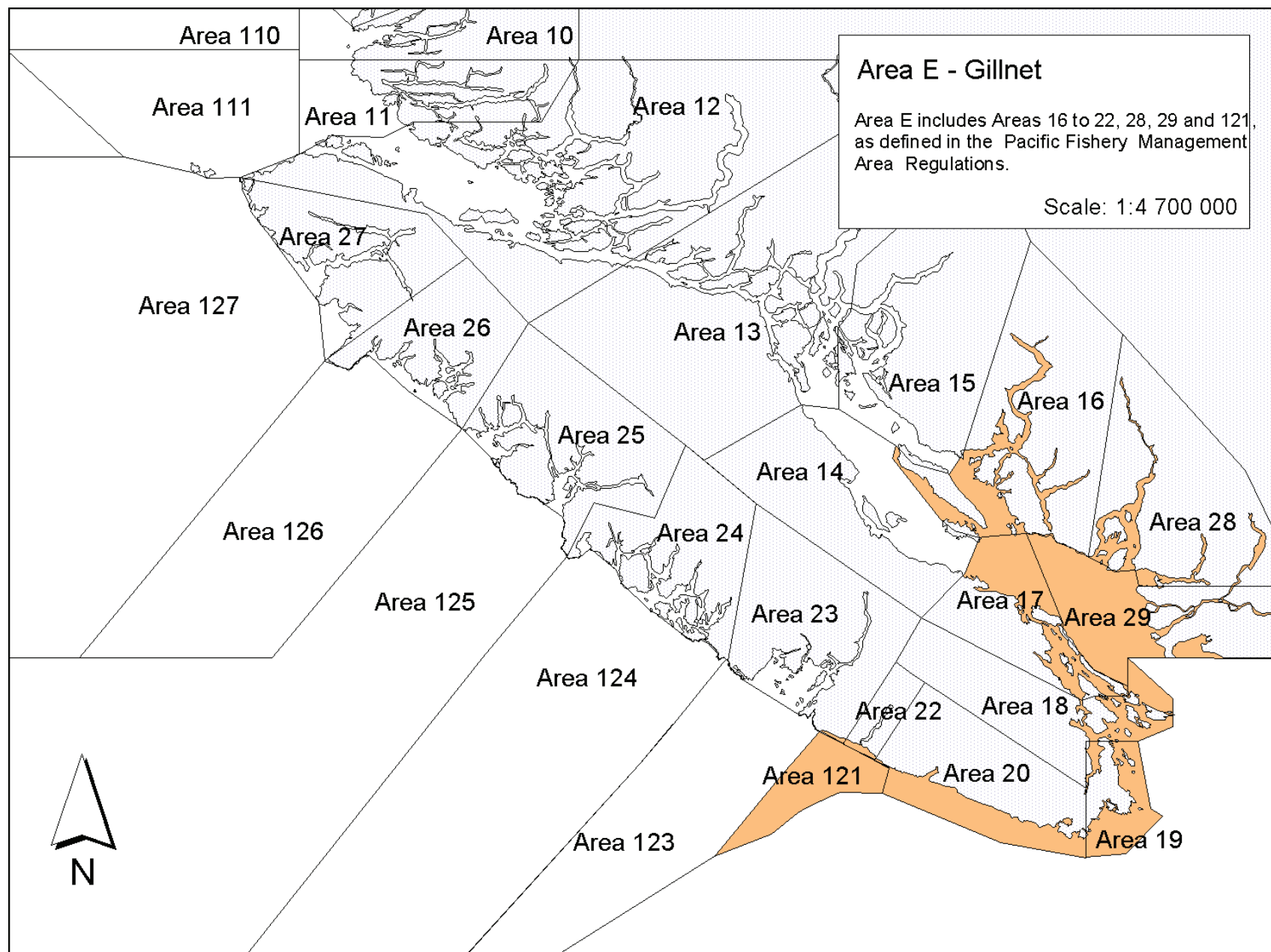
Notes on chinook allocations:

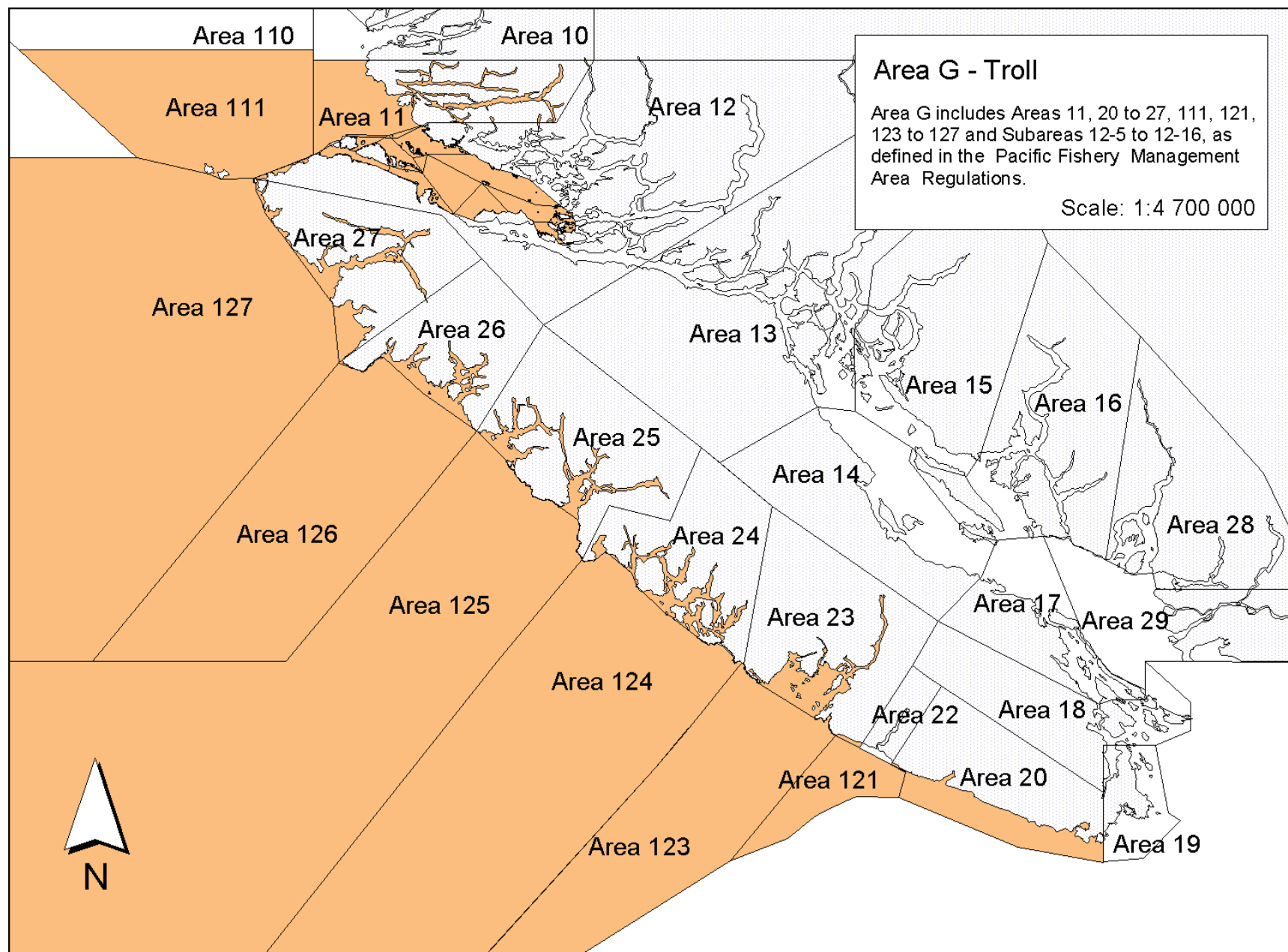
- Inside chinook - chinook by-catch during Area E sockeye directed fisheries in Area 29. Discussions are also occurring about a possible Chinook demonstration fishery in area 29.
- AABM Chinook - A troll catch of 83.7K is estimated. The commercial target may be adjusted in-season if observed First Nation and recreational catches differ from anticipated levels.

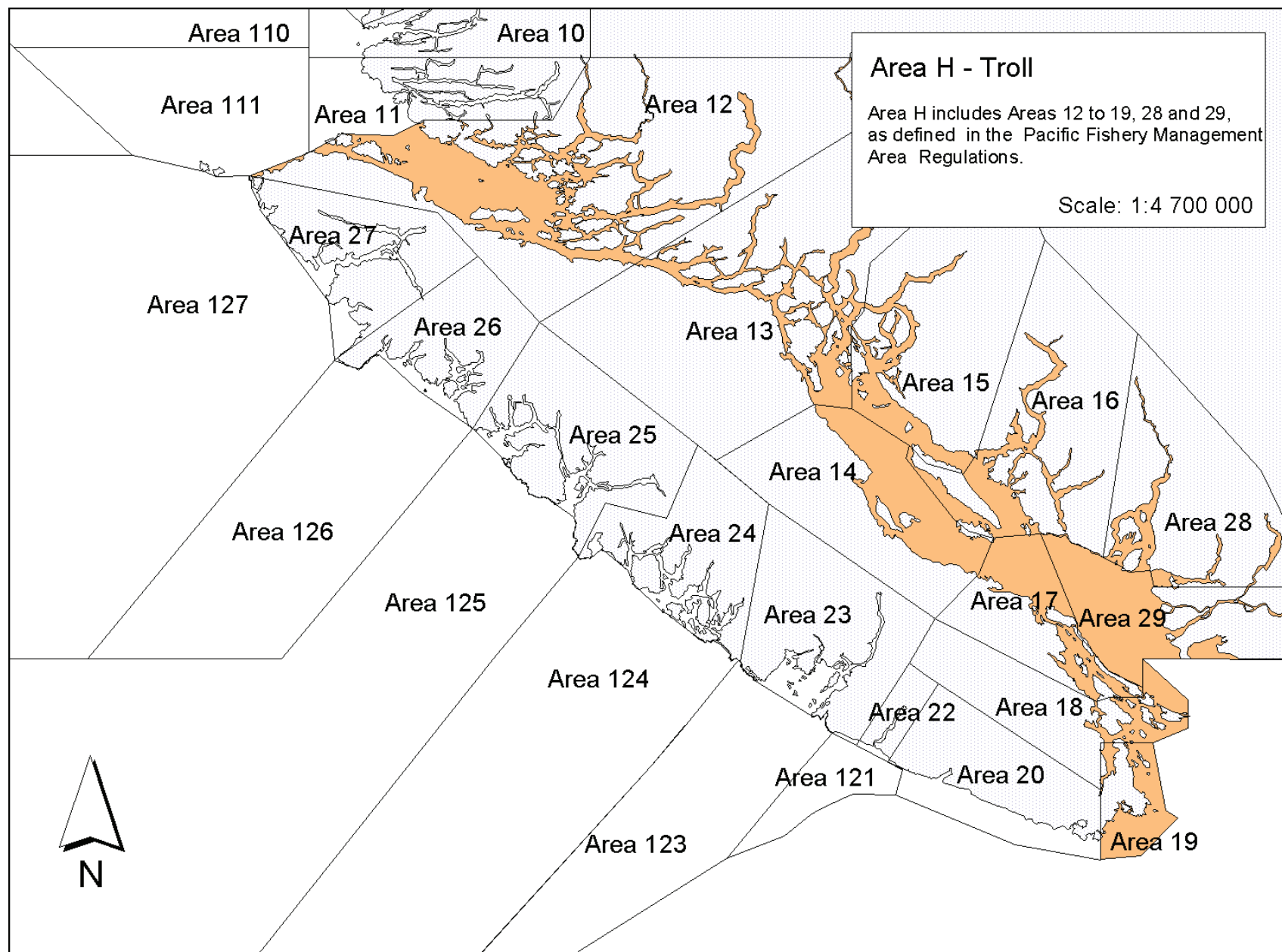
Appendix 5: Maps of Commercial Salmon Licence Areas











Appendix 6: Tidal Salmon Sport Fishing Guidelines

SOUTH COAST WATERS - AREAS 11 TO 29, 121 AND 123 TO 127

1. The management measures for 2010 WCVI Chinook inside the management corridor identified as 2 under 77 are the same as for 2009.
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. Unless otherwise specified in the table below, the daily limit for chinook is 2 per day and all retained chinook must measure 45 cm or more from tip of nose to tail fork. All coho, sockeye, pink and chum must measure 30 cm or more.
4. A barbless hook is in effect year-round.
5. There is an annual limit of 30 adult Chinook, in the aggregate, from any tidal waters, of which at most, 10 may be caught in the tidal waters of the Fraser River, 15 may be caught in the waters of Areas 12 to 18, 28 and 29 and that portion of Area 19 north of Cadboro Point, and 20 may be caught in the waters of Area 20 and that portion of Area 19 south of Cadboro Point. For the remainder of the West coast of Vancouver Island (that portion of Area 20 West of Sheringham Point to Area 27, 121 to 127) and Areas 1 to 11, 101 to 111, 130, and 142 the annual aggregate limit is 30 chinook.
6. Coho non retention is in effect in all areas from Jan 01-May 31. For those areas where the daily limit is specified for coho at 2 or 4 per day, you may retain both hatchery marked coho and unmarked coho. In all other areas you may retain 2 hatchery marked coho per day from Jun 01-Dec 31. A hatchery marked fish is defined as one which has a healed scar in place of the adipose fin.
7. All Area/Subarea descriptions provided in square brackets are approximations. For more exact information, please see the *Pacific Fishery Management Area Regulations, 2007*.
8. Rockfish Conservation Areas (RCA's) are currently in effect throughout the south coast. These areas are closed to all finfish fishing. Descriptions of these closures can be found on the Internet at: www.pac.dfo-mpo.gc.ca/recfish.
9. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIES	DATES	LIMITS / GEAR
All Areas (Areas 11 to 29 and 111), unless otherwise specified below.	Chinook	Jan 01-Dec 31	2 per day.
	Coho	Jun 01-Dec 31	2 hatchery marked fish per day.
	Sockeye	Jan 01-Dec. 31	Special restrictions may be introduced to protect specific stocks. Check with your local DFO office prior to fishing.
	Pink	Jan 01-Dec 31	4 per day.
	Chum	Jan 01-Dec 31	4 per day.
Areas 121 and 123 to 127	Coho	Jun 01-Aug 31	2 hatchery marked fish per day.
		Sep 01- Dec 31	4 hatchery marked fish per day.
	Chinook	Jan 01-Dec 31	2 per day.
	Sockeye	Jan 01-Dec. 31	Special restrictions may be

WATERS	SPECIES	DATES	LIMITS / GEAR
			introduced to protect specific stocks. Check with your local DFO office prior to fishing.
	Pink	Jan 01-Dec 31	4 per day.
	Chum	Jan 01-Dec 31	4 per day.
Area 11 and 111			
Subareas 11-1 and 11-2, 12-14 and 111	Coho	Jun 01 - Jul 31	2 per day
		Aug 01-Dec 31	2 per day, one of which may be wild (unmarked). Additional opportunities are being considered and evaluated.
Subareas 11-3 to 11-10 (Inside of Nakwakto Rapids)	Coho	Apr 01- Dec 31	2 per day.
Area 12			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
Subareas 12-3 to 12-13, 12-15 to 12-19 and 12-21 to 12-48 Where salmon fishing is permitted	Coho	Jun 01-July 31	2 per day, one of which may be wild (unmarked)
That portion of Subarea 12-4 shoreward of a line running from Lewis Point to 50°32.839' north latitude and 126°50.122 west longitude near the southwest entrance to Telegraph Cove commonly known as Beaver Cove.	Coho	Aug 01-Dec 31	2 per day, one of which may be wild (unmarked)
That portion of Subarea 12-19, the waters of McNeill Bay inside a line from Ledge Point to the BC Ferry Terminal.	Coho	Aug 01-Dec 31	2 per day, one of which may be wild (unmarked)
Subareas 12-26 to 12-48	Coho	Aug 01-Dec 31	2 per day, one of which may be wild (unmarked)
In Subarea 12-16, those waters of Hardy Bay inside a line from Daphne Point to Duval Point where salmon fishing is permitted.	Coho	Aug 01-Dec 31	4 hatchery marked fish per day
In Subarea 12-16, the waters of Hardy Bay shoreward of a line from a boundary sign on the Keltic Seafoods wharf to a boundary sign on the opposite shore. (inner portion of Hardy Bay)	All	Aug 01-Sep 30	You may only use a single-pointed hook that measures no more than 15 mm between the point and shank when fishing.
In Subarea 12-16, the mouth of the Keogh River within a 400 m radius of the shore.	All	Aug 01-Sep 30	You may only use a single-pointed hook that measures no more than 15 mm between the point and shank when fishing.
In Subarea 12-17, those waters inside a line that starts at a boundary sign approx. 1.9 km northwest of the Cluxewe river mouth, then to 50°37.53' N and 127°12.21'W, then to 50°36.98'N and 127°09.53'W, then 200° true to a boundary sign on the shore.	Pink	Aug 01-Sep 30	1 per day
	All		You may only use a single-pointed hook that measures no more than 15 mm between the point and shank when fishing.

WATERS	SPECIES	DATES	LIMITS / GEAR
That portion of Subarea 12-19 [Broughton Strait southerly of a line from Ledge Point to the light on the southern end of Haddington Is, then to the light on Yellow Bluff on Cormorant Is, then following the southerly shoreline to a marker on Gordon Bluff, then to Lewis Point on Vancouver Is]	Chinook	Aug 01-Oct 31	<i>You may not retain chinook.</i>
Area 13			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
In Subarea 13-5, those waters bounded on the south by a line from the boat ramp on Tyee Spit 185 m east in line with Shag Rock on Quadra Island, on the north by a line from the tip of Tyee Spit 185 m east in line with April Point and on the west by a line from the low water mark between the north and south boundaries.	All	Jul 15-Sep 15	Vessels under motor power are prohibited, under regulations of the <i>Canada Shipping Act</i> .
In Subareas 13-3 and 13-5, those waters of Discovery Passage and the Campbell River inside a line true east of the fishing boundary sign at Orange Point at 50°04.391 N by 125°16.611 W to the middle of the channel at 50°04.387 N by 125°15.626 W then southeasterly down the middle of the channel to the intersection of a line at 50°00.507 N by 125°12.859 W running from a boundary sign on the southern end of Hidden Harbour breakwater at 50°00.504 N by 125°13.945 W, then true east to Quadra Island.	All	July 15-Sep 30	Only a single-pointed hook may be used. The use of natural bait is prohibited. No person shall angle with a fishing line or downrigger line to which is attached a) a weight that is greater than 168 grams/6 ounces; or b) an attracting device that is not affixed directly to the hook [Licence Condition].
Subarea 13-20 to 13-21 and that portion of Subarea 13-22 described as those waters in Bute Inlet from the RCA boundary sign at Littleton Point across to the opposite shore at 50°49.9' N, 124°51.63' W	Coho	Aug 1 - Sep 15	2 per day, one of which may be wild (unmarked)
Subarea 13-22 commonly known and described as those waters of Bute Inlet lying Northerly inside of a line running from a marker at Alpha Bluff to a marker on the opposite shore to the RCA boundary at the head of Bute Inlet.	Chinook	Jun 01- Sep 30	<i>You may not retain Chinook.</i>
Area 14			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
In that portion of Subarea 14-11, Baynes Sound inside a line from the Cape Lazo Light, then to the P-54 Bell Buoy on Comox Bar, then to Longbeak Point, then to the mouth of Hart (Washer) Creek	Chinook	May 01-Aug 31	<i>You may not retain chinook.</i>
	Coho	Sep 01-Dec 31	2 per day, only one of which may be wild.

WATERS	SPECIES	DATES	LIMITS / GEAR
Those waters of Lambert channel bounded from a marker off Nile Creek, north along Vancouver shoreline to Mapleguard Point, thence along the Harbour limit boundary to southern point of Chrome Island, then to southern tip of Denman Island, thence north along shore to Whalebone Point, thence to <i>Shingle Spit</i> on Hornby Island, thence along the shore to Norman Point, thence south from Norman Point 2.4Nm to a position (49°28.25'N and 124°36.54'W), and back to Nile Creek marker.	Chinook	Jun 15-Aug 15	<i>You may not retain Chinook.</i>
Those waters , inside a line from 49°46.74'N and 124°59.06'W near the boat launch at Kitty Coleman Provincial Park, thence north-easterly to 49°47.35'N and 124°57.68'W, thence southerly to 49°45.14'N and 124°54.32'W, thence southwest to the navigation light at the Little River Ferry Dock.	Chinook	Jun 01–Jun 30	<i>You may not retain Chinook.</i>
Those waters of Sentry Shoals within a 1.50Nm radius of the Sentry Shoal Marker Buoy.	Chinook	Jun 01 – Jun 30	<i>You may not retain Chinook.</i>
Subareas 14-14. [Comox Harbour]	Chinook	Jan 01-Dec 31	<i>You may not retain Chinook.</i>
The waters of Puntledge River mouth and the shoreline.	All Species	Aug 1-Oct 15	A single barbless hook restriction applies.
Area 15			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
Those waters of Subarea 15-1 east of a line from Albion Point (Black Point local name) to Scotchfir Point.	Coho	Aug 15 – Oct 15	2 per day
Those waters of Algerine and Shearwater Passages bounded by a line from the southern most point of Harwood Island southerly to the navigational light on Rebecca Rocks hence northwest to the easterly most point to Vivian Island then northerly to the navigational marker at Mystery Reef hence west to the navigational marker on Atrevida Reef then southerly to the northern most point of Harwood Island then hence along the western shore of Harwood Island back to the point of commencement at the most southerly tip of Harwood Island.	Chinook	Jun 15-Aug 15	<i>You may not retain Chinook.</i>
That portion of Subarea 15-6 [Toba Inlet] easterly of a line from a boundary sign at Snout Point to a boundary sign on the opposite shore.	Chinook	Jan 01 – Sep 30	<i>You may not retain Chinook.</i>
Area 16			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
Those waters in Subarea 16-5 and portion of Subarea 16-6) Sechelt Inlet and Porpoise Bay, southerly of a line from Nine Mile Point to a boundary sign on the opposite shore).	Coho	Jun 01-Dec 31	4 per day
	Chinook	July 1 – Dec 31	2 per day, minimum size limit is 41 cm
Area 17			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm

WATERS	SPECIES	DATES	LIMITS / GEAR
In Subarea 17-4, except for those waters southeasterly of a line from Shingle Point to Pilkey Point and Subareas 17-5 to 17-7, 17-9, 17-13 to 17-17,[Northumberland Channel, Pylades Channel, Stuart Channel], thence a portion of Subarea 17-12 inside a line from Tinson Point to Snake Island Light (RCA Boundary) to the southern Five Finger Island group to the RCA boundary starting Horswell Channel Buoy (49°12.93'N, 123°56.03'W) to north of Horswell Bluff (49°12.93'N, 123°56.47'W).	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
In Subareas 17-18 to 17-20 and a portion of 17-12 those waters inside a line from Icarus Point on Vancouver Island true north 2 nm, thence northwesterly to the Navy buoy in Ballenas Channel, thence to Nankivell Point at the entrance to Schooner Cove on Vancouver Island	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
Area 18			
Entire Area	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
Subareas 18-1 to 18-6, 18-9 and 18-11	Chinook	Jun 3 – Jul 15	2 per day, one (1) of which may be greater than 67 cm
In Subareas 18-7 and 18-8, that portion of Subarea 18-7 that lies northerly of a line from a square white boundary sign on Vancouver Island, near 48°46.179'N and 123°34.654'W, to a square white boundary sign on Saltspring Island SE of Burial Islet, near 48°45.992'N and 123°33.777'W, and southerly of a line from a square white boundary sign on Saltspring Island approximately 1.5 nautical miles ESE of Musgrave Point, near 48°43.982'N and 123°31.418'W, to a square white boundary sign on Vancouver Island approximately 0.5 nautical miles NW of Cherry Point, near 48°43.197'N and 123°33.708'W.	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
In Subareas 18-6 to 18-8, 18-10 [Fulford Harbour, Satellite Channel, Shute Passage, Sansum Narrows]	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
In Subarea 18-10, the waters of Fulford Harbour inside or NW of a line between a fishing boundary sign located near the navigation light and Jackson Rock on the north shore of Fulford Harbour across the Harbour to a boundary sign on the opposite shore.	All	Oct 10-Jan 15	Only a single-pointed hook may be used.
Subarea 18- 8, inside of a line between Separation Point and Cherry Point.	Coho	Nov 1-Dec 31	2 per day.
Area 19			
In that portion of Subareas 19-1 to 19-4 [south of Cadboro Point] and Subarea 20-5 (those waters near Victoria between Cadboro Point to Sheringham Point	Chinook	Jan 01-Feb 28 and May 22–Dec 31	Minimum size limit is 45 cm
Subareas 19-1 to 19-4 [south of Cadboro Point]	Chinook	Mar 1–June 18	2 per day between 45 and 67 cm or hatchery marked

WATERS	SPECIES	DATES	LIMITS / GEAR
			Chinook salmon only that are greater than 67 cm in length.
		Jun 19 – Jul 15	2 per day, one (1) of which may be greater than 67 cm.
Subareas 19-5 to 19-12 [north of Cadboro Point]	Chinook	Jan 01- Dec 31	Minimum size limit is 62 cm
Subareas 19-5 and 19-6	Chinook	Jun 3 – Jul 15	2 per day, one (1) of which may be greater than 67 cm.
In Subareas 19-7 to 19-10 [Saanich Inlet].	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
Area 19	Coho	Oct 01-Dec 31	2 per day, only one of which maybe wild
Area 20			
Those waters of Subareas 20-1 and 20-2 inside or northerly of a line from Owen Point to the Port San Juan Light and Whistle Buoy then to Woods Nose.	Chinook	Jul 15-Oct 25	<i>You may not retain Chinook.</i>
Those waters in Subarea 20-2 and a portion of Subarea 20-1 shoreward of a line between a square white boundary sign at Owen Point, the Port San Juan Light and Whistle Buoy, and San Juan Point. (after Labour Day)	Coho	Sep 07- Dec 31	4 per day, only two of which may be wild.
Those waters in a portion of Subareas 20-1 (seaward of a line between a square white boundary sign at Owen Point, the Port San Juan Light and Whistle Buoy, and San Juan Point) and 20-3 to 20-7.	Coho	Oct 01- Dec 31	4 per day, only one of which may be wild.
A portion of 20-4 east from a point at the mouth of Jordan River located at 48.25.382N 124.03.410W then true south to the point of intersection with the international boundary between Canada and the United States.	Chinook	Jun 3 – Jun 18	2 per day, hatchery marked or wild, between 45 cm and 67 cm or hatchery marked only over 67 cm.
		Jun 19 – July 15	2 per day, one (1) of which may be greater than 67 cm
Subarea 20-5	Chinook	Jan 01- Feb 28 and May 22–Dec 31	Minimum size limit is 45 cm
Subarea 20-5	Chinook	Mar 1- Jun 18	2 per day between 45 and 67 cm or hatchery marked Chinook salmon only that are greater than 67 cm in length
		June 19 -July 15	2 per day, one (1) of which may be greater than 67 cm
Subareas 20-6 and 20-7 [Sooke Inlet, Sooke Harbour and Sooke Basin, northerly of a line from Muir Point to Possession Point]	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook.</i>
Area 21 and 121			
Area 21, seaward of a line from the boundary sign about 1 mile southeast of Tsusiat Falls, then to the marker buoy off Clo-oose, then to Dare Point.	Chinook	Aug 01- Oct 15	2 per day, only one of which may be greater than 77 cm.

WATERS	SPECIES	DATES	LIMITS / GEAR
Area 121, shoreward of a line 1 nautical mile seaward of a line from Pachena Point to Bonilla Point light.			
Area 21	Coho	Jun 01–Aug 31	2 hatchery marked fish per day
		Sep 01 – Dec 31	4 hatchery marked fish per day
Area 22 [Nitinat Lake]			
Entire Area	Sockeye	Jan 01-Dec 31	No fishing for sockeye
	All	Aug 01-Oct 31	Only a single-pointed hook may be used.
Southerly of a line from Windy Point to a boundary sign on the opposite shore.	Coho	Jun 1 – July 31	2 fish per day
		Aug 01-Dec 31	4 fish per day.
Northeasterly of a line from Windy Point to a boundary sign on the opposite shore.	All	Aug 01-Oct 31	No fishing for salmon
Area 23 and 123			
Area 23	Sockeye	Closed until further notice	Possible opportunities in July depends on run size forecast
In Subarea 23-1, the waters of Port Alberni Harbour northerly of a line from a boundary sign in upper Alberni Harbour situated at 49°14.19 N and 124°50.23 W then through the southern most point of Hoik Island thence to the flashing green light at the mouth of the Somass River thence due east to a boundary sign on the opposite shore to the tidal boundary markers at Paper Mill Dam on the Somass River	All	Jan 01-Dec 31	Only a single-pointed hook may be used.
In Subareas 23-1 and 23-2, those waters southerly of a line from a tidal boundary marker at Paper Mill Dam to a boundary marker on the opposite shore and northerly of a line from Hocking Point 127° true to a boundary marker on the opposite shore of Alberni Inlet.	Chinook	Jan 01- Dec 31	2 per day
	Coho	Aug 01-Dec 31	4 per day
In those portions of Subareas 23-2 and 23-3, those waters southerly of a line from a square, white fishing boundary sign at the mouth of Chesnucknuw Creek to a square, white fishing boundary sign on the western shore of Alberni Inlet, and northeasterly of a line from Star Point to a square, white fishing boundary sign at the mouth of Handy Creek.	Chinook	Aug 01-Sep 30	You may not retain Chinook.
	Coho	Aug 01-Dec 31	4 per day
Subareas 23-4 to 23-11 [Barkley Sound seaward of a line from a boundary sign on Vancouver Island at Mutine Point through Chup Point, to a boundary sign on Seddall Island south of Ecoole.	Chinook	Aug 01-Oct 15	2 per day, only 1 of which may be greater than 77 cm.
Those portions of Subareas 23-4 to 23-11 bounded	Coho	Jun 01 – Aug 31	2 per day

WATERS	SPECIES	DATES	LIMITS / GEAR
in the south by a line from Amphitrite Point Light to the Chow Island Light, then to the Benson Island Light, then to the Coaster Channel Light, then to the southwestern tip of Sanford Island, then to Aguilar Point and in the north by a line from a boundary sign on Vancouver Island just north of Assits Island Light through a boundary marker at Fullerton Point on Tzartus Island, to a boundary sign on Seddall Island south of Ecoole.		Sep 1-Dec 31	4 per day
Area 123 and those portions of Subareas 23-7, 23-8, and 23-11, seaward of a line from Amphitrite Point to the Chow Island Light, then to the Benson Island Light, then to the Coaster Channel Light, then to the southwestern tip of Sanford Island, then to Aguilar Point	Coho	Jun 01 – Aug 31	2 hatchery marked fish per day
		Sep 1-Dec 31	4 hatchery marked fish per day
That portion of Subarea 123-5, shoreward of a line drawn one nautical mile seaward of the surfline and southeasterly of a line commencing at 48°55.872 N, 125°33.028 W near Ucluelet on Vancouver Island and intersecting the conservation corridor at 48°54.877 N, 125°34.259 W	Chinook	Aug 01- Oct 15	2 fish per day, only 1 of which may be greater than 77 cm
That portion of Area 123, shoreward of a line drawn one nautical mile seaward of the surfline (shoreline) and northwesterly of a line commencing at 48°55.872 N, 125°33.028 W near Ucluelet on Vancouver Island and intersecting the conservation corridor at 48°54.877 N, 125°34.259 W			2 per day Maximum size limit of 77 cm
Area 24 and 124			
That portion of Subarea 24-2 northerly of Starling Point [Sydney Inlet], that portion of Subareas 24-3 southwesterly of a line commencing at 49°24.640' N, 126°08.646' W on Vancouver Island to 49°24.562' N, 126°07.480' W on Obstruction Island, that portion of , Subarea 24-4 northerly of a line commencing on Flores Island at 49°18.005' N, 126°04.141' W then to 49°18.250' N, 126°03.132' W on McKay Island then following the McKay Island shoreline to 49°18.404' N, 126°01.939' W then to 49°19.279' N, 126°01.399' W on Vancouver Island and 24-14 [Miller Channel]	All	Aug 01-Oct 31	<i>You may not retain salmon.</i>
	Coho	Jan 1 – July 31	<i>You may not retain coho</i>
	Chinook	Jan 01-Jul 31	2 per day Minimum size limit of 45 cm
Subarea 24-6, bounded in the north by a line commencing at Kutcous Point (49°14.961'N, 126°04.817'W) on Flores Island to 49°14.637' N, 126°00.825' W on Vancouver Island near the Chetarpe I.R. and northeasterly of a line from Siwash Cove to the NW tip of Blunden Is and from the SW tip of Blunden Is to Ahaus Point.	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook</i>
	Coho	Jun 01-Aug 31	2 per day
		Sep 01–Dec 31	4 per day, only 2 of which may be wild
Subarea 24-7 [Bedwell Sound]	All	Aug 01-Oct 31	<i>You may not retain salmon.</i>
	Coho	Jan 01 – July 31	<i>You may not retain coho</i>

WATERS	SPECIES	DATES	LIMITS / GEAR
Subarea 24-8, northeasterly of a line from Moser Point on Vargas Is, to the NW tip of Wickaninish Is, then from the S tip of Wickaninish Is to the SE tip of Echachis Is, then to Lennard Is Light, then to Cox Point.	Chinook	Aug 01-Oct 31	<i>You may not retain Chinook</i>
	Coho	Jun 01- Aug 31	2 per day
		Sep 01 –Dec 31	4 per day, only 2 of which may be wild
Subarea 24-8, southwesterly of the line described above.	Chinook	Aug 01-Oct 15	<i>You may not retain Chinook</i>
	Coho	Sep 01–Dec 31	4 hatchery marked fish per day
That portion of Subarea 24-9 westerly of a line commencing at Ginnard Point on Meares Island then to a point on the Vancouver Island shoreline on the opposite shore of Browning Passage at 49°07.48'N, 125°51.81'W	Chinook	Aug 01-Oct 31	<i>You may not retain Chinook</i>
	Coho	Jun 01- Aug 31	2 per day
		Sep 01–Dec 31	4 per day, only 2 of which may be wild
Subarea 24-9 easterly of the line described above	Coho	Jun 01-July 31	2 per day
		Nov 01 –Dec 31	Fin Fish Closure
	Chinook	Aug 01– Dec 31	Finfish Closure
Subarea 24-10, NW of boundary signs on opposite sides of the entrance to Warn Bay	All	Aug 01-Dec 31	<i>You may not retain salmon</i>
	Coho	Jan 01 – July 31	<i>You may not retain coho</i>
Subarea 24-10 [Fortune Channel], except for Warn Bay	Chinook	Aug 01-Dec 31	<i>You may not retain Chinook.</i>
	Coho	Jun 01- Aug 31	2 per day
		Sep 1–Dec 31	4 per day, only 2 of which may be wild
Subarea 24-11, [Indian Bay, Windy Bay, lower Tofino Inlet] except for Grice Bay	Chinook	Aug 01-Dec31	<i>You may not retain Chinook.</i>
	Coho	Jun 01- Aug 31	2 per day
		Sep 01–Dec 31	4 per day, only 2 of which may be wild
Subarea 24-11, southerly of a line between boundary signs approx. half way to the head of Grice Bay.	All	Aug 01-Dec 31	<i>You may not retain salmon</i>
	Coho	Jan 01 – July 31	<i>You may not retain coho</i>
Subarea 24-12 [Tofino Inlet, northerly of boundary signs just south of Warne Is]	All	Aug 01-Dec31	<i>You may not retain salmon</i>
	Coho	Jan 01 – July 31	<i>You may not retain coho</i>
That portion of Area 124, shoreward of a line drawn approximately one nautical mile seaward of the surfline then to the surfline (corridor).	Chinook	Aug 01-Oct 15	2 per day Maximum size limit of 77 cm
Area 124 and that portion of Subareas 24-2 seaward of a line from Starling Point on Flores Island true west to a boundary sign on Vancouver Island and those portions of sub-areas 24-6 and 24-8 seaward of a line from Cox Point to the Lennard Island Light, then to Echachis Island, then to Wickaninnish Island, then to Moser Point on Vargas Island, then from the northwest tip of Ahous Point on Vargas Island to the southwest tip of Blunden Island, then from the northwest tip of Blunden Island to Siwash Cove on Flores Island.	Coho	Jun 01 – Aug 31	2 hatchery marked fish per day
	Coho	Sep 1-Dec 31	4 hatchery marked fish per day
	Chinook	Aug 1 to Oct 15	<i>You may not retain Chinook</i>
Area 25 and 125			
Nootka Sound			
Subareas 25-1 to 25-3 [Muchalat Inlet]	All	Jul 15-Oct 15	<i>You may not retain salmon.</i>
	Coho	Jun 01-Jul 14	2 per day

WATERS	SPECIES	DATES	LIMITS / GEAR
		Oct 16-Dec 31	4 per day
Subarea 25-4, northwesterly of a line from Salter Point to Hoiss Point	All	Jul 15-Oct 15	<i>Fin-fishing closure.</i>
	Coho	Jun 01-Jul 14	2 per day
		Oct 16-Dec 31	4 per day
Subarea 25-4, northerly of a line from Hoiss Point to San Carlos Pt on Bligh Island then following the Bligh Island shoreline easterly to a point at or near 49°40.77' N and 126°30.20' W then to a boundary sign on the opposite shore of Hana Channel and ,Subarea 25-5 [Tlupana Inlet north of Princess Royal Point], excluding Nesook Bay and Head Bay	Coho	Jun 01-Jul 31	2 per day
		Aug 01-Dec 31	4 per day
	Chinook	Jan 01 – Dec31	2 per day
That portion of Subarea 25-4, southwesterly of a line from Hoiss Point to San Carlos Point	Chinook	Jul 15-Oct 15	2 per day, only 1 of which may be greater than 77 cm
	Coho	Jun 01- Aug 31	2 per day
		Sep 1- Dec 31	4 per day
That portion of Subarea 25-4, southeasterly of a line from a boundary sign located on Bligh Island at or near 49°40.77' N and 126°30.20' W to a boundary sign on the opposite shore of Hana Channel.	All	Jul 15-Oct 15	<i>You may not retain salmon.</i>
	Coho	Jun 01-Jul 14	2 per day
		Oct 16-Dec 31	4 per day
That portion of Subarea 25-6 NE of a line from the southern entrance to San Gertrudis Cove to the southern tip of the Pantoja Islands to Clerke Peninsula Light, excluding Kendrick Inlet.	Coho	Jun 01- Aug 31	2 per day
		Sep 01- Dec 31	4 per day
That portion of Subarea 25-6 SW of a line from the southern entrance to San Gertrudis Cove to the southern tip of the Pantoja Islands to Clerke Penninsula Light, excluding Kendrick Inlet	Coho	Jun 01 – Aug 31	2 hatchery marked fish per day
		Sep 01 – Dec 31	4 per day
That portion of Subarea 25-6 NW of a line from Boston Point to Salter Point [Kendrick Inlet]	All	Jul 15-Oct 15	<i>Fin Fishing Closure</i>
	Coho	Jun 01-Jul 14	2 per day
		Oct16-Dec 31	4 per day
That portion of Subarea 25-6 NW of a line commencing at a point on the Nootka Island shoreline located north of Friendly Cove, at 49°35.946' N, 126°36.848' W. to Discovery Point on the opposite shore of Nootka Sound.	Chinook	Jul 15-Oct 15	2 fish per day, only 1 of which may be greater than 77 cm
That portion of 25-6 southeasterly of a line from a boundary sign on Boston Point to a boundary sign at Salter Point on the southern tip of Strange Island. (Kendrick Inlet)	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
Subarea 25-7	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 01-Aug 31	2 per day hatchery marked only
		Sep 01 – Dec 31	4 per day
That portion of Subarea 25-8 (Tahsis Inlet) from a boundary line commencing at Mozino Point to a boundary sign on the opposite shore of Tahsis	<i>All</i>	<i>July 15 – Oct 15</i>	<i>Salmon non-retention</i>

WATERS	SPECIES	DATES	LIMITS / GEAR
Inlet south to a boundary line from the northerly tip of Strange Island to a boundary sign on the opposite shore of Tahsis Inlet			
That portion of Subarea 25-8 (Tahsis Inlet) south of a line from a boundary sign near the northerly tip of Strange Island to a boundary sign on the opposite shore of Tahsis Inlet.	All	July 15 – Oct 15	Fin fish Closure
Subarea 25-15 [Zuciarie Channel]	All	Jul 15-Oct 15	You may not retain salmon.
Subarea 25-16 and that portion of Subarea 25-8 northerly of a line commencing at Mozino Point to a boundary sign on the opposite shore of Tahsis Inlet	All	Jul 15-Oct 15	Fin Fish Closure
	Coho	Jun 01-Jul14	2 per day
		Oct 16-Dec 31	4 per day
Esperanza Inlet			
Subareas 25-9 [Hecate Channel], 25-11[Port Eliza] and 25-12 [Espinoza Inlet]	All	Jul 15-Oct 15	You may not retain salmon.
	Coho	Jun 01-Jul 14	2 per day
		Oct 16-Dec 31	4 per day, 2 of which may be wild
That portion of Subarea 25-13 westerly of a line from Steamer Point Light on Nootka Island at 49°53.181 N, 126°47.890 W to a point opposite on the Vancouver Island shore at 49°53.291 N, 126°48.951 W to a line drawn from Tatchu Point to middle reef buoy then a marker northeast of Ferrer Point (surflines) and, Subarea 25-14 [Nutchatlit Inlet]	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 01- Aug 31	2 per day
		Sep -1-Dec 31	4 per day
That portion of Subarea 25-13 westerly (seaward) of a line commencing at Tatchu Point to the Middle Reef Light buoy, then to Ferrer Point	Coho	Jun 01-Aug 31	2 per day hatchery marked only
		Sep 1 – Dec 31	4 per day
	Chinook	July 15-Oct 15	2 per day Maximum size limit of 77 cm
Area 125, shoreward of a line drawn approximately one nautical mile seaward of the surfline then to the surfline (corridor).	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
Area 125, seaward of the surfline.	Coho	Jun 01- Aug 31	2 hatchery marked fish per day
		Sep 01-Dec 31	4 hatchery marked fish per day
Area 26 and 126			
Subarea 26-1, seaward of a line from White Cliff Head to a marker Rugged Point.	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 1 – Aug 31	2 hatchery marked fish per day
		Sep 01-Dec 31	4 hatchery marked fish per day
Subarea 26-1, shoreward of line described above.	All	Jul 15-Oct 15	You may not retain salmon
Subareas 26-2 to 26-5 and 26-9	All	Jul 15-Oct 15	You may not retain salmon
Subarea 26-6, seaward of the line from the most westerly point of Union Island to a boundary marker on the opposite shore of Vancouver Island.	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm

WATERS	SPECIES	DATES	LIMITS / GEAR
	Coho	Jun 01- Aug 31	2 hatchery marked fish per day
		Sep 01-Dec 31	4 hatchery marked fish per day
Subarea 26-6, shoreward of line described above.	All	Jul 15-Oct 15	<i>You may not retain salmon.</i>
Subarea 26-11	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
Subarea 26-8 (Malksope Inlet) and Subareas 26-9 (Ouokinish Inlet) seaward of a line from boundary signs on opposite sides of the entrance to the inlets.	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 01- Aug 31	2 hatchery marked fish per day.
		Sep 01-Dec 31	4 hatchery marked fish per day
Subareas 26-8 and 26-9, shoreward of line described above	All	Jul 15-Oct 15	<i>You may not retain salmon.</i>
Subarea 26-10, easterly of the Rockfish Conservation Area boundary.	Chinook	Jul 15-Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 01- Aug 31	2 hatchery marked fish per day.
		Sep 01-Dec 31	4 hatchery marked fish per day
Area 126, shoreward of a line drawn approximately one nautical mile seaward of the surfline then to the surfline (corridor). [surfline is a line from Solandar Island to Clerke Point, to Jakobson Point, to Lookout Island to Tatchu Point]	Chinook	Jul 15- Oct 15	2 per day Maximum size limit of 77 cm
	Coho	Jun 01- Aug 31	2 hatchery marked fish per day.
		Sep 01-Dec 31	4 hatchery marked fish per day
Area 126, seaward of the surfline.	Coho	Jun 01 – Aug 31	2 hatchery marked fish per day
		Sep 01 – Dec 31	4 hatchery marked fish per day
Area 27 and 127			
Portion of Subarea 27-1 excluding the portion lying inside the Topknot RCA	Chinook	Jul 15-Sep 30	2 per day, 1 of which may be greater than 77 cm
	Coho	Jun 01-Aug 31	2 per day
		Sept 01-Dec 31	4 per day, 2 of which may be wild
Portion of Subarea 27-2 excluding the portion lying inside the Topknot RCA and Subarea 27-3	Chinook	Jul 15 -Sep 30	2 per day, 1 of which may be greater than 77 cm
	Coho	Jun 01- Aug 31	2 per day

WATERS	SPECIES	DATES	LIMITS / GEAR
		Sept 01-Dec 31	4 per day, 2 of which may be wild
Subarea 27-4 [waters inside a line from Lawn Point to Solandar Island, then to Cape Cook]	Chinook	Jul 15-Sep 30	2 per day, maximum size limit of 77 cm
Subareas 27-7 to 27-11 [Quatsino Sound east of the Cliffe Point Light, including Holberg Inlet and Neroutsos Inlet].	Chinook	Jul 15 – Jul 31	2 per day, only one may be greater than 77 cm.
		Aug 1 – Sep 30	<i>You may not retain Chinook</i>
	Coho	Jun 01- Aug 31	2 per day
		Sept 01-Dec 31	4 per day, 2 of which may be wild
Area 127, shoreward of a line drawn approximately one nautical mile seaward of the surfline from Lawn point to Cape Scott.	Chinook	Jul 15 - Sep 30	2 per day, only one may be greater than 77 cm.
Area 127, seaward of the surfline.	Coho	Jun 01-Aug 31	2 hatchery marked fish per day.
		Sep 01- Dec 31	4 hatchery marked fish per day.
Area 28			
Entire Area	Chinook	Jan 01-Dec 31	Minimum size limit is 62 cm
	Sockeye	TBA	Opportunities anticipated. Check with your local DFO office.
Subareas 28-1 to 28-9	Coho	Jan 01-Dec 31	2 hatchery marked fish per day
Subareas 28-10	Coho	Jun 01-Dec 31	2 hatchery marked fish per day. Shore fishing only.
Portion of Subarea 28-9 - the mouth of the Capilano River, in the waters of Burrard Inlet bounded by a line from the north end of the 14th Street pier, in West Vancouver, thence to the light at Prospect Point, thence to the north tower of the First Narrows Bridge	All	Aug 01-Dec 31	Single barbless hook with no greater than 15 mm from point to shank
Subareas 28-11 to 28-14.[Burrard Inlet east of Second Narrows/ Iron Workers Memorial Bridge, Indian Arm and Port Moody Arm]	Coho	Apr 01-Sep 30	2 hatchery marked fish per day
Subareas 28-11 to 28-14.[Burrard Inlet east of Second Narrows/ Iron Workers Memorial Bridge, Indian Arm and Port Moody Arm]	Coho	Oct 01-Mar 31	<i>You may not retain coho.</i>
Area 29			
Entire Area	Sockeye	TBA	Opportunities anticipated. Check with your local DFO office.
Subareas 29-1 to 29-5 & 29-8	Chinook	Jan 01-Dec 31	Minimum size limit is 62 cm
Subareas 29-4 and 29-5 – That portion that lies south from a point on the east side of Valdes Island located at 49.05.562N 123.39.989W then	Chinook	Jun 3 - Jul 15	2 per day, 1 of which may be greater than 67 cm.

WATERS	SPECIES	DATES	LIMITS / GEAR
extending 57 degrees True for 5 nautical miles to a point at 49.08.316N 123.33.669W.			
Subareas 29-6, 29-7, 27-9 & 29-10	Chinook	Jan 01-Mar 31	Minimum size limit is 62 cm
		Apr 01-Jul 15	<i>You may not retain Chinook.</i>
		July 16 –Dec 31	Opportunities anticipated. Check with your local DFO office.
Tidal waters of the Fraser	All	Jan 01-Dec 31	<i>Single barbless hooks required</i>
	Chinook	Jan 01-Jul 15	<i>No fishing for Salmon.</i>
		July 16-Aug 31	Opportunities anticipated. Check with your local DFO office.
		Sep 01-Dec 31	4 per day, only 1 over 62cm Subject to in-season changes. Contact your local DFO office for details.
	Coho	Sep 07-Oct 08	<i>You may not fish for coho</i>
	Coho	Oct 09-Dec 31	2 hatchery marked fish per day
	Chum	Jul 16-Dec 31	Opportunities anticipated. Check with your local DFO office.
Those waters in Subarea 29-1 in front of Chapman Creek of Davis Bay and Trail Bay, inside a half mile ribbon boundary (1/2 mile off shore). Commencing from one half mile true South of the Western boundary of Snickett Park (49° 27.625N 123° 45.903W) to one half mile true South of the marker at the entrance to the Port Stalashin Marina (49° 25.875N 123° 42.824W)	Coho	Sep 15 – Dec 31	2 per day
That portion of Subareas 29-3 and 29-10 easterly of a line from Gower Point to a marker on Point Grey.	Coho	Jan 01-Dec 31	2 hatchery marked fish per day

FINFISH CLOSURES

There is no fishing for finfish in the following waters.

Finfish includes salmon, rockfish, lingcod, herring, halibut and any other fish with fins. Finfish does not mean crustaceans, echinoderms, molluscs, shellfish and marine mammals.

Note that this table does not include the Rockfish Conservation Areas (RCA). For information on the location of the RCA's please see Appendix 2.

WATERS	DATES
Area 11 and 111	
No finfish closures, check for RCA's.	
Area 12	
In Area 12, the waters of Port McNeill Bay westerly of a line from a boundary sign at the north end of the Western Forest Products jetty, true north to a boundary sign on the opposite shore of Ledge Point Peninsula.	Aug 15-Dec 31
In Area 12, the mouth of Scott Cove Creek and Viner Sound shoreward of a line between fishing boundary signs located at King Point and on the point 1 km south from the mouth of Scott Cove Creek.	Aug 15-Sep 30
Subarea 12-34, the waters of the mouth of Klinaklini River (Knight Inlet) shoreward of a line from a fishing boundary sign at the southern entrance to Wahshihlas Bay to a fishing boundary sign at Rubble Point.	Jan 01-Dec 31
Subarea 12-46, the mouth of Kingcome River shoreward of a line from a fishing boundary sign on Petley Point to a fishing boundary sign on a point on the opposite shore of Kingcome Inlet.	Jan 01-Dec 31
Subarea 12-48, the mouth of Wakeman River north of a line connecting two fishing boundary signs located on opposite shores approximately 6 km from the head of Wakeman Sound.	Jan 01-Dec 31
In Area 12, the mouth of Nimpkish River inside a line from a fishing boundary sign at a point on the shore of Vancouver Island approximately 1.5 km east of Broad Point, then to a navigational aid in the middle of Haddington Passage, then to a fishing boundary sign at a point approximately 1 km east of Willow Creek, then to the tidal water boundary signs approximately 100 m upstream of the Highway 19 bridge.	June 01-Nov 30
Subarea 12-20 [Those waters of Parson Bay bounded inside a line from Red Point on Harbledown Island to a marker on the most northwest point of Parson Island, from there following the northern shore to the most easterly point and from there true east to Harbledown Island]	Jun 15-Sep 30
Area 13	
Those waters of Discovery Passage and the Campbell River inside a line true east of the fishing boundary sign at Orange Point to the middle of the channel, then southeasterly down the middle of the channel to the intersection of a line running from a boundary sign on the southern end of Hidden Harbour breakwater, then true east to Quadra Island, is closed to fishing for all finfish, except for the Campbell River Discovery Pier. The area around the Discovery Pier will remain open inside a line running true east 50 meters into Discovery Passage at the north end of the pier, then southeasterly down the Discovery Passage to the intersection of a line running true east 50 meters at the south end of the Discovery Pier.	Oct 01-Oct 31

WATERS	DATES
In Area 13, those waters inside a line from the float at the Cape Mudge Indian Village on Quadra Island at 50°01.393 N X 125°11.805 W thence true west at 270° for one nautical mile to a point at 50° 01.391 N X 125° 13.360 W, thence southeast 160° true to a point at 49°58.260 N X 125°11.616 W, this being the intersection of a line drawn from the fishing boundary sign on Willow Point on the VI shore at 49°58.008 N X 125°12.489 W to the Red Can Buoy light off Wilby Shoals, Discovery Passage at 49°58.969 N X 125°09.156 W, thence to the Cape Mudge light on Quadra Island at 49°59.913 N X 125°11.736 W.	Jul 15 - Aug 31
In Area 13, the waters of Village Bay inside a line from a fishing boundary sign at the north entrance of Village Bay, Quadra Island, to a boundary sign at the south entrance of Village Bay.	July 1-Oct 31
Subarea 13-24 [The waters of Phillips Arm northerly of a line from Hewitt Point north easterly to Shirley Creek on the opposite shore].	Jan 01-Dec 31
Subarea 13-34 [The waters of Salmon Bay, bounded on the north by a line from Graveyard Point to the ferry landing on the opposite shore, and on the south by the downstream side of the first bridge upstream on the Salmon River].	Jun 01-Dec31
Area 14	
In Area 14, Comox Harbour - inside a line from a fishing boundary sign near Trent River to a light at the tip of Goose Spit, except the shallow shore line defined as the waters inside and shoreward of the 2 m depth contour measured below the chart datum (0 tide). You may fish from the shoreline but not for chinook.	May 01-Aug 31
In Area 14, the tidal waters within a 75 m radius of the mouth of the Trent River, the mouth of Hart (Washer) Creek and the mouth of Millard Creek.	Sep 01-Nov 30
Area 15	
No finfish closures, check for RCA's.	
Area 16	
In Area 16, the waters at the mouth of Sakinaw Creek, east of a line between boundary signs on the north and south sides of Sakinaw Bay.	Jun 15-Sep 15
Area 17	
A portion of Subarea 17-14 southerly from a line from Shaft Point on Newcastle Island to Pimbury Point on Vancouver Island and including a portion of Subarea 17-15 southwesterly of a line from Duke Point to Gallows Point on Protection Island	Jul 15-Oct 25
In Area 17, that portion of the Nanaimo River from the Cedar Bridge to the white square boundary signs approximately 400 m downstream of the Cedar Bridge.	Oct 25-Nov 30
In Area 17, the tidal waters of the Chemainus River and off the Chemainus River mouth, inside a line commencing at Bare Point on Vancouver Island to the light on North Reef, to Sherard Point on Vancouver Island, thence following the shoreline northerly to a boundary sign on the Chemainus River near the Bald Eagle Campground, thence across the river to the opposite bank, thence following the Vancouver Island shoreline northerly to the beginning point.	Jul 15-Oct 31
Area 18	
In Area 18, the waters of Cowichan Bay inside a line from a fishing boundary sign near Separation Point on Vancouver Island to Wilcuma Wharf.	Aug 01-Oct 31

WATERS	DATES
In Subareas 18-7 and 18-8, that portion of Subarea 18-8 that lies easterly of a line from a square white boundary sign at Separation Point to a square white boundary sign at Wilcuma Wharf in Cowichan Bay; and that portion of Subarea 18-7 that lies southerly of a line from a square white boundary sign on Vancouver Island, near 48°46.179'N and 123°34.654'W, to a square white boundary sign on Saltspring Island SE of Burial Islet, near 48°45.992' N and 123°33.777' W, and northerly of a line from a square white boundary sign on Saltspring Island approximately 1.5 nautical miles ESE of Musgrave Point, near 48°43.982' N and 123°31.418' W, to a square white boundary sign on Vancouver Island approximately 0.5 nautical miles NW of Cherry Point, near 48°43.197' N and 123°33.708' W.	Aug 01-Oct 15
Area 19	
In Area 19, the waters of Saanich Inlet inside a line from Whiskey Point to Verdier Point.	Sep 15-Nov 30
Subarea 19-12. [Saanich Inlet, south of Christmas Point]	Sep 01-Nov 30
Area 20	
In Area 20, those waters that are inside a line that begins at a white square boundary sign located approximately 0.8 nautical miles west of Owen Point, then to 48°32.45' N and 124°32.05' W, then to the Port San Juan Light and Whistle Buoy, then to Woods Nose, then across Port San Juan to a white square boundary sign at 48°33.23' N and 124°28.55' W.	Aug 15-Sep 07
Area 21 and 121	
Those portions of Subareas 121-1 and 121-2 inside a line from 48°34.00' north latitude and 125°06.00' west longitude, thence to 48°34.00' north latitude and 124°54.20' west longitude, thence to 48°29.62' north latitude and 124°43.40' west longitude, thence following the International Boundary between Canada and the United States of America to 48°29.55' north latitude and 124°56.20' west longitude, thence in a straight line to the point of commencement [Swiftsure Bank]	Jan 01-Dec 31
Area 22 [Nitinat Lake]	
In Area 22, those waters of Nitinat Lake that lie inside or northeasterly of a line from boundary signs at the northeastern and northwestern tips of land at the head of the lake including the tidal portion of the Nitinat River..	Aug 01-Oct 31
Area 23 and 123	
In Subarea 23-1, the lower Somass River from a line commencing at a boundary sign in upper Alberni Harbour situated at 49°14.19 north latitude and 124°50.23 west longitude thence through the southern most point of Hoik Island thence to the flashing green light at the mouth of the Somass River thence due east to a boundary sign on the opposite shore and to a line at the tidal boundary markers at Paper Mill Dam on the Somass River.	Jul 24-Sep 30
That portion of Subarea 23-3 bounded by a line west of Brooksby Point to Burrough Point at the mouth of Uchucklesit Inlet.	Jun 30 – Oct 31
That portion of Subarea 23-2 bounded on the north by line drawn 127° true from Hocking Point to a square, white fishing boundary sign on the eastern shore of Alberni Inlet, and on the south by a line from a square, white fishing boundary sign at Chesnucknuw Creek to a square, white fishing boundary sign on the western shore of Alberni Inlet.	Aug 01-Sep 30
Those portions of Subarea 23-3 bounded on the north by a line from Star Point to a white square fishing boundary sign at the mouth of Handy Creek and on the south by a line from a Mutine Point to the navigation light at Chup Point. (in Area 23).	Aug 01-Sep 30
In Subarea 23-4 that portion of Rainy Bay inside a line commencing at a boundary sign on Seddall Island south of Ecoole to a boundary sign on Chup Point	Aug 01-Sep 30

WATERS	DATES
That portion of Subarea 23-4 inside a line from a square, white fishing boundary sign at the eastern side of the entrance to Poett Nook to San Jose Islet Light, thence to a square, white fishing boundary sign at a point on Vancouver Island. [0.3 nm east of the southern tip of Congreve Island]	Aug 01-Sep 30
Area 24 and 124	
In Area 24, the waters of Kennedy Cove, inside a line between fishing boundary signs on the outer southwest corner and the outer northeast corner of the Cove.	Jan 01-Dec 31
That portion of Subarea 24-4 southerly of a line commencing on Flores Island at 49°18.005' N, 126°04.141' W then to 49°18.250' N, 126°03.132' W on McKay Island then following the McKay Island shoreline to 49°18.404' N, 126°01.939' W then to 49°19.279' N, 126°01.399' W on Vancouver Island,	Aug 01-Oct 31
Subarea 24-5	Aug 01-Oct 31
That portion of Subarea 24-6 northerly of a line commencing at Kutcous Point (49°14.961'N, 126°04.817'W) on Flores Island to 49°14.637' N, 126°00.825' W on Vancouver Island near the Chetarpe I.R.	Aug 01-Oct 31
That portion of Subarea 24-9 easterly of a line commencing at Ginnard Point (49°08.069' N, 125°51.169' W) on Meares Island to 49°07.483' N, 125°51.811' W on Vancouver Island to the Subarea boundary at Auseth Point.	Aug 01-Oct 31
Subarea 24-13 and that portion of Subarea 24-3 northerly of a line commencing at 49°24.640' N, 126°08.646' W on Vancouver Island to 49°24.562' N, 12° 07.480' W on Obstruction Island then to the Subarea boundary (commencing at 49°25.419' N, 126°07.347' W on Vancouver Island to 49°24.990' N, 126°06.655' W on Obstruction Island)	Aug 01-Oct 31
Area 25 and 125	
Subarea 25-1 [Those waters of Muchalat Inlet lying easterly of the Gold River Harbour Limit].	Jul 15-Oct 15
That portion of Subarea 25-4 inside a line drawn between square white fishing boundary signs on opposite sides of the entrance to Hisnit Inlet.	Jul 15-Oct 15
That portion of Subarea 25-5 inside a line drawn between square white fishing boundary signs on opposite sides of the entrance to Nesook bay.	Jul 15-Oct 15
That portion of Subarea 25-5 inside a line drawn between square white fishing boundary signs on the opposite sides of the entrance to Head Bay.	Jul 15-Oct 15
That portion of Subarea 25-6 NW of a line from Boston Point to Salter Point [Kendrick Inlet]	Jun 15 – Oct 15
That portion of Subarea 25-8 (Tahsis Inlet) south of a line from a boundary sign near the northerly tip of Strange Island to a boundary sign on the opposite shore of Tahsis Inlet.	July 15 - Oct 15
That portion of Subarea 25-8 northerly of a line from Mozino Point to a fishing boundary sign on the opposite shore.	Jul 15-Oct 15
Subarea 25-10 [Zeballos Inlet northerly of boundary signs near Little Zeballos River]	Jul 15-Oct 15
Subarea 25-16 [Tahsis].	Jul 15-Oct 15
Area 26 and 126	
No finfish closures, check for RCA's.	
Area 27 and 127	
In Area 27, the portion of Varney Bay from the Marble River tidal boundary downstream to the fishing boundary signs at the entrance of Varney Bay.	Jul 01-Dec 31
Area 28	

WATERS	DATES
In Area 28, the waters of Howe Sound easterly of a line drawn from a fishing boundary sign 300 m north of the mouth of Britannia Creek to the southern tip of Minaty Bay.	May 30-Sep 30
In Area 28, the waters of Mannion Bay (Deep Bay) on Bowen Island, lying westerly of a line between two fishing boundary signs near the entrance to Mannion Bay.	Sep 01-Dec 31
That portion of Subarea 28-2 bounded by a line commencing from the southernmost point of Whytecliff Park, thence in a straight line to a point located 100 m east of the most south easterly point of Whyte Islet, thence following the southern shoreline of Whyte Islet at a distance of 100 m to a point lying 100 m from the most south westerly point of Whyte Islet, thence in a straight line to a point lying 100 m west of White Cliff Point, thence following the shoreline at a distance of 100 m in a northerly direction to a point 100 m north of Lookout Point, thence following the shoreline at a distance of 100 m in an easterly direction to a point 100 m perpendicular to the most northerly point of Whytecliff Park, thence to the northernmost point of Whytecliff Park on the mainland [Whytecliff Park].	Jan 01-Dec 31
That portion of Subarea 28-4 east of a line drawn from the white fishing boundary sign located at the south shore of Porteau Cove, northerly in a straight line to the white fishing boundary sign located on the north shore of Porteau Cove [Porteau Cove].	Jan 01-Dec 31
That portion of Subarea 28-6 bounded by a line commencing at the southwest entrance to Starboat Cove, thence seaward in a southwest direction for 85 m, thence westerly following the shoreline for 100 m, thence to the southernmost tip of Point Atkinson (125 m east of the lighthouse) [Point Atkinson].	Jan 01-Dec 31
Area 29	
No finfish closures, check for RCA's.	

Appendix 7: Freshwater Salmon Sport Fishing Guidelines

REGION 1: VANCOUVER ISLAND

Please read these guidelines in conjunction with the *Freshwater Fishing Regulations Synopsis*.

1. Unless otherwise stated in the table, the daily limit in all waters of Region 1 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained Chinook and sockeye must measure 30 cm or more from tip of nose to tail fork, and all coho must measure 25 cm or more.
4. A single, barbless hook is in effect year round for all streams in Region 1.
5. There is an annual limit of 10 adult Chinook from all non-tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal Angling Licence. An “adult Chinook” in Region 1 is defined as being over 50 cm.
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Campbell River	Downstream of the confluence with the Quinsam River.	Pink	Aug 15-Sept 15	4 per day.
		Coho	Oct 01-Dec 31	4 per day, only 2 over 35 cm, both of which must be hatchery marked.
Cayeghle River	Including Colonial River	Coho	Jan 01-Dec 31	1 per day.
Cluxewe River		Coho	Jan 01-Dec 31	2 hatchery marked fish per day.
Chemainus River		Coho	Jan 01 – Dec 31	2 per day, hatchery marked fish only
Colonial River	See Cayeghle River	Coho	Jan 01-Dec 31	1 per day.
Conuma River		Chinook	Aug 25-Dec 31	2 per day, only 1 over 77 cm
		Coho	Aug 25-Dec 31	2 per day
Cowichan River	Downstream from Skutz Falls to the Highway No.1 bridge.	Chinook	Jan 01-Dec 31	4 per day, none over 50 cm.
		Coho	Jan 01-Dec 31	1 per day, none over 35cm.
		Coho	Oct 29- Nov 30	Opportunities on coho over 35 cm may become available. Contact your local DFO office.
	Lower Marie Canyon (described as 50 metres below the confluence with the unnamed creek which drains Mayo Lake) downstream to the tidal water boundary	All	Aug 1– Nov. 15	No Fishing
	Fly Fishing only Downstream of the weir at Cowichan Lake, to lower Marie Canyon (described as 50 metres below the confluence with the unnamed creek which drains Mayo)	All	Aug 1– Nov. 15	Fly Fishing Only

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Goldstream River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Koksilah River	Including tributaries.	Chinook	Jan 01-Dec 31	4 per day, none over 50 cm.
		Coho	Jan 01-Dec 31	1 per day, none over 35 cm.
Nahwitti River		Coho	Jan 01-Dec 31	1 per day.
Nanaimo River	Including tributaries, except in the area described below	Coho	Oct 15-Mar 31	1 per day, none over 35 cm.
	Cedar Road Bridge upstream for approximately 400 meters to square white boundary signs located near the Hwy 19 bridge crossing.	All	Sep 15-Oct 30	<i>No fishing for salmon.</i>
	Upstream side of the Cedar Bridge, upstream to the end of Boswell Rd (commonly known as "Firehall Pool").	Coho	Nov 01-Mar 31	1 per day, none over 35 cm.
		Chum	Nov 01-Nov 30	2 per day.
Nitinat River	Upstream of Parker Creek	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Downstream of Parker Creek, except in the areas and times described below.	Chinook	Aug 15-Sep 30	2 per day, only 1 over 77 cm
		Coho	Oct 15-Dec 31	2 per day
		Chum	Oct 15-Dec 31	2 per day.
	Within 100 meter radius of the Nitinat River hatchery water intake and fishway.	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Between fishing boundary signs located approximately 100 meters above and below Red Rock Pool.	All	Aug 25-Dec 31	<i>No fishing for salmon.</i>
	From 50 meters upstream to 50 meters downstream of the Nitinat River Bridge.	All	Aug 25-Dec 31	<i>No fishing for salmon.</i>
Puntledge and Courtenay Rivers	Between boundary signs located 100 meters upstream and downstream of the confluence with Morrison Creek.	All	Oct 01-Nov 30	<i>No fishing for salmon.</i>
	Downstream from a boundary marker located 75 meters downstream of the Puntledge River Hatchery counting fence.	Chinook	Oct 01-Nov 30	1 per day.
		Coho	Oct 01-Nov 30	4 per day, only 2 over 35cm.
		Chum	Oct 01-Nov 30	2 per day.

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Qualicum River		Chinook	Aug 01-Oct 15	4 per day, none over 62 cm
			Oct 16-Dec 31	4 per day, only 2 over 62cm.
		Coho	Jun 16-Dec 31	4 per day, only 2 over 35cm.
		Chum	Oct 01- Nov 30	1 per day.
	From the Reserve boundary below the Big Qualicum hatchery downstream to the Highway 19 A Bridge.	All	Nov 1-Dec 31	<i>No fishing for salmon.</i>
	Downstream of the E&N Railway Bridge	All	Dec 01-Jun15	<i>No fishing for salmon</i>
Little Qualicum River		Chinook	Oct 01-Nov 30	1 per day.
		Chum	Oct 01-Nov 30	1 per day.
		Coho	Oct 01-Nov 30	2 per day.
Quatse River		Coho	Jun 15-Mar 31	2 hatchery marked fish per day.
Quinsam River		Coho	Oct 01-Mar 31	4 per day, only 2 over 35 cm, both of which must be hatchery marked
		Pink	Aug 15-Sep 15	4 per day, none less than 30 cm.
Reay Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
San Juan River		Coho	Oct 01-Dec 31	Opportunities dependant on in-season run size (coho over 35 cm).
Seymour River		Coho	Jan 01-Dec 31	2 per day.
Shawnigan Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Somass River	Including Stamp River and tributaries, except in those areas and times listed below	Chinook	Aug 25-Dec 31	2 per day, only 1 over 77 cm.
		Coho	Aug.25-Dec 31	2 per day
	Tidal boundary at Papermill Dam on the Somass River to boundary signs approximately 1.0 km upstream (Falls Road Gravel Pit and the southernmost end of Collins Farm/ArrowVale Campground-Hector Road)	All	Aug 25-Nov 15	<i>No fishing</i>
	Upstream of boundary signs located approx 500 meters downstream of Stamp River Falls to boundary signs located approximately 200 m. upstream (above) Stamp River Falls.	All	Jun 15-Nov 15	<i>No fishing.</i>

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
	From boundary signs on either side of the Stamp River located at the inlet to the Stamp River (hatchery) lagoon downstream approximately 750 meters to boundary signs on either side of the Stamp River	All	Aug 25-Oct 31	<i>No fishing.</i>
	From boundary signs on either side of the Stamp River at the Powerline Crossing downstream approximately 500 meters to boundary signs on either side of the Stamp River at the inlet to the Stamp River (hatchery) lagoon.	All	October 01 until October 14	<i>No fishing</i>
Stamp River - see Somass River				
Washlawlis River		Coho	Jan 01-Dec 31	1 per day.
Waukwaas River		Coho	Jan 01 Dec 31	1 per day.

FRESHWATER SALMON SPORT FISHING REGULATIONS REGION 2: LOWER MAINLAND

1. Unless otherwise stated in the table, the daily limit in all waters of Region 2 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained coho must measure 25 cm or more from tip of nose to tail fork, and all retained Chinook, chum, pink, and sockeye must measure 30 cm or more from tip of nose to tail fork.
4. A single, barbless hook is in effect year round for all streams in Region 2.
5. There is an annual limit of 10 adult Chinook from all non-tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal Angling Licence. An "adult Chinook" in Region 2 is defined as being over 50 cm except in the following areas where an "adult Chinook" is defined as being over 62 cm:
 - a) the Fraser River downstream of the powerline crossing approximately 1 km upstream of the Aggasiz/Rosedale bridge from Sep 01 - Dec 31,
 - b) the Chilliwack/Vedder River (including Sumas River); the Harrison River and the Capilano River.
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Alouette River and tributaries	Upstream of 216th St. including the North Alouette River and tributaries to that part	Chinook	Apr 01-Jun 30	<i>No fishing for Chinook.</i>
			Jul 01-Mar 31	1 per day
	Downstream of a line between two triangular white fishing boundary signs in Allco Park	Coho	Apr 01-Aug 31	<i>No fishing for coho.</i>
		Coho	Oct 01-Dec 31	1 hatchery marked fish per day.
		Chum	Oct 01-Dec 31	1 per day
Ashlu River - See Squamish River				
Birkenhead River		All	Aug 1– Sep 15	<i>No fishing for salmon.</i>
Booth Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Brunette River	Downstream of Cariboo Rd.	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Little Campbell River	Downstream of 12 th Ave. including tributaries to that part	Chinook	Jan 01-July 31	<i>No fishing for Chinook.</i>
			Aug 01-Sep 15	1 hatchery marked fish per day.
			Sep 16-Dec 31	<i>No fishing for Chinook.</i>
Capilano River	Including tributaries	Coho	Jan 01-Aug 31	4 hatchery marked fish per day, only 2 over 30 cm.
			Sep 01-Dec 31	4 hatchery marked fish per day.
		Chinook	Jan 01-Dec 31	4 per day, only 1 over 62 cm.
Chapman Creek	Upstream of tidal water boundary signs located below the Highway 101 Bridge	Coho	Jul 01-Mar 31	4 hatchery marked fish per day, only 2 over 35 cm.
		Chinook	Jul 01-Mar 31	4 per day, only 2 over 50 cm.
Cheakamus River		Coho	Sep 15-Dec 31	1 hatchery mark fish per day

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Chehalis River	Downstream of the logging bridge 2.4 km downstream of Chehalis Lake, including tributaries to that part	All	Sep 01-Dec 31	Daylight hours only.
		Coho	Jul 01-Mar 31	4 hatchery marked fish per day.
		Chinook	Jan 01-May 31	<i>No fishing for Chinook.</i>
			Jun 01-Aug 10	4 per day, only 1 over 50 cm.
			Aug 11-Sep 15	<i>No fishing for Chinook.</i>
		Sep 16-Dec 31	4 per day, only 1 over 62 cm.	
Chum	Nov 1-Nov 30	2 per day.		
Chehalis River Hatchery	From the hatchery outlet downstream to the confluence with the Chehalis/Harrison Rivers	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Chilliwack/Vedder River (including Sumas River)				
	From a line between two triangular boundary signs on either side of the Chilliwack River 100 metres from the confluence of the Chilliwack River and Slesse Creek downstream including that portion of the Sumas River from the Barrow Town Pump Station downstream to boundary signs near the confluence with the Fraser River	All	Sep 01-Dec 31	Daylight hours only.
		Coho	Jul 01-Mar 31	4 hatchery marked fish per day.
		Chum	Jul 01-Mar 31	1 per day.
		Chinook	July 01-Dec 31	4 per day, only 1 over 62 cm
Cogburn Creek		Coho	Sep 01-Mar 31	2 hatchery marked fish per day.
Coquitlam River		Chinook	Apr 01-Jun 30	<i>No fishing for Chinook.</i>
			Jul 01-Mar 31	1 per day
		Coho	Oct 01-Dec 31	1 hatchery marked fish per day.
Dewdney Slough - See Nicomen Slough				
Elaho River - See Squamish River				

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Fraser River	From the downstream side of the CPR Bridge at Mission upstream to the Highway #1 Bridge at Hope, except Landstrom Bar (described below) which is closed to all angling from May 1 to Oct. 31.	All	Jan 01-Jul 15	<i>No fishing for salmon.</i>
		All	Jul 01-Dec 31	Daylight hours only.
		All	Sep 09-Oct 11	<i>Bait ban</i>
		Coho	Sep 09-Oct 11	<i>No fishing for coho</i>
		Coho	Oct 12 -Dec 31	2 hatchery marked fish per day.
		Chinook	Jul 16 – Aug 31	Opportunities expected.
			Sep 01-Dec 31	4 per day, only 1 over 62 cm.
		Chum	Jul 16-Dec 31	Opportunities expected
		Sockeye	August	Opportunities expected.
	From the downstream side of the Highway #1 Bridge at Hope upstream to the Alexandra Bridge.	All	Jan 01-Jul 15	<i>No fishing for salmon.</i>
		All	Jul 01-Dec 31	Daylight hours only.
		All	Sep 11-Oct 16	<i>Bait ban</i>
		Coho	Sep 11-Oct 16	<i>No fishing for coho</i>
		Coho	Oct 17-Dec 31	2 hatchery marked fish per day.
		Chinook	Jul 16-Aug 31	Opportunities expected.
			Sep 01-Dec 31	4 per day, only 1 over 62 cm.
		Chum	Jul 16-Dec 31	Opportunities expected.
		Sockeye	August	Opportunities expected.
	Landstrom Bar is those waters of the Fraser River inside a line beginning at a fishing boundary sign on the eastern end of Landstrom Bar, then to a fishing boundary sign on the opposite bank, then to a fishing boundary sign at the southern end of Croft Island, then westerly to a fishing boundary sign on the nearest bank of the river, then following the river bank to the beginning point.			
Harrison River	From the outlet of Harrison Lake downstream to the Highway 7 bridge	All	Jul 01-Dec 31	Daylight hours only.
		Coho	Sep 01-Mar 31	4 hatchery marked fish per day.
		Chum	Jan 01-Dec 31	2 per day.
	From the Highway 7 bridge downstream to the confluence with the Fraser River	All	Jul 01-Dec 31	Daylight hours only.
		Coho	Sep 01-Mar 31	4 hatchery marked fish per day.
		Chinook	Sep 01-Dec 31	4 per day, 1 over 62 cm
		Chum	Jan 01-Dec 31	2 per day.
		Sockeye	August	Opportunities expected.
Hope Slough		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Inch Creek	From the hatchery outlet to the confluence with Norrish Creek/Nicomen Slough.	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Indian River		Chinook	Jan 01-Dec 31	<i>No fishing for Chinook.</i>
Kanaka Creek	Upstream of the 112th Ave. bridge	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Downstream of the 112th Ave. bridge	Coho	Nov 1-Nov 30	1 hatchery marked fish per day.
Khartoum Lake		All	Jan 01-Dec 31	Single barbless hook.
		Chinook	Jan 01-Dec 31	4 per day.
		Coho	Jan 01-Dec 31	4 per day.
Lois Lake		All	Jan 01-Dec 31	Single barbless hook.
		Chinook	Jan 01-Dec 31	4 per day.
		Coho	Jan 01-Dec 31	4 per day.

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Mamquam River		Coho	Sep 15-Dec 31	1 hatchery marked fish per day
McLennan Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Nicomekl River	Downstream of 208th Street	Chinook	Sep 01-Dec 31	1 per day
		Coho	Oct 01-Dec 31	1 hatchery marked fish per day.
Nicomen (including Dewdney) Slough	From the confluence of Siddle (Bell's) Creek downstream to the Fraser River	Coho	Jan 01-Dec 31	4 hatchery marked fish per day, only 2 over 35 cm.
	From the Highway 7 bridge at Dewdney downstream to the Fraser River	Chum	Jan 01-Dec 31	2 per day.
Norrish (Suicide) Creek		Coho	Jan 01-Dec 31	4 hatchery marked fish per day, only 2 over 35 cm.
Pitt River	Upper and Lower, including tributaries	Chinook	Jan 01-Dec 31	<i>No fishing for Chinook.</i>
Sakinaw Lake	East of a line from a boundary sign north of the Sakinaw boat launch, southwesterly to a boundary sign at 49°11.50'N and 123°58.45'W (this encompasses the bay at Haskins Creek and the unnamed bay southwest of the boat launch); and the body of water known as Bear Bay, east of 124°02.13'W (marked by boundary signs)	All	Nov 1-Dec 31	<i>No fishing for salmon.</i>
Scott (Hoy) Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Serpentine River	Downstream of 168 th Street	Chinook	Aug 1-Dec. 31	1 per day.
		Coho	Oct 01-Dec 31	1 hatchery marked fish per day.
		Chum	Oct 01-Oct 31	1 per day.
Seymour River		All	Aug 1-Dec 31	single barbless hook with no greater than 15 mm from point to shank
		Chinook	Sep 01-Dec 31	2 per day, none over 62 cm.
		Coho	Jan 01-Dec 31	1 hatchery marked fish per day.
Silverdale Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Squamish River (Including Ashlu, Elaho, and Powerhouse Channel) See also Cheakamus River and Mamquam River.	Downstream of the boundary signs at the powerline crossing approx. 1.5 km upstream of the confluence with the Cheakamus	Coho	Sep 15-Dec 31	1 hatchery marked fish per day.
Stave River	Downstream of B.C. Hydro Dam to the CPR Railway Bridge	Coho	Jan 01-Dec 31	4 hatchery marked fish per day, only 2 over 35 cm.
		Chinook	Jan 01-Dec 31	1 per day.
		Chum	Jan 01-Dec 31	2 per day.

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Sumas River - See Chilliwack River				
Vedder River - See Chilliwack River				

FRESHWATER SALMON SPORT FISHING OPPORTUNITIES

REGION 3: THOMPSON-NICOLA

Please read these regulations in conjunction with the *Freshwater Fishing Regulations Synopsis*.

1. Unless otherwise stated in the table, the daily limit in all waters of Region 3 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained Chinook and sockeye must measure 30cm or more from tip of nose to tail fork.
4. A single, barbless hook is in effect year round for all streams in Region 3.
5. There is an annual limit of 10 adult Chinook from all non tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal Angling licence. An "adult Chinook" in Region 3 is defined as being over 50 cm.
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
All	Any lake or stream or part thereof in Region 3, unless otherwise stated below	Coho, sockeye, pink and chum	Jan 01-Dec 31	<i>No fishing for coho, sockeye, pink or chum.</i>
Adams Lake	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Adams River	Upstream and downstream of Adams Lake	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Albred River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Anstey River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Barriere River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Bonaparte River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Bridge River	downstream from Road 40 bridge to the confluence of the Fraser R. (see also Fraser R. opportunity)	Chinook	To be determined	Opportunities expected
		All	Jan 01-Jun 20 Jul 17-Dec 31	<i>No fishing for salmon.</i>
Cayoosh Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Clearwater River	from Clearwater Lake downstream to the confluence of the North Thompson R. (except CLOSED from Murtle R downstream to 35km post from Aug 16 - 31 to protect Mahood R. Chinook)	Chinook	To be determined	Opportunities expected
		All	Sep 01-Dec 31	<i>No fishing for salmon.</i>
Coldwater River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Deadman River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Dunn Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Eagle River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Finn Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Fraser River	mainstem of the Fraser R. in Region 3 except for that portion of the Fraser R. described below	Chinook	July 15 –Sept 20	Proposed 4 per day, none over 50 cm.
	from the confluence of the Fraser/Seton River downstream to fishing boundary signs located on both sides of the river approximately 4 km downstream of the town of Lillooet.	Chinook	To be determined	Opportunities expected.
		Sockeye	2010	Opportunities expected
	from the confluence with the Bridge R. downstream to the BC Railway bridge, 2km north of Lillooet (<i>see also Bridge River opportunity</i>)	Chinook	To be determined	Opportunities expected
	Upstream of Thompson River confluence	All	Sep 28-Dec 31	<i>No fishing for salmon.</i>
	Downstream of Thompson River confluence	All	Sep 21-Dec 31	<i>No fishing for salmon.</i>
Lemieux Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Little Shuswap Lake – See Shuswap Lake				
Louis Creek	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Mahood River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Maka Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Mara Lake – See Shuswap Lake				
Nahatlatch River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Nicola River	Upstream and downstream of Nicola Lake	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
North Thompson River	downstream of Station Road Bridge in Clearwater to the Ferry crossing at Little Fort.	Chinook	To be determined	Opportunities expected
	Mainstem river	All	Sep 23-Dec 31	<i>No fishing for salmon.</i>
Salmon River	Upstream of CPR Bridge	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Seymour River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Shuswap Lake	Including Little Shuswap and Mara Lakes (see exception under South Thompson River and for Little Shuswap Lake)	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
South Thompson River	Between Little Shuswap Lake and Hwy 5 Bridge at Kamloops	All	Jan 01-Dec 31	<i>No fishing for salmon. (See Chinook exception below).</i>
	From the green can buoy near outlet of Little River to 100m downstream of Campbell Creek	Chinook	Aug 05-Sep 22	4 per day, only 2 over 50 cm. Monthly quota is 6 over 50 cm.
		All	Sep 23-Dec 31	<i>No fishing for salmon.</i>

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
Thompson River	From Kamloops Lake downstream to the confluence with the Fraser River	All	Jan 01-July 15 Sep 21-Dec 31	<i>No fishing for salmon.</i>
	from inlet of Kamloops Lake downstream to the confluence with the Fraser River	Chinook	July 15 –Sept 20	4 per day, none over 50 cm (See exceptions below).
	from the upstream side of the mouth of the Nicola R. downstream to the Hwy 8 bridge at Spences Bridge	Chinook	Jan 01 – August 21	No Fishing for Salmon
	from confluence with Bonaparte River to boundary sign approx. 1 km downstream. North Bank of the river only	Chinook	To be determined	Opening dependent on in-season Chinook run size to Bonaparte fishway by July 25. Check with your local DFO office for updates.
	from Hwy 8 bridge at Spences Bridge upstream to a fishing boundary sign located approx. 1 km downstream of Martel (west side of river only). NOTE: These waters open to fishing are subject to change.	Chinook	Aug 22-Sept 20	4 per day, only 1 over 50 cm. Check with your local DFO office for updates.
	Kamloops Lake	Chinook	Aug 22 - Sept 3	4 per day, only 1 over 50 cm. Check with your local DFO office for updates.
	Five locations i) Savona – Lake outlet to 1 km downstream of the Hwy bridge. ii) Walhachin bridge – 1km upstream and downstream iii) Juniper Beach park upstream boundary to approx 1.5 km downstream. iv) Ashcroft – 1km upstream of mouth of Bonaparte R. v) Existing Martel Chinook fishery boundary to Goldpan Provincial Park.	Sockeye Chinook	August 22 – September 20	Sockeye - Opportunities expected Chinook 4 per day, only 1 over 50 cm

FRESHWATER SALMON SPORT FISHING OPPORTUNITIES

REGION 5A: CARIBOO

(Part A, Fraser River Watershed, Management Units 5-1 to 5-5 and 5-12 to 5-16)

Please read these regulations in conjunction with the *Freshwater Fishing Regulations Synopsis*.

1. Unless otherwise stated in the table, the daily limit for salmon in all waters of Region 5 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained Chinook must measure 30 cm or more from tip of nose to fork in tail (fork length).
4. A single, barbless hook is in effect year round for all streams in Region 5.
5. There is an annual limit of 10 adult Chinook from all non-tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal Angling Licence. An "adult Chinook" in Region 5 is defined as being over 50 cm (fork length).
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
All	Any lake or stream or part thereof in Region 5A unless otherwise stated below	Sockeye, Pink, Coho and Chum	Jan 01-Dec 31	<i>No fishing for sockeye, pink, coho or chum.</i>
Baker Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Cariboo River	From confluence of the Quesnel River to the confluence of Seller Creek.	Chinook	Jul 27-Aug 18	Opportunities expected.
Chilcotin Lake		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Chilcotin River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Chilko River	From Chilko Lake downstream to boundary signs 1.5 km upstream of Siwash Bridge (12 km upstream from Chilcotin River junction).	Chinook	Jul 25-Aug 16	Opportunities expected.
Elkin Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Fraser River	Including tributaries	All	Sep 21-Dec 31	<i>No fishing for salmon.</i>
Horsefly River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
McKinley Creek	Downstream of McKinley Lake	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Mitchell River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Quesnel Lake		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Horsefly Bay located on Quesnel Lake inside a line connecting fishing boundary signs located on opposite shorelines at the entrance to the bay.	Sockeye	August	Opportunities expected.
Quesnel River	Downstream of Poquette Creek	Chinook	Jul 15-Sep 1	Opportunities expected.

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
	Downstream from boundary signs at the mouth of Quesnel Canyon to the Johnston Subdivision bridge near Quesnel, BC	Sockeye	August	Opportunities expected.
Taseko River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Westroad (Blackwater) River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>

FRESHWATER SALMON SPORT FISHING OPPORTUNITIES REGION 7: OMINECA-PEACE

Please read these regulations in conjunction with the *Freshwater Fishing Regulations Synopsis*.

1. Unless otherwise stated in the table, the daily limit in all waters of Region 7 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained Chinook must measure 30 cm or more from tip of nose to fork in tail (fork length).
4. A single, barbless hook is in effect year round for all streams in Region 7.
5. There is an annual limit of 10 adult Chinook from all non-tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal Angling Licence. An "adult Chinook" in Region 7 is defined as being over 50 cm (fork length).
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
All	Any lake or stream or part thereof in Region 7 unless otherwise stated below.	Sockeye, Pink, Coho and Chum	Jan 01-Dec 31	<i>No fishing for sockeye, pink, coho or chum.</i>
Bowron River	From the Forestry Road bridge nearest to the Fraser River, upstream to the Bowron Forest Road Bridge crossing near Haggen Creek.	Chinook	Jul 15-Aug 15	Opportunities expected.
Endako River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Fraser River	From power lines crossing near College Heights upstream to the Northwoods Bridge	Chinook	Jul 10-Jul 25	Opportunities expected.
	Above McLennan River	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Mainstem river	All	Sep 30-Dec 31	<i>No fishing for salmon.</i>
Goat River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Holmes River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
McGregor River		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Nechako River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
	Upstream from the boundary signs at the confluence with the Fraser river to the Highway 97 Bridge.	Sockeye	August	Opportunities anticipated.
Salmon River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Slim Creek	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Stuart River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Swift Creek	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Westroad (Blackwater) River	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>

FRESHWATER SALMON SPORT FISHING OPPORTUNITIES REGION 8: OKANAGAN

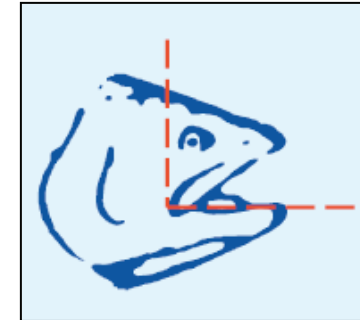
Please read these regulations in conjunction with the *Freshwater Fishing Regulations Synopsis*.

1. Unless otherwise stated in the table, the daily limit in all waters of Region 8 is zero (0).
2. The aggregate daily limit for all species of Pacific salmon (other than kokanee) from tidal and non-tidal waters combined is four (4).
3. All retained Chinook must measure 30 cm or more from tip of nose to fork in tail (fork length).
4. A single, barbless hook is in effect year round for all streams in Region 8.
5. There is an annual limit of 10 adult Chinook from all Non-tidal waters. All retained adult Chinook must be recorded immediately on the back of your Provincial Non-tidal angling licence. An "adult Chinook" in Region 7 is defined as being over 50 cm (fork length).
6. **IT IS IMPORTANT TO NOTE THAT CHANGES TO THE TABLE BELOW MAY OCCUR IN-SEASON AND TO CHECK WITH YOUR LOCAL DFO OFFICE BEFORE FISHING TO BECOME AWARE OF ANY IN SEASON CHANGES.**

WATERS	SPECIFIC AREA	SPECIES	DATES	LIMITS / GEAR
All	Any lake or stream or part thereof in Region 8, unless otherwise stated below	Sockeye, pink, coho and chum	Jan 01-Dec 31	<i>No fishing for sockeye, pink, coho or chum.</i>
Bessette Creek	Including tributaries	All	Jan 01-Dec 31	<i>No fishing for salmon.</i>
Mabel Lake	South of fishing boundary signs located on opposite shores approximately 1 km from Wap Creek.	Chinook	12:00 Jul 25- 12:00 Sep 12	4 per day, only 2 over 50 cm. Monthly quota is 4 over 50cm, including all Shuswap River and Mabel Lake Chinook.
Shuswap River	Between Shuswap Falls and Mabel Lake.	Chinook	12:00 Jul 25 - 12:00 Aug 15	4 per day, only 2 over 50 cm. Monthly quota is 4 over 50cm, including all Shuswap River and Mabel Lake Chinook.
	Upstream from signs above Mara Bridge to Mabel Lake.	Chinook	12:00 Jul 25 - 12:00 Sep 12 05:00-22:00 hours only	4 per day, only 2 over 50 cm. Monthly quota is 4 over 50cm, including all Shuswap River and Mabel Lake Chinook.
	All sections	Chinook	12:00 Sep 12 – Dec 31	<i>No fishing for Chinook</i>
Wap Creek		All	Jan 01-Dec 31	<i>No fishing for salmon.</i>

Appendix 8. Chinook and coho head retention, storage and delivery requirements.

1. **Head Retention:** Troll vessel masters that are freezing their catch at sea must retain all heads from all Chinook and coho kept. At a minimum, the portion of each head retained must include the upper portion of the head extending from the tip of the snout to a cut travelling from the top of the head, passing 1 centimetre behind the eye, and ending at the back corner of the mouth. The figure to the right indicates the minimum portion of each head that must be retained.



2. **Head Storage:** Heads must be stored using special purpose bags and labels available free of charge from the Department. These bags and labels are supplied free of charge by the Department and can be obtained in three ways:
 - a) Pick them up at Pacific Fishery Licencing Unit offices in Nanaimo, Prince Rupert, and Vancouver.
 - b) Make arrangements for delivery by contacting the Department toll-free at 1-866-483-9994.
 - c) Get them from coded-wire tag samplers at fish plants.

Each bag must contain only the heads from a single week of fishing (where weeks run from Sunday to Saturday). This requirement had been added to maximize the run timing information obtained through coded wire tag sampling of the heads.

Finally, heads must be kept frozen until delivery.

3. **Head delivery:** The vessel master shall ensure that all bags containing heads are offloaded at the first designated fish landing station at which Chinook and/or coho catch is offloaded. All bags must be securely closed, and labelled with vessel name and V.R.N., the first and last day of fishing on which the heads contained in the bag were caught, and the Management Area(s) in which those salmon were caught. Contact J O Thomas & Assoc. for sampling and collection details: phone toll-free 1-800-663-3344. Please call one day in advance of offload.

For exact head retention requirements, trollers freezing their catch should refer to their Conditions of Licence.

Appendix 9: Salmon Logbook Examples

SALMON GILLNET Logbook I.D. # **G** **SAMPLE** Report Catch to: 1-(888) 387-0007 Record all catch in pieces **Page #**

Vessel Name: Pacific Blue		VRN (CFV#): 12346		Vessel Master Name: Dan Doe		FIN: #####										
Net Details		Type ¹ : A	# Strands ² : 6	Length: 200 (fathoms)	Weedline Depth ³ : 30cm	Hang Ratio: 3 :1	Mesh Size ³ : 4 7/8" # Meshes: 90									
Date	Mgmt. Area	Sub-area(s)	Hours fished	# of sets	⁴ Kept or Released	Sockeye	Coho	Pink	Chum	Chinook	Steel-head	Atlantic	Dogfish	Sturgeon	⁵ Other Fish	⁶ Non fish
3 Aug	4	4-12	5.5	5	Kept	4	0	23	127	0	0	0	0	X	0	Yes
Trip ID #: ⁷ FOS-12345					Rel.	0	9	0	0	0	0	0	0	0	0	No
Comments: 2 birds killed in 10AM set, kept for research program. Probably surf scoters.															Confirmation #: FOS-12346	
5 Aug	4	4-12, 4-15	4	3	Kept	73	0	245	4	0	0	1	0	X	0	Yes
Trip ID #: ⁷ FOS-12480					Rel.	0	2	0	0	0	0	0	2	0	2M, 1 salmon shark	No
Comments: Both coho put in rev. tank, one died, one released in good condition															Confirmation #: FOS-12367	
5 Aug	5	5-1	2	3	Kept	88	0	116	7	0	0	2	0	X	0	Yes
Trip ID #: ⁷ FOS-12480					Rel.	0	0	0	0	0	1	0	0	0	11 M, 2 R	No
Comments: Steelhead released in good condition. 2 sea lions released alive around 11AM.															Confirmation #: FOS-12372	
8 Aug	29	29-13	6	6	Kept	163	0	328	0	0	0	0	0	X	0	Yes
Trip ID #: ⁷ FOS-12773					Rel.	0	0	0	0	3	1	0	0	0	0	No
Comments: 4 coho put in rev. tank, 2 of them died, 2 released in good condition															Confirmation #: FOS-12502	
9 Aug	29	29-13	6	6	Kept	205	0	493	0	0	0	0	0	X	0	Yes
Trip ID #: ⁷ FOS-12773					Rel.	0	0	0	0	1	1	0	0	0	0	No
Comments: Net changed this AM to one with weedline at 0" (otherwise the same).															Confirmation #: FOS-12521	
					Kept									X		Yes
Trip ID #:					Rel.											No
Comments:															Confirmation #:	

- Net Types:** enter 'A' for Alaska Twist, 'M' for Multi Strand or 'C' for Combination.
- Enter number of strands if net is 'Alaska Twist' type mesh.
- Give measurement units (in or " = inches, cm = centimeters, mm = millimeters).
- Kept** are species retained on board; **Released** are species returned to the ocean.
- Other Species:** M= Mackerel, L= Lingcod, H= Halibut, R= Rockfish. Give full name for other species.
- Circle Yes or No as appropriate if any **birds, marine mammals, or turtles** were encountered. Give time of capture and species details in comments.
- Fill in if Start Fishing Report is required by Licence Condition.

2010

Appendix 9: Salmon Logbook Examples

SALMON TROLL Logbook I.D. # **T** **SAMPLE** Report Catch to: 1-(888) 387-0007 Record all catch in pieces **Page #**

Vessel Name: Pacific Blue		VRN (CFV#): 12346		Vessel Master Name: Dan Doe		¹ FIN: #####									
Date	Mgmt. Area	Zone or Subarea	<input type="checkbox"/> Hours fished	Catch frozen or iced?	² Kept or Released	Sockeye	Coho	Pink	Chum	³ Legal Sized Chinook	³ Sublegal Sized Chinook	⁴ Grilse	Atlantic	⁵ Rockfish	⁶ Other Species
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														Confirmation #: FOS-12346	
15	Jul	4	5	8½	(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	2 Yelloweye, 6 unknown rockfish 0	
Comments:														Confirmation #: FOS-12346	
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:														Confirmation #: FOS-12349	
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	0	0	0	0	1	0	0	0	1L
Comments: 1 Coho dead, 5 released in good condition														Confirmation #: FOS-12402	
18	Jul	5	3	5½	F or I	Kept 0	0	0	0	12	X	X	0	0	0
Trip ID #: FOS-12398					Rel.	0	0	0	0	0	0	0	0	0	2D
Comments:														Confirmation #: FOS-12402	
19	Jul	5	3	11	F or I	Kept 0	0	0	0	7	X	X	0	0	0
Trip ID #: FOS-12398					Rel.	0	1	0	0	0	1	3	0	3 Canary	0
Comments:														Confirmation #: FOS-12491	

1. Enter the vessel master's Fisher Identification Number.
2. **Kept** are species retained on board; **Released** are species returned to the ocean.
3. As defined in the applicable Fishery Notice.
4. **Grilse** are juvenile salmon under 30 cm.
5. If possible, rockfish are to be identified by species (using names in accompanying guide); if unsure of species, record as Unknown Rockfish.
6. Other Species: L=Lingcod, H=Halibut, D=Dogfish, M=Mackerel, S=Steelhead, B=Bird.

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Appendix 9: Salmon Logbook Examples

SALMON SEINE Logbook I.D. # S SAMPLE Report Catch to: 1-(888) 387-0007 Record daily catch in pieces Page #																
Vessel Name:		Pacific Blue		VRN (CFV#):		12346		Vessel Master Name:		Dan Doe		¹ FIN:		#####		
Daily Catch Records																
Date		Mgmt. Area	Sub-area(s)	Hours fished	# of sets	² Kept or Released	Sockeye	Coho	Pink	Chum	Adult Chinook	³ Jack Chinook	Steel-head	Atlantic	⁴ Non-fish	⁵ Other Fish
Day	Mon.															
14	Aug	3	3-3, 3-2	8	5	Kept	42	0	431	0	0	0	0	6	<input checked="" type="radio"/> Yes	0
Trip ID #: ⁷						Rel.	0	3	0	12	2	0	0	0	No	0
Comments: 2 scoters released alive at 10 AM, 1 coho clipped, 2 coho dead, 1 alive at release												DCR Confirmation #: ⁶ FOS-12346				
15	Aug	4	4-5	5½	2	Kept	38	0	850	0	0	0	0	0	<input checked="" type="radio"/> Yes	0
Trip ID #: ⁷						Rel.	0	0	0	2	1	0	1	0	No	4 D, 1 L, 1 salmon shark
Comments: 1 harbour seal released, steelhead revived in tank, then released in good condition												DCR Confirmation #: ⁶ FOS-12358				
19	Aug	4	4-5	9	4	Kept	53	0	560	0	0	0	0	0	Yes	0
Trip ID #: ⁷						Rel.	0	2	0	17	4	12	0	0	<input checked="" type="radio"/> No	0
Comments: Both coho rel'd in good condition 12 jack chinook squishers all dead.												DCR Confirmation #: ⁶ FOS-12428				
Offload Catch Records																
Dates Fished				# Days fished	Date offloaded	<input type="checkbox"/> Pieces <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Sockeye <input type="checkbox"/> Pcs <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Coho <input type="checkbox"/> Pieces <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Pink <input type="checkbox"/> Pieces <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Chum <input type="checkbox"/> Pieces <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Chinook <input type="checkbox"/> Pieces <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	(Other) <input type="checkbox"/> Pcs <input type="checkbox"/> Lbs <input type="checkbox"/> Kgs	Complete if catch pooled with that of another vessel:			
First day	Last day	Day	Month										Day	Month	Received from:	Offloaded to:
14	Aug	14	Aug	1	15	Aug	471	0	3958	0	0	42	<input type="checkbox"/>	<input type="checkbox"/>	Name: VRN (CFV#):	
Business and port offloaded to:						Fish slip #:		OCR Confirmation #: ⁶								
Canfisco, Pr. Rupert						79768		FOS-12380								
19	Aug	19	Aug	1	19	Aug	310	0	1692	0	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Name: VRN (CFV#):	
Business and port offloaded to:						Fish slip #:		OCR Confirmation #: ⁶								
						79801		FOS-12482								

1. Enter the vessel master's Fisher Identification Number.
 2. Kept are species retained on board; Released are species returned to the ocean.
 3. **Jack Chinook** are all chinook smaller than 67 cm fork length. Note that 67cm is approximately 26 inches.
 4. Circle Yes or No as appropriate if any **birds**, **marine mammals**, or **turtles** were encountered. Give time of capture and species details in comments.
 5. **Other Species:** M= Mackerel, L= Lingcod, H= Halibut, D= Dogfish, R=Rockfish. Give full name for other species.
 6. **DCR Confirmation #** is the confirmation number received upon completion of the Daily Catch Report. **OCR Confirmation #** is the confirmation number 7.
- Fill in if Start Fishing Report is required by Licence Condition.

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Appendix 10 - Commercial (including First Nations inland) Demonstration Fisheries

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 requested concept proposals to develop demonstration fishery 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.

Interested First Nations and Area Harvest Committees submitted proposals for developing demonstration fishery projects outlining the licence area and/or specific location of the project, proposed management approach including the target species and potential catch involved, harvest methodology and how the expected benefits from the project will be shared.

Demonstration projects must improve management control and conservation performance in the fishery and be consistent with objectives outlined in the 2010/11 Salmon South Integrated Fishery Management Plans. Demonstration fishery projects must also be consistent with conservation measures required to protect stocks of concern that may be prevalent during the time and area proposed for the demonstration; is contingent on a commercial allocation being identified for the stock or species proposed in the project; and must be consistent with allocation priorities. Projects will not proceed where there is no commercial allocation identified or a mechanism to implement the project cannot be agreed on between the Area Harvest Committee or First Nation and the Department.

The Department has received the following demonstration fishery concept proposals that are under consideration for implementation in 2010:

1) Area B Seine Fraser River Sockeye Experimental Demonstration (ITQ) Fishery in the Lower Fraser River.

This demonstration fishery proposal is similar to the proposal that was provided by Area B to DFO in 2009.

The purpose of this experimental fishery project is to demonstrate the effectiveness of harvesting Fraser River sockeye within the confines of the Fraser River employing the selective capabilities of a purse seine and secondly to capitalize on the ability to continue the harvest of sockeye that may not be available in marine areas due to other constraints.

This fishery would be managed as part of the Area B and H demonstration ITQ fishery for Fraser River sockeye.

REGION - Lower Fraser River Area

PARTICIPANTS - All Area B licence holders will be eligible however as this is an experiment; effort controls will be in place to limit participation to a maximum of eight to ten vessels fishing on any given day.

LOCATION OF FISHERY - Area B has indicated there are a number of potential locations around New Westminster, Glenrose, the Cement Plant and down to the Deas Tunnel that would be suitable for seining and would for the most part, be out of the shipping lanes.

GEAR TYPE - Seine gear using shallow seine nets, the use of power skiffs and selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME - This fishery is planned to occur when Fraser River sockeye Canadian Commercial TAC is identified. It is anticipated that this experimental fishery would take place sometime within the time period of late July to mid to late August.

Fishing activities would be scheduled to minimize potential impacts on other fisheries in this area including First Nations and Area E gill net fisheries. Specific fishing times would be confirmed in-season through an integrated planning process. The amount of available fishing days for this experiment will be confirmed in-season.

ALLOCATION - For this experimental fishery to proceed, it will require available Fraser River sockeye Area B TAC. The harvest from this fishery will be part of the Area B and H Fraser River sockeye demonstration ITQ fishery. The quota share will be expressed as a percentage of the TAC.

As this is an experimental fishery, there will be a cap on the total allowable harvest in this fishery and the amount will be confirmed in-season. The target species is sockeye; there will be non-retention of all other species.

MONITORING PLAN - As per the Area B and H Fraser River sockeye demonstration ITQ fishery, start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations.

There will a requirement for 100% observer coverage on all vessels participating in this fishery. In addition to monitoring catch, observers will be available to collect any DNA sampling that is required and identified.

CONTACTS - DFO – Barbra Mueller, Resource Management,
Phone: 604-666-2370, Email: barbra.mueller@dfo-mpo.gc.ca

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

2) Area B Seine Johnstone Strait Chum (TAC) Share Based Demonstration Fishery

Note: This proposal is tentative and currently under discussion between the Department and the Area B Harvest Committee.

The Area B Harvest Committee has expressed an interest in continuing to further explore options for a TAC share based approach to the Johnstone Strait chum seine fishery.

In addition to evaluation work that was done in 2008, considerable planning and modeling work will be required to further explore what options might be available for a TAC base approach to this fishery that can adequately meet the Johnstone Strait chum fixed harvest rate management objectives as well as Area B harvest interests in this fishery.

REGION - South Coast

PARTICIPANTS - All Area B license holders.

LOCATION OF FISHERY - The fishing area that will be considered is Johnstone Strait (portions of Areas 12 and 13).

GEAR TYPE - Seine gear and selective fishing measures are mandatory and are specified by license conditions.

TIME FRAME - The fishery would occur during the October time period.

ALLOCATION - Allocation would be based that on the assumption that a TAC can be developed for this fishery. Further work is required to explore options and possibilities for a TAC approach to this fishery.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. Overflights will be conducted and charter patrol will monitor the fishery.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

3) Area B Seine and Area H Troll Fraser River Sockeye Individual Transferable Quota (ITQ) Demonstration Fishery.

This demonstration fishery will be similar to the quota based ITQ Fraser River sockeye that was planned for 2009 and the limited fishery that occurred in 2008. As this is an off-cycle for Fraser River pink there are no plans for a Fraser River pink fishery in 2010.

REGION - South Coast and Lower Fraser River Areas

PARTICIPANTS - All Area B and H licence holders.

LOCATION OF FISHERY - Seine fishing areas that will be considered in the fishery include; Johnstone Strait (portions of Area 12 and 13), Juan de Fuca (portions of Area 20), portions of Area 18 and portions of Area 29 off the Fraser River mouth. Note that a separate demonstration fishery proposal is provided for a demonstration – experimental seine fishery in the lower Fraser River. In Area 20 additional measures will be in place to minimize impacts on coho. Consideration for seine fishing opportunities in Area 20 will also be dependant on diversion rate estimates.

Troll fishing areas that will be considered in the fishery include; Johnstone Strait (portions of Area 12 and 13), portions of Area 18 and portions of Area 29 off the Fraser River mouth.

In Areas 12, 13 and 20 additional restrictions will be identified around test fishing locations to minimize impacts on test fishery assessment requirements.

GEAR TYPE - Seine and Troll gear, selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME - This fishery is planned to occur when Fraser River sockeye Canadian Commercial TAC is identified. It is anticipated that this fishery will take place within the time period of late July to mid to late August.

The Area H troll fishery is anticipated to be open on a 7 day per week basis as TAC permits. The Area B seine fishery is expected to be open 5 to 7 days per week and will be dependant on the amount of available TAC and the available time frame for the fishery.

It is expected that Area B seine fishing opportunities in Area 20 will also be limited in boat days due to impacts on coho.

ALLOCATION - The fishery will be based on available Fraser River sockeye commercial TAC. Shares between licence areas will be based on the 2010 commercial allocation plan.

The Fraser River sockeye quota (ITQ) will be determined by DFO by dividing the respective Area B and Area H Fraser River sockeye allocations by the total number of

licensed vessels for Area B and Area H multiplied by the available commercial Fraser River sockeye Total Allowable Catch (TAC) determined in-season.

The quota share will be expressed as a percentage of the TAC and will remain fixed in-season subject to amendments for seasonal quota transactions.

The TAC may be distributed over the course of the fishery in increments.

The TAC will be announced by fishery notice and adjusted if necessary following Fraser River Panel meetings (usually Tuesday and Friday) depending on abundance and stock composition.

Quota will be transferable within each licence area (e.g. Area B to Area B or Area H to Area H) as well as between licence areas (e.g. Area B to Area H or Area H to Area B). Transfers to or from other South Coast or Pacific Integrated Fisheries Initiative (PICFI) commercial fisheries will be considered.

The target species is sockeye, By-catch retention of pink and chum is permitted (except chum retention is not permitted in Area 20). There will be non-retention of coho, chinook and steelhead. By-catch retention species that are permitted during directed sockeye fisheries will not be ITQ.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. Overflights will be conducted and charter patrol will monitor the fishery.

Additional monitoring requirements are required and in place for the Area 20 seine fishery including on-grounds management, set by set reporting in established grid zones and observer coverage.

Potential alternative catch monitoring and traceability methods for Area H troll are under review.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

4) Area H troll Johnstone Strait Chum Individual Transferable Effort demonstration fishery

It is anticipated that this fishery will be similar to the effort based ITQ fishery that occurred in 2008 and 2009.

REGION - South Coast

PARTICIPANTS - All Area H troll licence holders.

LOCATION OF FISHERY - Johnstone Straits (portions of Area 12 and 13). Restrictions will be in place on weekends and holidays to restrict the fishery above Subarea 13-6 (Deepwater Bay).

GEAR TYPE - Troll, barbless hooks and revival tanks are mandatory.

TIME FRAME - The fishery is anticipated to commence during the last few days in September until the first few days in November and will be divided into two fishing periods. The timing of the two fishing periods and a potential 1 to 2 day closure between fishing periods is under review. There will be potential closures on seine fishing days depending on the structure of the seine fishery.

ALLOCATION - Boat day allocations are based on the anticipated amount of effort and the distribution of that effort in order to stay within Area H's share of the harvest rate.

The allocation of 5 boat days per licence (3 days in fishing period 1 and 2 days in fishing period 2) provided in 2009 is under review and will be confirmed prior to the start of the 2010 season. Boat days will be permitted to be transferred between other Area H licence holders within fishing periods but not between periods. The carry-over rule between periods is currently under review.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. Overflights will be conducted and charter patrol will monitor the fishery. There will be a continuation of the Vessel Monitoring System pilot.

CONTACTS - DFO - Brad Beaith, Resource Management
Phone: 250-756-7190, Email: brad.beaith@dfo-mpo.gc.ca

AHC – Peter Sakich, Area H Troll,
Phone: 250-247-8380, Email: sakich@island.net

5) Area E Gill net Chum Beach Seine Demonstration fishery

Note: This proposal is tentative and currently under discussion between the Department and the AEHC.

REGION - Lower Fraser Area

PARTICIPANTS Beach Seine Crew(s) will be identified pre-season – through AEHC.

LOCATION OF FISHERY - Area 29 – Lower Fraser R. Main stem. Potential sites include Duncan Bar Area

GEAR TYPE - Beach Seine gear – beach seine specifications

TIME FRAME - This fishery would be planned to take place once a Fraser River Chum TAC is identified, potentially mid-October to late August. Fishing dates/times would be confirmed in-season through the integrated planning process (Chum Working Group).

ALLOCATION - For this demonstration fishery to proceed, Area E Fraser River Chum TAC is required and is to be confirmed in-season.

MONITORING PLAN - In addition to requirements outlined in the Area E Condition of Licence, there is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area, Phone: 604-666-2370, Email: barbara.mueller@dfo-mpo.gc.ca

AHC – Bob McKamey, Area E Gill net (AEHC)
Phone: 604-826-2658, Email: aehc@shaw.ca

6) Area E Gill Net Chinook Pooled Demonstration Fishery

REGION - Lower Fraser Area

PARTICIPANTS - All Area E licence holders with a valid 2010 salmon licence will be eligible to register for pools.

LOCATION OF FISHERY - Area 29 – Lower Fraser R. Main stem (Mission to Steveston).

GEAR TYPE - Gill net gear -minimum 8 inch (203mm) mesh size.

TIME FRAME - Target dates are mid to late August.

ALLOCATION - The target species for this demo fishery is Fraser R. Chinook (Summer Run 4₁ chinook– i.e.: South Thompson). The amount available for harvest in 2010 will be determined pre-season and is expected to be up to 2,000 pieces.

This demonstration will be subject to in-season constraints, including the availability of sockeye by-catch.

MONITORING PLAN - There is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area
(Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Bob McKamey, Area E Gill net (AEHC)
Phone: 604-826-2658 / Email: aehc@shaw.ca

7) Area E Gill Net Small-bite Pooled Chum Demonstration fishery

Note: This proposal is tentative and currently under discussion between the Department and the AEHC.

REGION - Lower Fraser Area

PARTICIPANTS - All Area E licence holders with a valid 2010 salmon licence will be eligible to register for pools.

LOCATION OF FISHERY - Area 29 – Lower Fraser R. Main stem (Mission to Steveston).

GEAR TYPE - Gill net gear – chum net specifications

TIME FRAME - This fishery would be planned to take place once a Fraser River Chum TAC is identified, potentially mid-October to late August. Fishing dates/times would be confirmed in-season through the integrated planning process (Chum Working Group).

ALLOCATION - For this demonstration fishery to proceed, Area E Fraser River Chum TAC is required and is to be confirmed in-season.

MONITORING PLAN - In addition to requirements outlined in the Area E Condition of Licence, there is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area
Phone: 604-666-2370, Email: barbara.mueller@dfo-mpo.gc.ca

AHC – Bob McKamey, Area E Gill net (AEHC)
Phone: 604-826-2658, Email: aehc@shaw.ca

8) Riverfresh Partnership – Near Terminal Sockeye and Chinook Fisheries

The Riverfresh group has submitted an expression of interest to the Pacific Integrated Commercial Fisheries Initiative for the development of a commercial fishing enterprise. The 2010 demonstration fishery will build on previous year's demonstration fisheries and will help address the challenges involved in informing business plans for in-river fisheries in the BC Interior where commercial fisheries are a new occurrence and much of the processing and supporting infrastructure does not exist.

REGION - BC Interior

PARTICIPANTS - Riverfresh Partnership – Secwepemc Fisheries Commission (SFC), Siska First Nation and Cook's Ferry First Nation.

LOCATION OF FISHERY -

1. SFC chinook fishery – Kamloops Lake
2. SFC sockeye fishery – Kamloops Lake, Thompson River (at Steelhead Park), potentially locations further upstream dependant on fish quality.
3. Siska chinook fishery – Fraser River at Siska Reserve
4. Siska sockeye fishery – Fraser River at Siska Reserve
5. Cook's Ferry sockeye fishery – Thompson River at Martel (between Spences Bridge and Ashcroft, upstream of the confluence with the Nicola River)
6. Cooks Ferry chinook fishery – Thompson River at Martel (between Spences Bridge and Ashcroft, upstream of the confluence with the Nicola River)

GEAR TYPE –

1. SFC chinook fishery – 8" mesh drift/set gill net
2. SFC sockeye fishery – Beach seine, potentially small seine vessel in lake
3. Siska chinook fishery – Beach seine/pursing beach seine
4. Siska sockeye fishery – Fishwheel, beach seine/pursing beach seine
5. Cook's Ferry sockeye fishery – Beach seine
6. Cooks Ferry sockeye fishery – drift/set gill net
7. Cooks Ferry Chinook fishery – beach seine
8. Cooks Ferry Chinook fishery – 8" mesh drift/set gill net

TIME FRAME - NOTE: All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

SFC chinook fishery – fishery will target on late summer South Thompson (4₁); potential start date of Aug 15 for a four week (20day) fishery ending Sept 10

1. SFC sockeye fishery – fishery will target on Fall – South Thompson sockeye; potential start date of Aug 15 for a four week (20day) fishery ending Sept 10
2. Siska chinook fishery – fishery will target on late summer South Thompson (4₁); potential start date of Aug 2 for a two week (10day) fishery ending Aug 13.
3. Siska sockeye fishery – fishery will target on Fall – South Thompson sockeye; potential start date of Aug 2 for a four week (20day) fishery ending Aug 27

4. Cook's Ferry sockeye fishery – fishery will target on Late run – South Thompson sockeye and late summer South Thompson (4₁); potential start date of Aug 2 for a four week (20day) fishery ending Aug 27 or longer for Chinook fishery?

ALLOCATION –

1. SFC chinook fishery – The SFC chinook allocation for 2010 will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser chinook salmon as determined pre-season.
2. SFC sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye.
3. Siska chinook fishery – The SFC chinook allocation for 2010 will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser chinook salmon as determined pre-season.
4. Siska sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye
5. Cook's Ferry sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye
6. Cooks Ferry Chinook fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser chinook

MONITORING PLAN – These fisheries will be monitored using designated landing sites for dockside validation of catch.

CONTACTS –

DFO: Adrian Wall, BC Interior PICFI Coordinator, Phone: 250-851-4853

Email: Adrian.Wall@dfo-mpo.gc.ca

SFC: Murray Ross, Director of Fisheries, Secwepemc Fisheries Commission

Phone: 250-828-2178, Email: mross@shuswapnation.org

Siska: Terry Raymond, CAO, Siska Indian Band

Phone: 250-455-2219, Email: terryr@hughes.net

Cooks Ferry: Chief David Walkem, c/o Cooks Ferry Indian Band

Phone (250) 458-2224, E-mail: dwalkem@cooksferry.ca

9) Upper Fraser Fisheries Conservation Alliance (UFFCA) Partnership - Near Terminal Sockeye Fisheries

The UFFCA group has submitted an expression of interest to the Pacific Integrated Commercial Fisheries Initiative for the development of a commercial fishing enterprise. The 2010 demonstration fishery will build on previous year's demonstration fisheries and will help address the challenges involved in informing business plans for in-river fisheries in the BC Interior where commercial fisheries are a new occurrence and much of the processing and supporting infrastructure does not exist

REGION - BC Interior

PARTICIPANTS - UFFCA Partnership – Northern Shuswap Tribal Council (NSTC); Tsilhqot'in National Government (TNG)/Xeni Gwet'in

LOCATION OF FISHERY -

1. NSTC sockeye fishery – Quesnel River and Quesnel Lake.
2. TNG sockeye fishery – Chilko River at Alexis Creek, Chilko Lake.

GEAR TYPE –

1. NSTC sockeye fishery – beach seine in river and potential small seine vessel in Quesnel Lake.
2. TNG sockeye fishery – partial weir/fish trap and potential small seine vessel in Chilko Lake.

TIME FRAME - NOTE: All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

1. NSTC sockeye fishery – fishery will target on Summer run (Quesnel River) sockeye. Potential start date of Aug 16 for a two week fishery ending Aug 27.
2. TNG sockeye fishery – fishery will target on Summer run (Chilko) sockeye. Potential start date of Aug 16 for a two week fishery ending Aug 27.

ALLOCATION –

1. NSTC sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye.
2. TNG sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye.

MONITORING PLAN – These fisheries will be monitored using designated landing sites for dockside validation of catch.

CONTACTS –

DFO: Adrian Wall, BC Interior PICFI Coordinator

Phone: 250-851-4853, Email: Adrian.Wall@dfo-mpo.gc.ca

NSTC: Gord Sterritt, Fisheries Resource Manager, Northern Shuswap Tribal Council
Phone: 250-392-7361, Email: g.sterritt@nstq.org

TNG: Paul Grinder, Fisheries Program Coordinator, Tsilhqot'in National Government
Phone: 250-392-3918, Email: paul@tsilhqotin.ca

UFFCA: Brian Toth, Executive Director, Upper Fraser Fisheries Conservation Alliance
Phone: 250-562-7513, Email: briantoth@shaw.ca

10) 2010 Harrison-Fraser River Demonstration Fishery

REGION - Lower Fraser Area

PARTICIPANTS - Chehalis and Scowlitz First Nations

LOCATION OF FISHERY -

Those waters of the Harrison River located between the outlet of Harrison Lake downstream to the Highway Number 7 Bridge.

- Subarea 6 - Sumas River to Harrison

Those waters of the Fraser River bounded on the west by a line from a white boundary sign on the upstream side of the Fraser River at the mouth of the Sumas River, thence true north to a white boundary sign on the opposite shore and bounded on the east by a line from a white boundary sign on the upstream side of the Fraser River at the mouth of the Harrison River, thence true south to a white boundary sign on the southern shore of the Fraser River and those waters of the Harrison River downstream of the Highway Number 7 Bridge.

- Subarea 7 - Harrison to Agassiz Bridge

Those waters of the Fraser River bounded on the west by a line from a white boundary sign on the upstream side of the Fraser River at the mouth of the Harrison River, thence true south to a white boundary sign on the southern shore of the Fraser River and bounded on the east by the downstream side of the bridge across the Fraser River at Agassiz.

GEAR TYPE – Fraser sockeye and chum: Beach Seine not exceed a maximum mesh size of 2 ¾ inches.

ALLOCATION –

Fraser Sockeye: allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC).

Fraser Chum: allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of chum in the Fraser River.

TIME FRAME - : All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

Fraser Sockeye: This fishery would be planned to take place once a Fraser River sockeye Canadian Commercial TAC is identified, potentially late July to late August or early September.

Fraser Chum: Mid October-End of November.

MONITORING PLAN - A Monitor will be present with every beach seining crew during all fishing activity. The Monitor shall not participate in any fishing activity while on duty. The Participants must report the number and species of salmon harvested in the Fishery, as well as the number of salmon retained, to Kim Charlie at Chehalis Fishing Authority (Tel: (604)796-2116, Fax: (604)796-3946) immediately following the fishery. The Chehalis Fishing Authority will collect all catch statistics and report this information on a daily basis to Matt Parslow, Management Biologist at the DFO office at Annacis Island (Tel: (604) 666-6608 Fax: (604) 666-8134) daily on the Fishery on the 'Catch Reporting Form' provided by DFO.

CONTACTS - DFO - Brian Matts: #3100 Annacis Parkway, Delta, BC
Phone 604-666-2096

Kim Charlie at Chehalis Fishing Authority Phone: 604-796-2116

Appendix 11: Map of South Coast Creel Survey Areas

