

Wild
Salmon
Policy



Fisheries and Oceans Canada | Pacific Region
2018–2022 IMPLEMENTATION PLAN

Annual Report 2018-19



Fisheries and Oceans
Canada

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Canada

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Table of Contents

Executive Summary	2
Introduction and Context	3
Overall Progress on WSP Implementation	6
2018-19 Activity Highlights.....	8
Key Performance Indicators	12
WSP Moving Forward: 2019-20.....	13
Conclusion	15
Annex A: Wild Salmon Policy Implementation Resources and Acronyms	16
Annex B: WSP Implementation Tracker	17

Executive Summary

On October 11, 2018, the Honourable Jonathan Wilkinson, Minister of Fisheries and Oceans and the Coast Guard, released the *Wild Salmon Policy 2018-2022 Implementation Plan* (the Plan). This document outlines 9 overarching approaches and 48 actions the Department is committed to undertaking and leading on over the next five years in order to implement *Canada's Policy for Conservation of Wild Pacific Salmon* – also known as the Wild Salmon Policy (WSP). In the spirit of 'what gets measured, gets done', and in line with the Government of Canada's commitment to openness and transparency, the Plan includes DFO's commitment to performance review, including annual public reporting on the status and progress of key actions. While annual review of work plans and post-season operations happens as a normal course of business, the public reporting on the status of activities in the Plan keeps partners and the public informed of progress in a timely manner, provides early warning of challenges that need to be addressed, and reflects on lessons learned.



Over 2018-19, the Department has completed or made progress on all the overarching approaches and a number of key activities in the Plan that advance monitoring of wild salmon stocks, habitat and ecosystem assessment and monitoring, integrated strategic planning, program delivery, and continued collaboration with the Province of BC, First Nations, and other stakeholders.

	Overarching Approaches	Activities with a Target Completion Date	Ongoing Activities
Number of Activities	9	26	22
Number On-Track or Completed 2018-19	9 (100%)	19 (73%)	20 (91%)
Number Delayed or Facing Challenges 2018-19	0 (0%)	7 (27%)	2 (9%)

This Annual Report **highlights an overview of progress on activities, introduces performance indicators, and provides the status** of each activity, including information to provide context and mitigation strategies for activities that are off-track.

Introduction and Context

Background

Wild Pacific salmon are an iconic part of the life and culture of west coast Canada. They hold tremendous value for natural ecosystems, cultural and spiritual practices, recreational enjoyment and jobs along the coast and inland watersheds of the Pacific Region. Pacific salmon are keystone species in marine, freshwater, and terrestrial ecosystems. Many species of fauna and flora – from Resident Killer Whales to black bears to Douglas Fir – depend on migrating Pacific salmon for their survival. Salmon are also inextricably linked to Indigenous communities in BC and Yukon, not only as a traditional food source, but also as a vital component of nutritional, spiritual, cultural, social and economic well-being. Finally, wild Pacific salmon support commercial and recreational fisheries that are a foundational part of the socio-economic fabric of the Pacific region. The business stemming from fishing activities – including fish processing, fish guiding, tackle shops, hotels, ecotourism, and restaurants, to name a few – ripple through the economy, creating additional jobs and income.

When it was released in fall 2018, the Plan¹ outlined the overarching approaches and activities the Department of Fisheries and Oceans Canada (DFO) was committed to undertaking over the next five years, including how it is using DFO's scientific and management expertise to meet its responsibilities for the conservation of wild Pacific salmon. This work builds on thirteen years of work already undertaken by the Department, and focuses on developing common guidance and standardized methods.

International Context



Photo: Margerita Schwartzel · Federal Minister Jonathon Wilkinson, BC Premier John Horgan and members of NPAFC & NASCO at the International Year of the Salmon launch

2019 is a particularly important year for salmon internationally, as it has been declared by the North Pacific Anadromous Fish Commission and the North Atlantic Salmon Conservation Organization as the International Year of the Salmon or IYS². The IYS is an international framework for collaborative outreach and research to raise awareness of what humans can do to better ensure salmon and their varied habitats are conserved and restored against the backdrop of increasing environmental variability. The overall IYS theme is 'salmon and people in a changing world', and the

Plan is helping to contribute to other multi-national collaborative initiatives to protect and celebrate salmon including raising awareness of what humans can do to better ensure salmon and their varied habitats are conserved and restored against the backdrop of increasing environmental variability. The Department will

¹ <https://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/ip-pmo/index-eng.html>

² <https://npafc.org/iys/>

continue to leverage its relationships, coast-wide geographic jurisdiction and clear mandate to use focused science advice to deliver good salmon management and transparent accountability.

Importance of Collaboration

Healthy Pacific salmon populations today and in the future depend on work being done by many important regulators, First Nations, communities and organizations. Accordingly, Federal, provincial/territorial, local and Indigenous partnerships are essential components of an integrated approach to Pacific salmon management. The jurisdictional framework for Pacific salmon includes separate legislated authorities for habitat management, integrated resource management, and land protection, as well as local management plans and zoning. Given this complex landscape, the Department works with different partners depending on the implicated authorities and the spatial scale of the activity being undertaken.



Photo: Margarita Schwartzel · Sockeye Salmon (*Oncorhynchus nerka*)

DFO's work with partners on Pacific salmon and salmon habitat is guided by the Government of Canada's commitment to a renewed, nation-to-nation relationship with Indigenous peoples, and by several key policies including, among others, the Precautionary Approach and the Wild Salmon Policy. The principles of the Wild Salmon Policy – focusing on conservation, working with First Nations, making decisions that ensure sustainable use, and making decisions in an open and transparent process – guide the work the Department undertakes. The Plan focuses on a myriad of activities across the Department and the implementation of activities are often decentralized with accountabilities across multiple branches, programs and teams. This can present challenges as people look to the Department for guidance at a local level. In an effort to address this challenge, the Department continues to seek improvements in supporting staff at all levels and geographic areas for effective engagement with partners on Wild Salmon Policy related activities, at the same time that guidance tools are being developed.

While this report showcases progress on actions that the Department is taking or leading, DFO recognizes that partners across BC and Yukon are actively contributing towards the Wild Salmon Policy goal to maintain and restore wild salmon populations.

Collaborative work on BC Southern Chinook

DFO staff have been working alongside some of these partners to deliver on a number of salmon initiatives at various scales across the region. One example is the collaborative work around the *Integrated Strategic Plan for Southern BC Chinook*, which the Department has been co-developing with First Nations and stakeholder over the last five years.

Many Chinook salmon stocks in southern BC have shown decreases in abundance, repeatedly low escapements, and/or declines in fishery catches, especially over the last fifteen years. These populations are facing a number of



Photo: Eiko Jones · Female Chinook Salmon (*Oncorhynchus tshawytscha*)

potential challenges including: depressed and/or declining spawner abundance; reduced and variable freshwater and marine survival rates; high uncertainty about future production; pressures on freshwater habitat; total mortalities associated with harvest; increased predation; and ecosystem effects from climate changes. Although there are some exceptions to the general patterns, the decline of many southern BC Chinook populations has been highlighted as a significant concern for First Nations, the Canadian public, commercial and recreational fishers, and conservation groups. In addition,

this initiative is linked to DFO's priority on enhancing efforts to increase Chinook salmon populations, as they are the preferred prey of Resident Killer Whales. Given these issues, the Strategic Plan is intended to take on the challenge of applying existing knowledge and tools to find the most effective, acceptable strategies to recovering and protecting Chinook stocks in southern BC, while recognizing the realities and constraints on implementing such strategies.

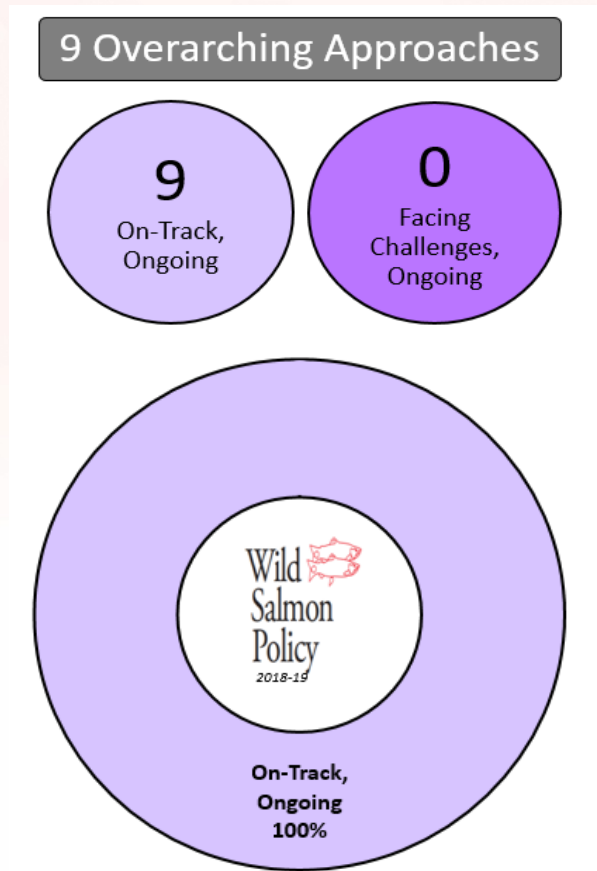
While the *Integrated Strategic Plan for Southern BC Chinook* is not a specific activity listed in the Plan, the document and its collaborative process contribute to Action Step 4.2 in the WSP to design and implement a fully integrated strategic planning process for salmon conservation. The co-development process involved scientific analysis, technical review, consultations, and a technical working group of scientific and technical experts from DFO, First Nations, and other collaborators. The intent for the *Integrated Strategic Plan for Southern BC Chinook* is to present a range of strategies that can be considered to address threats to BC southern Chinook from the collective perspective of a diverse group of First Nations and interested parties. Parties are discussing publishing the final *Integrated Strategic Plan for Southern BC Chinook*, in collaboration with First Nations partners.

Overall Progress on WSP Implementation

Over the last year, a lot of work has been done to initiate activities, and overall progress on implementing the 9 overarching approaches and 48 activities in the Plan has been positive. Overall, 100% of the overarching approaches and 81% of the activities are either completed or on-track for 2018-19. This represents a significant effort by the Department and signals DFO's ongoing commitment to meeting the goal of the WSP to restore and maintain healthy and diverse salmon populations and their habitat.

For the 26 activities with a defined target completion date (the blue chart below), 73% are completed or on-track to be completed by their target date, with 27% delayed. For the 22 activities that will be ongoing (the purple chart below), 91% are on-track and are being routinely delivered as planned. Only 9% of ongoing activities are facing delivery challenges.

For detailed information on the overarching approaches and progress on individual WSP activities, including additional context and mitigation strategies, please see the annex at the end of this report.



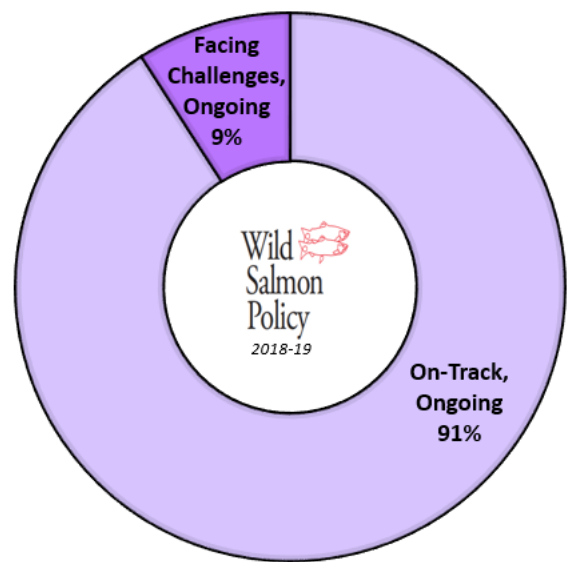
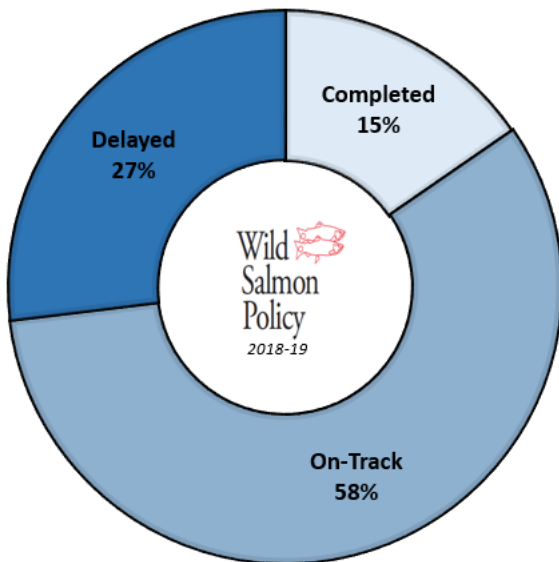
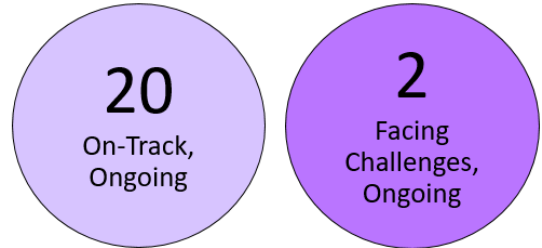
ACTIVITIES WITH A TARGET COMPLETION DATE	
Completed	The activity has been completed in full by the targeted completion date.
On-Track	Progress has been made on the activity, and it is on-track to be fully completed by the targeted completion date.
Delayed	The activity is delayed but mitigation strategies are in place to complete the activity.

ONGOING ACTIVITIES	
On-Track, Ongoing	Progress has been made this year, and is "on-track" to be delivered on an ongoing basis.
Facing Challenges, Ongoing	The activity is encountering delivery challenges, and mitigation strategies are in place with the goal of moving this activity to "On-Track, Ongoing".

48 ACTIVITIES

26 with a TARGET COMPLETION DATE

22 ONGOING



2018-19 Activity Highlights

While the Annex at the end of this report outlines the status of each activity, including many ongoing activities that have made progress this year, this section provides snapshots on WSP implementation for the five activities targeted for completion this fiscal year (April 2018 - March 2019), as well as an activity that has been completed in advance of its targeted completion year and new initiatives announced.

Progress on Plan Activities with a Target Completion Date by March 31, 2019



Photo: Rory Hill · Coho Salmon (*Oncorhynchus kisutch*)

Activity ID 1: Maintain an authoritative database of conservation unit (CU) descriptions, including biological and geographical attributes, and make it available to the public via the Government of Canada’s Open Data portal

Completed: The Department maintains an extensive system of publically available data for CUs that includes biological and geographical components via the Open Government Data Portal³. This database is updated as new information becomes available, and all current CU descriptions are posted on the Open Government Data Portal. This activity has been completed and delivered in full, and the Department is committed to ensuring that updated data is available to the public in an easy to use and accessible format.

Activity ID 16: Publish report on Risk Assessment Method for Salmon (RAMS) to assess potential for disturbance events or regimes in freshwater & marine ecosystems to control CU status and trend patterns

Delayed: The Risk Assessment Method for Salmon (RAMS) process helps identify management interventions to conserve, restore or enhance salmon CUs of interest within a broader ecosystem or applied Management Unit context. While this activity has a targeted completion date of March 31, 2019, the RAMS methodology and process is in the final stages of publication and is anticipated to be released shortly in spring 2019. Completion of this activity marks a significant achievement for the Department and is a positive step forward in advancing scientific, collaborative and community involved salmon conservation efforts.

Pilot testing of RAMS in several workshops has allowed DFO to provide an evidence-based diagnosis of factors driving state changes for populations or CUs of interest, as well as to identify management intervention actions that may be effective in avoiding, stabilizing or (less commonly), reversing a decline. RAMS testing in “hands-on” workshops has been far more extensive than originally envisaged, largely because of the quick recognition that when used correctly, it fills an important agency-to-community knowledge exchange function that other procedures less easily achieve. Over the past three years, seven “hands-on” RAMS workshops have been

³ <https://open.canada.ca/en/open-data>

successfully held - Nootka, Clayoquot, Barkley sound salmon, Cowichan (2 separate workshops), Sakinaw, and the Salmon River.

The RAMS methodology can be applied at whatever scale (CU, group of CUs, streams, watershed, river basins, or eco-regions) wild salmon populations warrant by their underlying genetic and eco-typic structure. The availability of a tiered RAMS application helps remove the WSP implementation reality of dealing with available information at multiple scales. The next application of RAMS will likely involve a workshop to integrate information on Chinook CUs from most of the west coast of Vancouver Island as input for understanding rebuilding opportunities.



Photo: Janine Malikian - Sockeye Salmon (*Oncorhynchus nerka*)

Activity ID 24: Support ongoing national and provincial initiatives and increase interagency communication on cumulative effects assessment and management issues pertaining to shared aquatic ecosystem values

Completed: This activity has been completed and delivered in full. However, continued efforts to improve inter and intra agency communication are an ongoing priority for the Department. For example, the Department has spent significant time facilitating dialogue amongst regional staff in Environment and Climate Change Canada, Transport Canada (particularly relating to the Oceans Protection Plan), and with provincial and territorial governmental staff on issues pertaining to salmon, salmon habitat conservation and cumulative impact assessment.

Several meetings were held throughout 2018-19 on aquatic ecosystem values, many including significant interest from the BC government. The Department has reached out to the BC government on habitat issues and to national colleagues on rebuilding plan discussions in advance of anticipated regulatory changes from Bill C-68. In particular, the public interest in understanding cumulative effects for SARA listings, rebuilding plans and Chinook measures remains very high, and the Department is working to support the communication of advances on these important issues.

Activity ID 29: Map CUs, freshwater and marine ecosystems, Fishery Management Units, and Outlook Units to clarify connections and nesting

Delayed: Significant progress has been made on this activity, despite it being listed as delayed. The initial mapping of CUs, freshwater and marine ecosystems, Fishery Management Units, and Outlook Units has been completed. The complexity in the terminology surrounding classifications can be difficult to communicate and plan around, so an agreement has been reached to simplify the terminology and align the above listed units with evolving management needs. Anticipated new regulatory requirements under Bill C-68 have created further uncertainty in how a 'stock management unit' for salmon is defined, and is the primary driver behind this activity's status listing as delayed. The Department is working to further understand and clarify the impact of these anticipated regulatory changes to the delivery of WSP activities. At the same time, work will continue on the development of species management and assessment frameworks.

Activity ID 41: Assess the value of annual lake stock assessments and monitoring programs for fall fry populations in the Fraser Basin with the goal of increasing work from two to four lakes annually

Completed: DFO staff have planned and are currently implementing the expansion of field work to include four fry productivity lake assessments in any given year as part of a larger rotational scheme that targets dominant sockeye years. Additional scientific work to explain the results of surveys is being considered on an ongoing basis.

Progress on Activity Completed before its Target Completion Year

Activity ID 2: Develop a framework for reviewing and approving revisions to CU descriptions

Completed: While this activity is not targeted for completion until March 31, 2020, it has been completed and delivered in full. As part of the Department's scientific process, a framework for reviewing and approving revisions to CU descriptions has been developed and undergone a full Canadian Scientific Advisory Secretariat (CSAS) review. This framework is published and is available on the DFO website⁴.

New Salmon Initiatives Announced in 2018-19

This year has been an exciting year for wild salmon in BC, with several new initiatives announced related to Pacific salmon and salmon habitat conservation. These initiatives will provide opportunities and funding for First Nations, communities, non-government organizations (NGOs), academia and industry. By supporting projects outside the Department that benefit salmon, these initiatives complement work being done by the Department to restore and maintain healthy salmon populations and their habitats for the benefit of all Canadians.



BC Salmon Restoration and Innovation Fund

The *BC Salmon Restoration and Innovation Fund* is a new initiative jointly funded by Fisheries and Oceans Canada (DFO) and the province of British Columbia. DFO and the Province of BC are working together to deliver the BC Salmon Restoration and Innovation Fund, which will provide \$142.85M over five years to external partners to better protect the health and sustainability of Pacific salmon and other fish stocks, while modernizing the wild fisheries and aquaculture sectors in BC.

Funding will be available to BC-based commercial and non-commercial organizations, including Indigenous groups, commercial enterprises, universities and academics, and stewardship organizations.

⁴ http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2019/2019_015-eng.html

Canada Nature Fund for Aquatic Species At Risk

The *Canada Nature Fund for Aquatic Species at Risk* is part of Canada's Nature Initiative, launched in May 2018⁵. Canada Nature Fund for Aquatic Species at Risk will provide \$55 million over five years to support projects that address priority threats and contribute to the protection and recovery of at-risk aquatic species in priority places. Specifically, the Canada Nature Fund for Aquatic Species at Risk will fund projects that address the priority threats to aquatic species at risk in the marine environment, and that address threats to help aquatic species at risk to recover in freshwater priority places.



Photo: Margarita Schwartzel · Sockeye Salmon (*Oncorhynchus nerka*)

From a salmon conservation perspective, the Canada Nature Fund for Aquatic Species at Risk has identified the Fraser and Columbia Watersheds together as one of the freshwater priority places. The Fraser and Columbia Watersheds are home to critical spawning, rearing and migration grounds for salmon. This renewed priority focus on projects that aim to restore these critical watersheds will assist the Department in meeting the overall goal of the Wild Salmon Policy.

Bill C-68 – Amendments to the *Fisheries Act*

Through the 2018 Fall Economic Statement, the Department received \$107.4 million over five years to support the implementation of *Fisheries Act* amendments related to fish stock rebuilding. Through this funding, the Department is committed to enabling more science work, such as investment in stock assessment, for fish species across Canada including wild Pacific salmon. As Bill C-68 continues to be considered by Parliament, DFO is working to develop regulations and policies in consultation with Indigenous groups, provinces, and stakeholders to support the implementation of amendments⁶.

⁵ <https://www.canada.ca/en/fisheries-oceans/news/2019/02/the-government-of-canada-takes-action-to-protect-aquatic-species-at-risk.html>

⁶ <http://www.dfo-mpo.gc.ca/campaign-campagne/fisheries-act-loi-sur-les-peches/index-eng.html>

Key Performance Indicators

In order to understand if the activities committed to in the Plan were leading to improved conditions for salmon populations and their habitats, DFO committed to reporting on key performance indicators in the annual report. Quantitative performance indicators are intended to complement qualitative and narrative data. The combined data can provide a more holistic picture of what the Department has achieved, areas requiring improvement, and the way forward.



Photo: Eiko Jones - Chum Salmon (*Oncorhynchus keta*)

As part of DFO’s suite of programs contributing to wild salmon conservation, the Department has already identified and reports on a number of performance indicators on an ongoing basis. These indicators support a greater understanding of the Department’s overall efforts on assessment and monitoring, as well as integrated strategic planning to support the restoration and maintenance of healthy salmon populations and their habitats. This information is included in the key performance indicator table below. Over the next year, DFO will continue to refine these key performance indicators, and develop new indicators as required to better articulate progress.

Performance Indicators & Current Data		Data Source
9.1%	of salmon CUs (in CSAS assessments) have WSP biological benchmarks and CU status assessment results ⁷	Fisheries Management
45.2%	of salmon CUs (in CSAS assessments) are in the WSP cautious (amber) and healthy (green) zones ⁸	Fisheries Management
27	salmon MUs have harvest control rules outlined in salmon IFMPs ⁹	Fisheries Management
63%	of salmon CU's have at least one annual Escapement Estimate within the last five years available in the central database (NuSEDS) ¹⁰	Science (NuSEDS)
85%	of enhanced salmon directly support DFO objectives for harvest, stock assessment and conservation (salmon production from major facilities) (as of March 2019)	Salmonid Enhancement Program
81%	of enhanced salmon directly support DFO objectives for harvest, stock assessment and conservation (salmon production through community facilities under the contribution program) (as of March 2019)	Salmonid Enhancement Program
95%	of salmon aquaculture farms in Pacific Region had no reported <i>Fisheries Act</i> violations in 2018-19 ¹¹	Aquaculture Program

⁷ 42 out of 462 CUs. 22 Sockeye, 5 Coho, 15 Chinook, not including Data Deficient or TBD.

⁸ 19 of 42 CUs assessed. 11 Sockeye, 5 Coho, 3 Chinook, not including Data Deficient, TBD or red/amber classifications. See Annex A for links to CSAS Report.

⁹ 11 Sockeye, 7 Chum, 1 Pink, 6 Chinook and 2 Coho. Currently there are 53 MUs identified in Yukon, Transboundary, Northern and Southern BC IFMPs.

¹⁰ There are multiple populations for most CUs, so an annual CU estimate does not mean that the CU is “completely” or “adequately” estimated. Some missing data may be due to unavoidable time delays in entering CU estimates into NuSEDS. NuSEDS estimates only include CU definitions that are currently in use and not in “retired” status.

¹¹ C&P conducts thorough investigations on reported *Fisheries Act* violations and their associated regulations. Not all reported violations will result in charges. For the purposes of this document, the performance indicator is based on reported violations only, and not the result of the investigation.

WSP Moving Forward: 2019-20



Photo: Eiko Jones · Coho Salmon (*Oncorhynchus kisutch*)

2019-20 will be another exciting year, as many activities due for completion in 2019-20 build on current achievements. The activities below are a snapshot of the work that the Department will undertake. By continuing to deliver on these activities, the Department will be well-placed to support the sustainability of wild Pacific salmon to 2022 and for generations to come.

Activities Targeted for Completion in 2019-20

Assessment

Next year's activities under this theme are largely focused on the identification, assessment and monitoring of CUs

to inform larger management plans.

Assessment Activities	
Activity ID 6	Apply and refine an approach for identifying and prioritizing CUs or groups of CUs for biological status assessments.
Activity ID 17	Publish report(s) on results from initial application(s) of RAMS from one or more workshops (e.g. Cowichan Chinook, Barkley Sockeye).
Activity ID 23	Develop options and recommended actions through the Salish Sea Marine Survival Project to address human threats and biological limiting factors affecting survival of Chinook and Coho in the Salish Sea.

Maintaining and Rebuilding Stocks

The WSP recognizes that restoring and maintaining healthy and diverse salmon populations and habitats requires a coordinated focus on planning for these stocks – from fisheries management decisions, enhancement actions, to habitat considerations. Next year's activities under this theme focus on strategic planning work for salmon conservation, in conjunction with the planning and implementation of annual enhancement activities. With the WSP guiding the delivery of these activities, the Department will continue to integrate and align work across sectors to deliver on these activities and work towards the overall goal of maintaining and restoring wild salmon populations.

Maintaining and Rebuilding Stocks Activities	
Activity ID 31	Develop a WCVI Chinook rebuilding plan.
Activity ID 34	Document SEP program activity by CU (enhancement, community involvement, habitat restoration).
Activity ID 35	Continue to implement transparent planning process for hatchery production taking into account the WSP objectives of wild salmon conservation and sustainable fisheries.

Maintaining and Rebuilding Stocks Activities	
Activity ID 37	Continue to co-lead the genomic research for the Strategic Salmon Health Initiative.
Activity ID 39	Review requirements for salmon farms to ensure risks to wild salmon are minimized.
Activity ID 44	Continue to implement transparent decision making framework for hatchery production in fishery planning processes that takes into account WSP objectives, balancing of risks of genetic effects, and the socio-economic benefits of increased stock abundance.

Accountability

New language has been introduced in Parliament for the *Fisheries Act* which would modernize safeguards to reflect the evolving nature of fish and habitat management. If adopted, the proposed amendments would precipitate regulatory, policy, and program changes which could impact salmon and salmon habitat management. In addition to publishing an annual report, the Department will be working over the course of 2020 to incorporate additional activities in the Plan stemming from any related changes to the *Fisheries Act*.



Photo: Eiko Jones · Pink Salmon (*Oncorhynchus gorbuscha*)

Meeting the goal of the Wild Salmon Policy is complex and the broader themes of *Assessment, Maintaining and Rebuilding Stocks*, and *Accountability* demonstrate that individual strategies are not autonomous. Successful integration of work under all themes is necessary to ensure the success. In addition to delivering on the targeted date activities listed above, DFO will continue to meet the nine overarching approaches and twenty-two ongoing activities.

Conclusion

The first year of the Plan has been a success, and many steps have been put in place to continue this momentum. From publishing data on conservation units and developing a risk assessment approach for salmon, to working collaboratively with the Province of BC, First Nations, and other stakeholders, DFO is moving forward to protect wild salmon populations. This work, along with the work being done by so many others in BC and Yukon are important steps towards reaching the evergreen goal of restoring and maintaining diverse salmon populations for the benefit of the people and ecosystems of Canada in perpetuity.

The Department continues to recognize that the goal of the WSP cannot be achieved by DFO alone, and new initiatives and funds announced over the last year will help groups with an interest in wild Pacific salmon continue to undertake work to help Canada meet the goal.



Photo: Eiko Jones · Sockeye Salmon (*Oncorhynchus nerka*)

Annex A: Wild Salmon Policy Implementation Resources and Acronyms

Resources

- **Wild Salmon Policy:** <https://www.pac.dfo-mpo.gc.ca/fm-gp/species-especies/salmon-saumon/wsp-pss/policy-politique/index-eng.html>
- **Wild Salmon Policy 2018-2022 Implementation Plan:** <https://www.pac.dfo-mpo.gc.ca/fm-gp/species-especies/salmon-saumon/wsp-pss/ip-pmo/index-eng.html>
- **Wild Salmon Policy Implementation Plan Highlights, 2005-2017:** <https://www.pac.dfo-mpo.gc.ca/fm-gp/species-especies/salmon-saumon/wsp-pss/wspi-ppi-eng.html>
- **International Year of the Salmon:** <https://npafc.org/iys/>
- **Government of Canada Open Data Portal:** <https://open.canada.ca/en/open-data>
- **Canada Nature Fund for Aquatic Species at Risk:** <https://www.canada.ca/en/fisheries-oceans/news/2019/02/the-government-of-canada-takes-action-to-protect-aquatic-species-at-risk.html>
- **Framework for reviewing and approving revisions to CU descriptions:** http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2019/2019_015-eng.html
- **Bill C-68:** <http://www.dfo-mpo.gc.ca/campaign-campagne/fisheries-act-loi-sur-les-peches/index-eng.html>
- **Canadian Science Advisory Secretariat:** <http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm>
- **CSAS Science Advisory Reports:**
 - **Fraser River Sockeye:** <http://www.dfo-mpo.gc.ca/Library/349836.pdf>
 - **Southern BC Chinook:** <https://waves-vagues.dfo-mpo.gc.ca/Library/40595419.pdf>
 - **Interior Fraser River Coho:** <https://waves-vagues.dfo-mpo.gc.ca/Library/364851.pdf>
- **A Fisheries Act for the Future:** <http://www.dfo-mpo.gc.ca/campaign-campagne/fisheries-act-loi-sur-les-peches/index-eng.html>

Abbreviations

- **BC:** British Columbia
- **CSAS:** Canadian Science Advisory Secretariat
- **CU:** Conservation Unit
- **DFO:** Department of Fisheries and Oceans / Fisheries and Oceans Canada
- **IYS:** International Year of the Salmon
- **NGO:** Non-Government Organization
- **RAMS:** Risk Assessment Method for Salmon
- **SARA:** Species At Risk Act
- **WCVI:** West Coast Vancouver Island
- **NuSEDS:** New Salmon Escapement Database Systems
- **PSF:** Pacific Salmon Foundation
- **WSP:** Wild Salmon Policy
- **The Plan:** *Wild Salmon Policy 2018-2022 Implementation Plan*

Annex B: WSP Implementation Tracker

This is the detailed companion document that outlines specific activity status and key work to date. Additionally, the below table will outline any challenges faced by activities and explains any mitigation strategy in place to restore activities that are 'delayed' or 'facing challenges' back to 'on-track' status.

ACTIVITIES WITH A TARGET COMPLETION DATE	
Completed	The activity has been completed in full by the targeted completion date.
On-Track	Progress has been made on the activity, and it is on-track to be fully completed by the targeted completion date.
Delayed	The activity is delayed but mitigation strategies are in place to complete the activity.

ONGOING ACTIVITIES	
On-Track, Ongoing	Progress has been made this year, and is "on-track" to be delivered on an ongoing basis.
Facing Challenges, Ongoing	The activity is encountering delivery challenges, and mitigation strategies are in place with the goal of moving this activity to "On-Track, Ongoing".

Overall Approaches

ID	Overall Approach	Current Status
Approach ID	A description of the overall approach, as published in the WSPIP	See legend above.
A	Engage BC and Yukon First Nations, partners, and stakeholders at the local level to leverage IKS and local expertise to gain understanding of habitat status and other factors limiting production	On-Track, Ongoing
B	Support First Nations' salmon governance processes and capacity aimed at facilitating collaboration	On-Track, Ongoing
C	Consider WSP guiding principles and objectives in ongoing management and program activities, both internally and with partners	On-Track, Ongoing
D	Consider WSP guiding principles and objectives in annual and multi-year planning processes	On-Track, Ongoing
E	Adapt and update best practices based on lessons learned	On-Track, Ongoing
F	Continue integrated planning discussions through various mechanisms, including local roundtables	On-Track, Ongoing
G	Consider WSP activities in the <i>Species at Risk Act</i> (SARA) listing process for any wild salmon species	On-Track, Ongoing
H	Work on an integrated approach to wild salmon with the Province of BC	On-Track, Ongoing
I	Continue engagement with Yukon First Nation Governments and the Yukon Salmon Sub-Committee to further salmon work in Yukon	On-Track, Ongoing

Activity Tracker

Activity ID	Action Step	Activity Description	Lead	Target Date	Current Status	Additional Comments
Activity number (1-48)	Which action step in the WSPIP does this activity map to	A description of the activity being undertaken, as published in the WSPIP	What sector/branch is leading the delivery of this activity	When is this activity targeted for completion	See legend above.	A summary of key work undertaken to date, any challenges being faced and any mitigation strategy in place to reduce these challenges to ensure activity is restored to on-track status
1	1.1 - Identify CUs	Maintain an authoritative database of CU descriptions, including biological and geographical attributes, and make it available to the public via the Government of Canada's Open Data portal	Science - StAR	31-Mar-19	Completed	All current Conservation Unit (CU) descriptions are posted on the Open Government Data Portal. Should new CUs be described, database will be updated as the information becomes available. Open Governmental Data Portal: https://open.canada.ca/data/en/dataset?keywords=Conservation+Units . Note: A recent review of CUs determined that some CUs were actually data management categories, resulting in a smaller number of CUs overall. For example, "deprecated" and "deleted" categories are not CUs; "bins" are not necessarily CUs but rather a category to hold sites that for some reason are not assigned to a CU, however there may be situations where they refer to CUs. For further explanation of CU data management categories see link in Activity 2.
2	1.1	Develop a framework for reviewing and approving revisions to CU descriptions	Science-StAR	31-Mar-20	Completed	This activity has been completed and delivered in full. The CU revision framework has undergone a full Canadian Scientific Advisory Secretariat (CSAS) review. The published document is available here: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2019/2019_015-eng.html

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3	1.2 - Develop criteria to assess CUs and identify benchmarks for biological status	Modify existing metrics or develop new metrics to address CUs that cannot be assessed with existing status assessment tools and subject modifications to CSAS review process	Science-StAR	Ongoing, as required	On-Track, Ongoing	Chum CSAS process and documents completed. Please see [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018_011-eng.html]. Additional methods will be developed as the need arises.
4	1.2	Document new methods for status assessments of CUs or groups of CUs and conduct peer review through the Canadian Scientific Advisory Secretariat (CSAS)	Science-StAR	Ongoing, as required	On-Track, Ongoing	New benchmarks developed for cyclic CUs for Fraser River Sockeye salmon. This research report has been submitted to CSAS and is awaiting publication. The CSAS advisory report is available here: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_017-eng.html .
5	1.2	Develop a strategy to improve documentation of standards for data, methods, and reporting of monitoring programs	Science-ESD, StAR	31-Mar-22	On-Track	Expected to begin development in 2019-20 as part of Pacific Salmon Treaty (PST) implementation.
6	1.3 - Monitor and assess status of CUs	Apply and refine an approach for identifying and prioritizing CUs or groups of CUs for biological status assessments	Science-StAR Fisheries Management-SMCS	31-Mar-20	Delayed	A risk-based tool for this activity has not yet been developed, reviewed, and/or accepted. This critical work will require significant and ongoing coordination amongst sectors. Previous Fisheries Management Framework Initiative work and risk-based prioritization work for Management Units (MUs) may be helpful in informing CU prioritization efforts. Existing tools for the prioritization of CUs for stock assessment could be refined for WSP status assessments. Status assessments may require a tiered approach based on the intended use of the assessment in order to permit cost-effective prioritization efforts with available resources.
7	1.3	Continue to monitor CUs on a priority basis, using indicator, intensive, and extensive monitoring approaches	Science-StAR, ESD	Ongoing	On-Track, Ongoing	Ongoing monitoring programs are conducted annually throughout Pacific region and collect foundational data for a variety of uses. An upcoming stock assessment framework currently under review by the Stock Assessment Coordinating Committee (SACC) for implementation with new PST funding and programs may include rationale for a network of intensive/extensive CU indicators in representative biogeoclimatic zones.
8	1.3	Update NuSEDS database of spawner abundances linked to CUs and publish via the Open Data portal	Science-StAR	Annually, March 31	On-Track, Ongoing	Spawner abundance estimates updated routinely to the Open Government Data Portal - https://open.canada.ca/data/en/dataset/c48669a3-045b-400d-b730-48aafe8c5ee6 . Stewardship of the Open Data Portal is ongoing as data becomes available.

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9	1.3	Integrate research on the abundance, health, and condition of Fraser Sockeye during their migration in the marine environment from the mouth of the Fraser River through Johnstone Strait	Science-ESD, StAR, ADGT	31-Mar-22	Delayed	Ongoing research underway through a number of initiatives including Strategic Salmon Health Initiative, Strait of Georgia work, juvenile surveys, Mission rotary screw trap and <i>Species At Risk Act</i> (SARA) recovery potential assessments. However, staffing capacity to analyze and integrate data across various initiatives remains an ongoing issue. Positions that support data acquisition, analysis, and management, vacated due to retirements, are a priority to restaff.
10	1.3	Work with PSF to enable better data transfer, availability and delivery	Science-StAR	Ongoing	On-Track, Ongoing	A committee was formed to facilitate improved data sharing and transfer with Pacific Salmon Foundation (PSF). The requirement for periodic refreshment of data sets being transferred is an issue of concern as it relates to process and DFO staffing capacity.
11	2.1 - Document habitat characteristics	Work with PSF to document salmon habitat characteristics (in freshwater)	Science-ESD, StAR	31-Mar-21	On-Track	Data collection and documentation of habitat characteristics will occur through the committee identified above. The majority of habitat data currently assembled provides static 'snapshot' of status. Potential exists to integrate new technological capacity to develop dynamic indicators.
12	2.1	Use information from Activity ID # 11 regarding habitat status indicators to inform freshwater elements of a risk assessment framework in order to explain status and trend patterns exhibited by a CU or groups of CUs (e.g. WCVI Chinook)	Science-ESD, StAR	31-Mar-21	Delayed	Deeper engagement between DFO and PSF is required in order to make progress on this activity. DFO will work with PSF to provide clearly articulated project design, with well-defined roles, responsibilities and leads.
13	2.1	Use results from Activity ID # 12 to identify potential actions and address key threats and limiting factors in an integrated management rebuilding plan for subject CUs	Fisheries Management-RMPD Science-ESD, StAR	31-Mar-22	Delayed	Identification of activities, threats and limiting factors will occur through stock rebuilding plan requirements. These activities are likely to be applied at an aggregate level (e.g., MU, planning unit, watershed) taking into account at risk CUs. The dependence of this activity on the successful completion of activities 11, 12 and 18 represents a significant volume of work for which internal organization is only partially complete. The Department will continue to work with the Province of BC given linkages to issues within their jurisdiction.
14	2.2 - Select indicators and develop benchmarks for habitat assessment	Assemble data, conduct analysis and publish one or more reports to identify a core set of environmental indicators	Science-ESD, StAR	Ongoing	On-Track, Ongoing	Data assembly by various programs is ongoing. Research has been initiated and external links to similar efforts within PST are being explored. Various core indicators to be identified for assessing status and trends of freshwater and marine ecosystems supporting wild salmon CUs.

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15	Additional strategy work	Apply WSP objectives to all current and future Ecosystems Management Branch work that may affect wild Pacific salmon habitat	Ecosystem Management-FPP	Ongoing	On-Track, Ongoing	The new Fish and Fish Habitat Protection Program (FFHPP) is bringing significant new capacity to Pacific Region for fish habitat related issues. The FFHPP will be re-organizing on a watershed basis to increase connectivity between habitat regulatory activities and the status and context in a watershed. This will support the development of greater watershed-based expertise in our habitat program and will support stronger coordination within DFO and with supporting partners. The FFHPP is also investing in new staff and resources to support integrated planning that will enable DFO to engage in strategic planning and partnerships to help to managing cumulative impacts and overall watershed condition.
16	3.1 Identify indicators to monitor status of freshwater ecosystems	Publish report on Risk Assessment Method for Salmon (RAMS) to assess potential for disturbance events or regimes in freshwater & marine ecosystems to control CU status and trend patterns	Science - ESD	31-Mar-19	Delayed	RAMS methodology is in final stages of publication and is anticipated to be released in spring 2019. RAMS and the associated delivery process have been applied and refined in several workshops over the past three years. However, requests from First Nations and Non –Government Organizations to conduct workshops continue to increase beyond current capacity to deliver. The publication of RAMS methodology will allow more DFO staff and potentially external contractors to deliver analogous workshops. Discussions with internal sectors has identified clear interest in future RAMS applications.
17	3.2 Integrate climate and ocean information into annual salmon management processes	Publish report(s) on results from initial application(s) of RAMS from one or more workshops (e.g. Cowichan Chinook, Barkley Sockeye)	Science-ESD	31-Mar-20	On-Track	Summary tables of results from workshop-based applications of RAMS to CUs or sets of CUs in several areas have been compiled. Full documentation of workshop proceedings and outcomes are outstanding, but is expected to be completed by the target deadline. The Department will work to identify fiscal resources to contract reporting functions. RAMS and associated processes supporting its utility in effectively engaging science and local area experts to assess the state of salmon CUs, associated habitat and likely limiting factors have been tested and refined through execution of several workshops held in South Coast Area over the past 5 years. Feedback from First Nations, NGOs and community participants has been highly positive.
18	3.1, 3.2	Use results from Activity ID 17 to identify potential actions and address key threats and limiting factors in any rebuilding plans for subject CUs (e.g. WCVI Chinook)	Fisheries Management-RMPD Science-ESD, StAR	31-Mar-21	On-Track	This activity is currently in the planning phase as it is dependent on the results of activity 17.

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19	3.1	State of the Salmon (SoS) Program to assess status and trends of salmon and associated environmental conditions in freshwater and marine ecosystems	Science-ESD, StAR, OSD	Ongoing	On-Track, Ongoing	Completed an SoS forum to integrate salmon and ecosystem trends across the Pacific Region qualitatively; report in progress with anticipated completion by March 2019. Completed an additional SoS forum to integrate science observations across Fraser River Sockeye Salmon life stages to inform annual survival. Results are published and available online: http://waves-vagues.dfo-mpo.gc.ca/Library/4072511x.pdf .
20	3.1, 3.2	Assemble environmental data (e.g. climate indices, ocean circulation indices, freshwater temperature, discharge, nutrient loads, primary production etc.) to assess potential for interactions among climate, ecosystems and habitat state to control status and trend patterns exhibited by priority CUs (e.g. southern Chinook and Sockeye) in representative biogeoclimatic zones (e.g. Fraser, West Coast Vancouver Island)	Science-ESD, OSD, StAR	Ongoing	On-Track, Ongoing	Ongoing assembly of legacy data sets from various programs, analysis and publication. External links to similar efforts within PST are being explored. Most of targeted work is via narrowly scoped projects funded through competitive funds, rather than a comprehensive and integrated long-term program. The Department intends to utilize the SoS program to support integration of datasets and analysis to assess broader status and trend patterns.
21	3.1, 3.2	Report on indicator utility to compare the role(s) of major freshwater and marine ecosystem drivers in controlling status and trend patterns exhibited by data rich CUs and associated CU aggregates originating from two or more major biogeoclimatic zones in Canada's Pacific Region	Science-ESD, StAR	31-Mar-21	On-Track	Legacy time series data sets (1975-2017) for freshwater and marine environment indices of relevance to various life-history stages of specific salmon CUs (Okanagan Sockeye, Barkley Sound Sockeye, Chilko Sockeye, Smith Inlet Sockeye) have been assembled. Analysis for simple correlation or cause-and-effect associations with CU life-stage variations is ongoing. One or more reports on results are on track for completion by target date. Results to date from analyses of legacy data sets are providing new insights into how cumulative impacts of environmental events or regimes in freshwater and marine ecosystems drive annual variations and abundance trends exhibited by salmon CUs. Preliminary results have served as the basis for presentations to three national (Vancouver) and international workshops (Edinburgh, Scotland; Santa Barbara, United States) in 2018-2019, in addition to presentations to several Pacific region stewardship or harvest management round tables at the request of DFO Fisheries Management.

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22	3.2	Provide salmon and environmental time series information (e.g. coast-wide Sockeye indicators) to State of the Ocean meeting	Science-ESD, StAR	Ongoing	Facing Challenges, Ongoing	Time series information on qualitative to quantitative associations amongst Sockeye Salmon productivity, production, biological traits and environmental factors have been provided to State of the Ocean meeting annually for more than a decade. However, the time series information compiled and provided to the State of the Pacific Ocean are on an opportunistic basis and not part of an established integrated program. Only Chinook salmon under PST have been formally established as annually updated sets of salmon indicators. Observations for sets of coast-wide Sockeye indicators are compiled annually through a volunteer network without any assurance of continuity. Similarly juvenile salmon data sets obtained from annual marine surveys do not have secure funding and have little opportunity for expansion. To routinely inform State of the Ocean and State of the Salmon initiatives, the Department will work to review the potential utility of maintenance of sets of salmon species indicators and will rationalize a system on intensive and extensive indicators that provides coverage of major freshwater and marine ecoregions.
23	3.2	Develop options and recommended actions through the Salish Sea Marine Survival Project to address human threats and biological limiting factors affecting survival of Chinook and Coho in the Salish Sea	Science-ESD, StAR	1-Dec-19	On-Track	DFO Science lead the key basin wide sampling and research projects for examining the distribution and condition of juvenile salmon in the Strait of Georgia for the PSF Salish Sea Marine Survival Project. DFO Science has contributed information on the abundance and spatial distribution of salmon juveniles within the Salish Sea. Work is continuing with the analysis of juvenile condition (energy density, fatty acid and stable isotope analysis), early marine growth (otolith and scale analysis) and stock specific variations in their conditions between years, seasons and rearing areas. In combination with information collected of other data (e.g., biological food web data, disease agents, etc), results are being considered to develop options to address threats to survival.
24	Additional strategy work	Support ongoing national and provincial initiatives and increase interagency communication on cumulative effects assessment and management issues pertaining to shared aquatic ecosystem values	Policy and Economics - Policy	31-Mar-19	Completed	Several meetings were held throughout 2018-19 on aquatic ecosystem values, including significant interest from the BC government. The Policy team has reached out to the BC government on habitat issues and to national colleagues on rebuilding plan discussions. The public interest in understanding cumulative effects for SARA listings, rebuilding plans and Chinook measures remains very high.
25	4.1 Implement an interim process for management of priority CUs	Include information on CU status considerations in IFMPs	Fisheries Management-SMCS Science-StAR	Ongoing	On-Track, Ongoing	All information available on completed status evaluations and integrated biological status designations are included in Integrated Fisheries Management Plans (IFMPs). This includes 15 of the 35 Southern BC Chinook CUs, 5 Interior Fraser River Coho CUs, and all Fraser River Sockeye Salmon CUs. Additionally, results are available from a review of a habitat-based approach to determine benchmarks for Strait of Georgia and Lower Fraser River Coho CUs. Progress on this activity will be linked to the completion of WSP integrated biological status assessments; as assessments are completed, information will be included in relevant IFMP sections.

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26	4.1	Publish guidance outlining how DFO responds to Red CUs	Fisheries Management-SMCS, Science-ESD, StAR	31-Mar-22	On-Track	Draft guidance document has been prepared and is currently being reviewed for consistency with other relevant policies and regulatory requirements (eg. anticipated Bill C-68 rebuilding plan requirements). DFO intends to consult on the key elements of the guidance it will follow in responding to red status CUs. As part of this consultation, DFO intends to distribute a draft red CU guidance document in the fall of 2019 for review and feedback. New funding sources and collaboration with partners will be key to successful rebuilding of red CUs where DFO capacity is insufficient.
27	4.1	Improve incorporation of existing available habitat and ecosystem status information into IFMPs	Fisheries Management-SMCS	Ongoing	Facing Challenges, Ongoing	IFMPs incorporate information on ecosystem and habitat status where information is available. However, a rigorous review and incorporation of available information in IFMPs has not been completed. DFO will work to complete this review as soon as possible.
28	4.1	Complete recovery assessments and identify rebuilding options for any COSEWIC assessed salmon species/stocks	Fisheries Management-SMCS	Ongoing	On-Track, Ongoing	Draft Recovery Potential Assessment (RPA) documents to be produced by end of fiscal 2019. RPA working papers for Interior Fraser Coho, Okanagan Chinook, and Fraser River Sockeye will be presented at CSAS peer review meetings in 2019. DFO recognizes that there exists significant and sustained public interest in RPAs, SARA listings, recovery measures and rebuilding plans.
29	4.2 Design & implement a fully integrated strategic planning process for salmon conservation	Map CUs, freshwater and marine ecosystems, Fishery Management Units, and Outlook Units to clarify connections and nesting	Science - StAR	31-Mar-19	Delayed	Initial mapping of CUs, Fishery Management Units and Outlook Units has been completed. An agreement exists to simplify terminology and align units with management needs. However, new regulatory requirements under Bill C-68 have created uncertainty in how a 'stock management unit' for salmon is defined. Work will continue in the development of species management and assessment frameworks.
30	4.2	Develop fishery reference points and associated decision rules that consider biological and other factors for harvest management, as priority and capacity permits	Fisheries Management-SMCS Science-StAR	Ongoing	On-Track, Ongoing	Fishery reference points and associated decision rules for fishery management units are documented in annual salmon IFMPs. Development of new or changes to existing fishery reference points / decision rules are considered for priority fishery management units and consulted on as part of the process to develop salmon IFMPs. Development or revision of existing fishery reference points and decision rules will be conducted based on management priorities and capacity to support the required analysis and consultation. Please see the annual IFMPs for documentation of existing fishery reference points and decision rules.

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31	4.2	Develop a WCVI Chinook rebuilding plan	Science-StAR	2020	On-Track	This rebuilding plan is a pilot under anticipated Bill C-68 rebuilding regulations and is being developed in consultation with local First Nations and roundtable meetings. 15-20 West Coast of Vancouver Island (WCVI) freshwater and estuary habitat status assessments have been completed to date and are being used to conduct risk assessments to identify priority areas for habitat restoration. Work is being done to develop a marine risk assessment that will compliment localized fishery and hatchery management plans.
32	4.2	Upon SARA listing of any Pacific Salmon Designatable Units (DUs), initiate recovery planning processes	Ecosystem Management-SARA	Ongoing	On-Track, Ongoing	No salmon DUs were listed under SARA in 2018-19, therefore no SARA recovery planning processes were initiated.
33	Additional strategy work	Advance Pacific North Coast Integrated Management Area (PNCIMA) implementation, building upon PNCIMA plan in an Ecosystem-Based Management framework	Ecosystem Management-Oceans	Ongoing	On-Track, Ongoing	The Reconciliation Framework Agreement for Bioregional Oceans Management and Protection between Canada and 14 Pacific North Coast First Nations was announced on June 21, 2018. Negotiations towards the establishment of trilateral (Canada, BC, Pacific Coast FNs) governance structures for PNCIMA Plan implementation are anticipated to be completed by Fall 2019. Additionally, the development of an MPA Network for the Northern Shelf Bioregion is ongoing. Substantive work has been undertaken to advance the MPA process, including a draft MPA network design scenario released to Stakeholders and non-partnering FNS for their review and input. Endorsement of the MPA Network Action Plan is targeted for late 2020.
34	Additional strategy work	Document SEP program activity by CU (enhancement, community involvement, habitat restoration)	Ecosystem Management-SEP	Jun-19	Delayed	All hatchery enhancement work has already been documented by CU in a regional database and the annual production plan. However, individual community stewardship projects and restoration projects often benefit multiple species across CUs, and targets may need revision to track these activities in a different manner, possibly by watershed.
35	Additional strategy work	Continue to implement transparent planning process for hatchery production taking into account the WSP objectives of wild salmon conservation and sustainable fisheries	Ecosystem Management-SEP	1-Jul-19	On-Track	Annual IFMP consultations led by Fisheries Management underway. DFO hatchery production is included in this consultation.

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36	Additional strategy work	Investigate new research tools to diagnose and study disease and other conditions affecting wild salmon	Science-ADGT	Ongoing	On-Track, Ongoing	New tools and approaches are an ongoing research activity. Examples include: novel molecular tools to identify salmon in a viral disease state; advanced genomic techniques to support the development of diagnostic tests for pathogens, investigation of the effects of pathogens on hosts, and examination of how environmental factors influence the outcome of infection; and tools developed to predict the presence of specific stressors, both single and cumulative, and stage smolt readiness. Most of targeted work is via narrowly scoped projects funded through competitive funds rather than a comprehensive, integrated long-term program. The Department will continue to seek additional resources through internal and external funding programs.
37	Additional strategy work	Continue to co-lead the genomic research for the Strategic Salmon Health Initiative	Science-ADGT	Dec-19	On-Track	Work continues on the Strategic Salmon Health Initiative. Infectious agents and epidemiological analyses are underway to identify associations between infection profiles and year-class strength, and physiological indicators of disease. Potential transmission dynamics between cultured and wild fish are also being assessed.
38	Additional strategy work	Complete scientific research and a risk assessment process with respect to risk of net-pen salmon farms in the Discovery Islands area to migrating Fraser River Sockeye Salmon	Science-ADGT	Ongoing	On-Track, Ongoing	DFO Pacific Region Science staff routinely provide science advice and participates in risk assessments. In November 2018, DFO completed four pathogen risk assessments on Fraser River sockeye in the Discovery Islands and in January 2019, a risk assessment of piscine reovirus on Fraser River sockeye in the Discovery Islands. Moving forward, this work will inform decision making. Key scientific research regarding Fraser River Sockeye Salmon and net-pen risks includes: examining Fraser Sockeye migration timing and residency patterns in the Discovery Islands, pathogen prevalence in juvenile and adult Sockeye with respect to farm sites and researching the effects of virus exposure on the swimming and respiratory capacity of juvenile Sockeye Salmon. Key initiatives aimed at managing risk and limiting interactions between wild and farmed salmon are underway including a study on alternative aquaculture technologies and the piloting of an Area Based Management approach for aquaculture.
39	Additional strategy work	Review requirements for salmon farms to ensure risks to wild salmon are minimized	Fisheries Management- Aquaculture Science-ADGT	30-Sep-19	On-Track	Development of the Framework for Aquaculture Risk Management (FARM) was announced in October of 2018. Publication of this framework is anticipated later this year, in line with recommendations from the 2018 CESD audit on salmon farming. The Department is working to develop a decision-making framework for disease management in response to the 'Namgis/Morton Court decision, which is being informed by the principles identified in FARM. The Department recognizes the sustained high level of public interest in this activity.

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40	Additional strategy work	Ensure mandatory reporting related to the Aquaculture Activities Regulation	Fisheries Management-Aquaculture	Ongoing	On-Track, Ongoing	The Aquaculture Activities Regulation was implemented in 2015 and requires regions to participate in the collection and tracking of national aquaculture annual reports. Engagement with industry around mandatory reporting is ongoing. Drug and pesticide use data are publically reported on by National Headquarters. Benthic data are publically reported regionally. This data is available here: Drug and Pesticide: https://open.canada.ca/data/en/dataset/288b6dc4-16dc-43cc-80a4-2a45b1f93383 ; Benthic: https://open.canada.ca/data/en/dataset/7e76fdc8-c36a-491a-9afb-4f9280c929e8 .
41	5.1 - Assess the status of CUs and populations	Assess the value of annual lake stock assessments and monitoring programs for fall fry populations in the Fraser Basin with the goal of increasing work from two to four lakes annually	Science - ESD	31-Mar-19	Completed	DFO staff have planned and are currently implementing the expansion of field work to include four fry productivity lake assessments in any given year as part of a larger rotational scheme that targets dominant sockeye years. Additional scientific work to explain the results of surveys is being considered on an ongoing basis.
42	5.2 - Plan and conduct annual fisheries	Work towards implementation of Fisheries Monitoring and Catch Reporting Framework to incorporate risk-based standards and monitoring of harvester-funded programs	Fisheries Management-SMCS	Ongoing	On-Track, Ongoing	First drafts of risk assessments have been completed for the majority of commercial salmon fisheries and will be discussed as part of the 2019/20 IFMP development process.
43	5.4 - Plan and implement annual enhancement activities	Develop explicit biological goals for hatchery-influence on populations	Ecosystem Management-SEP	1-Jun-20	On-Track	Publishing of the CSAS paper "Genetically Based Targets for Enhanced Contributions to Canadian Pacific Chinook Salmon Populations" (Withler, et al 2018) has provided the first step in the completion of this activity. The next step will involve the development of genetic management guidelines to translate CSAS input into DFO operations.
44	5.4	Continue to implement transparent decision making framework for hatchery production in fishery planning processes that takes into account WSP objectives, balancing of risks of genetic effects, and the socio-economic benefits of increased stock abundance	Ecosystem Management-SEP	Jul-19	On-Track	A 2018 update of DFO's planning framework (SEP Production Planning: A Framework, DFO 2012) is complete. This framework is now used in conjunction with 'A Biological Risk Management Framework for Enhancing Salmon in the Pacific Region' (DFO 2013) and other supporting guidance material to guide enhancement decisions.
45	5.4	Implement annual enhancement programs that utilize emerging science on hatchery-wild interactions	Ecosystem Management-SEP	Ongoing	On-Track, Ongoing	Development of genetic management guidelines to translate CSAS inputs into DFO operations is underway.

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46	6.2 - Conduct regular reviews of the success of the WSP	Coordinate annual WSP implementation reporting, and publish annual report on the DFO website	Policy and Economics-Policy	Annually, April 30	On-Track, Ongoing	Internal coordination around activity tracking, reporting metrics and Wild Salmon Policy (WSP) status will continue on an ongoing annual basis. Annual Reports will continue be produced, published and made publically available on the DFO website.
47	6.2	Coordinate 5-year reporting and publish 5-year review report on the DFO website	Policy and Economics-Policy	30-Apr-22	On-Track	Preliminary work surrounding reporting metrics is in early stage development. Further work will occur closer to completion date.
48	Additional strategy work	Coordinate the addition of activities into the WSP Implementation Plan based on renewed <i>Fisheries Act</i>	Policy and Economics-Policy	2020	On-Track	Bill C-68 is currently in the parliamentary process and when/if approved, work will commence to address this activity.