

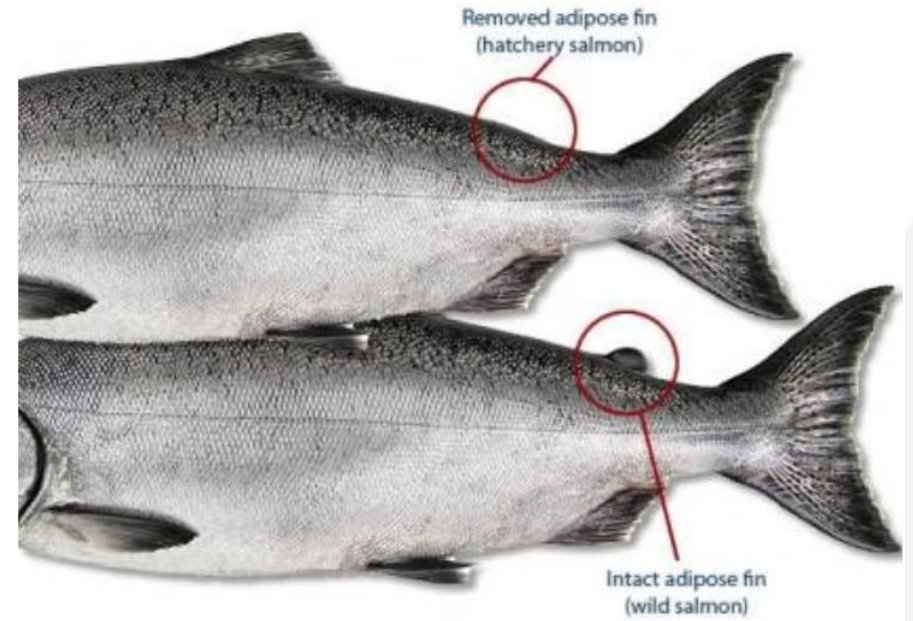


Mark-Selective Fisheries Update

March 2024

Purpose of presentation

- Background – Key Drivers
- Context and Objectives
- Work to date
- Next steps



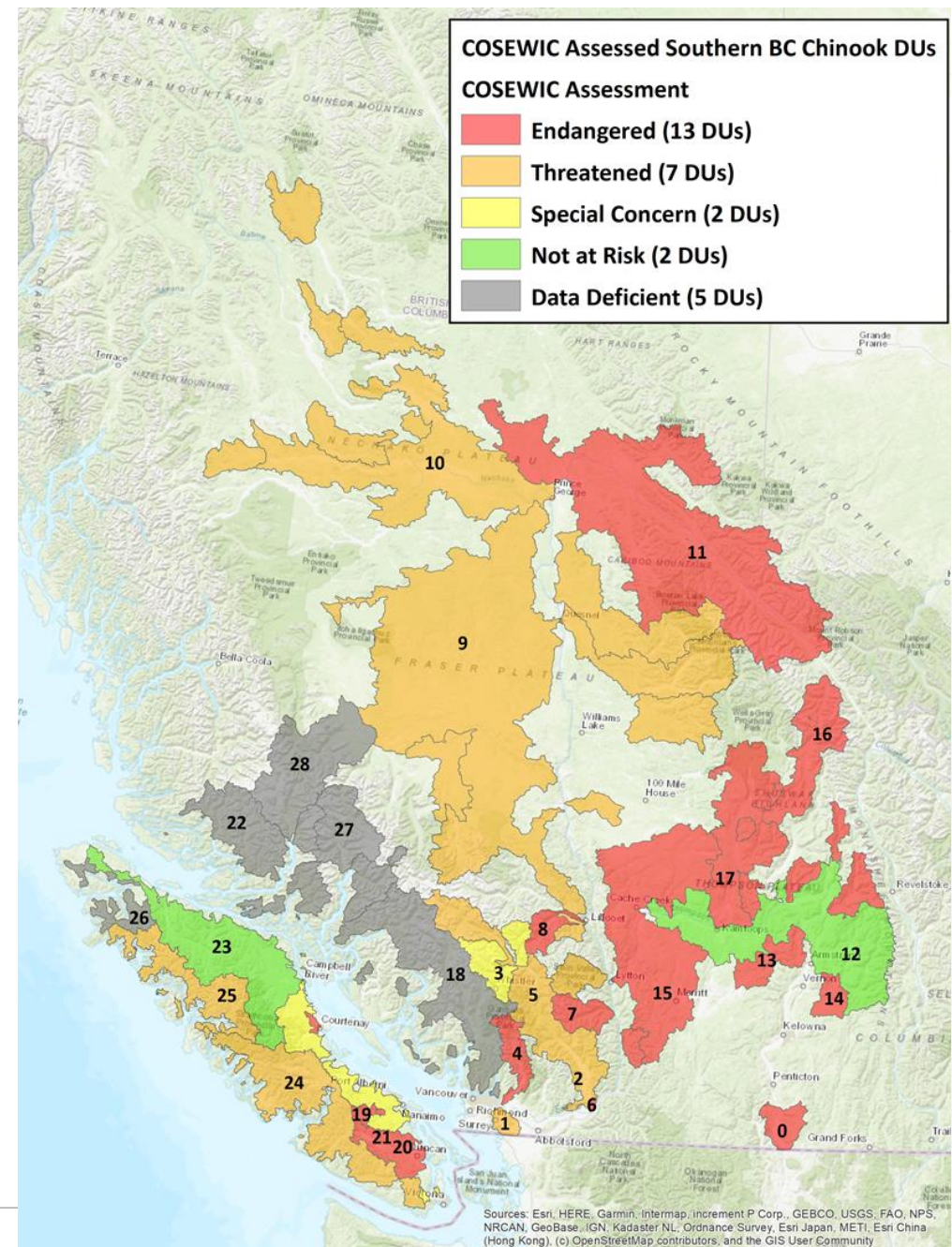
Background – Key Drivers

Conservation: Pressures and threats to salmon stocks are diverse and require significant action through an integrated management approach addressing habitat, harvest, hatcheries and other factors.

Significant conservation concerns for wild Southern BC Chinook require a continued precautionary management approach.

Hatchery Management: Improve the conservation of wild salmon by reducing the genetic risk of hatchery production.

Sustainable Harvest: Improve tools available to selectively harvest healthy enhanced populations while limiting mortality on wild Chinook including improved understanding of fishery related incidental mortality.



Context

- **Sustainability** of mixed-stock fisheries for Chinook salmon in southern BC marine waters **requires limiting impacts on stocks of concern**. Mark-selective fisheries (MSF) and improved selective fishing practices have been shown to be an effective management tool.
- While MSFs are inherently designed around the targeted harvest of hatchery production, they need to be carefully planned over time and space, and supported by enhanced monitoring programs, to ensure that the potential impact on wild stocks of concern (e.g., release mortalities) remain within acceptable limits.
- The **Pacific Salmon Strategy Initiative (PSSI)** provides new investments to support potential implementation of Chinook mass marking and mark-selective fisheries as part of an integrated management approach.
- As part of PSSI, DFO developed a **MM/MSF discussion paper, released June 2022**, to initiate a dialogue on the benefits and challenges associated with the use of MM and MSF.

Objectives for MM and MSF

- 1. Conservation** – Support the sustainability of major fish stocks, particularly those of conservation concern, by limiting fishery impacts on unmarked wild stocks to acceptable levels. An MSF could provide a **more precautionary fishery option** than a non-selective approach under certain conditions identified in this implementation framework.
- 2. Sustainable Use** – Provide harvest opportunities where limited harvest impacts might not affect the sustainability of wild stocks of conservation concern and/or their rebuilding potential. MSFs could provide **harvest benefits to First Nations, recreational and commercial harvesters**.
- 3. Hatchery Genetic Management** – To the extent practicable, hatchery produced fish should not adversely impact the genetic make-up or biodiversity of wild origin stocks in natural spawning environments, or in some cases when fish are selected for hatchery brood stock for rebuilding purposes. A key objective of MSFs is the **selective removal of marked hatchery fish**, before they return to these locations.

Implementation Approach

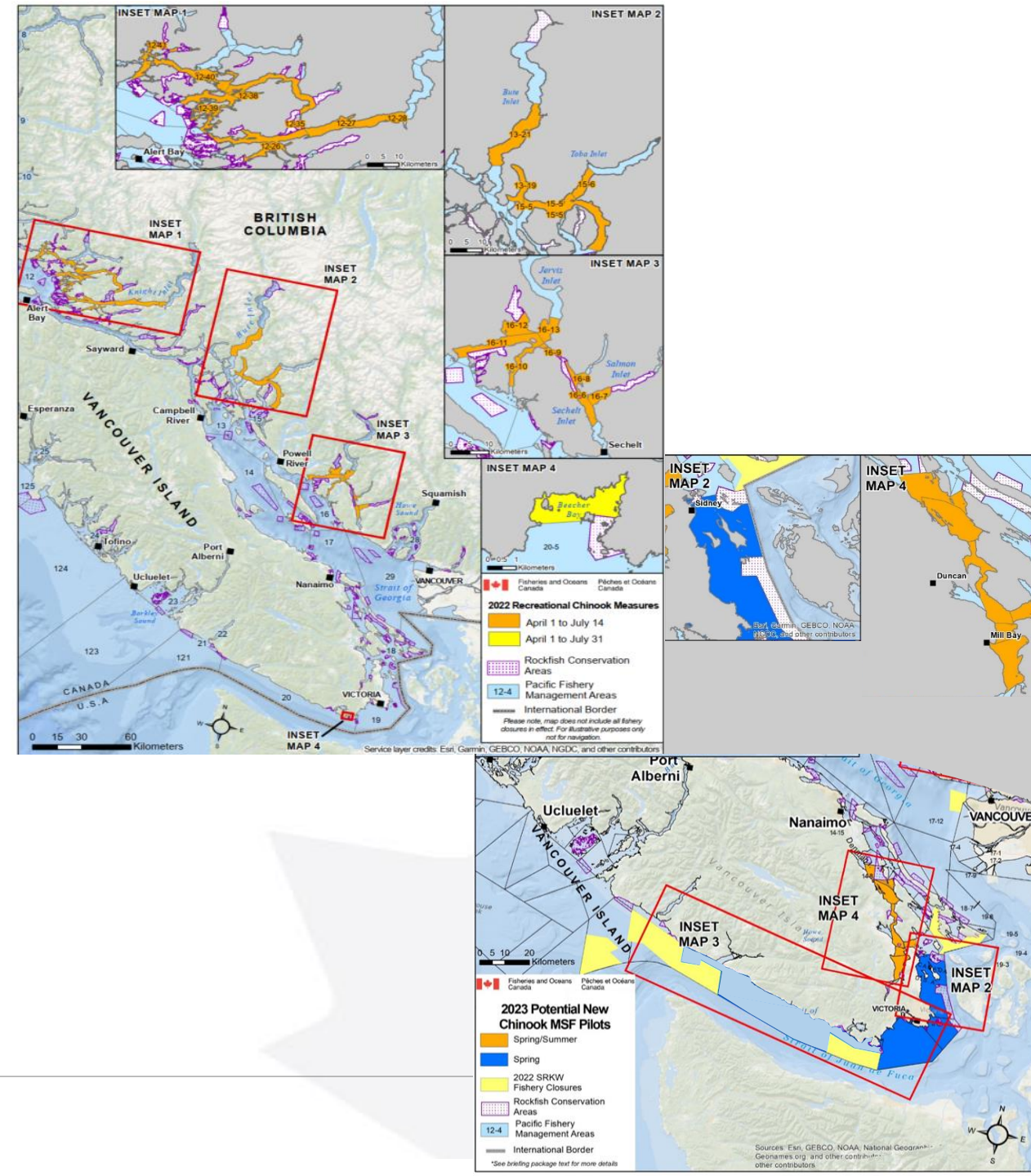
- 1. Interim Approach – MSF pilots:** Explore opportunities to test limited MSF opportunities with associated monitoring/assessment **while** work on a broader implementation approach for MM and MSF is being completed.
 - Used interim evaluation criteria to support MSF pilots
 - Existing pilots continue in Mainland Inlets and Beecher Bay (recreational); Sarita (First Nations)
 - Two new recreational pilots approved in 2023 – Victoria and Saanich-Gulf Islands
 - Apply adaptive management to adjust MSF based on analysis of results during post-season review – i.e., a “learn by doing” approach
- 2. MSF Operational Implementation Framework** – supports longer term decision making using risk-based, transparent and collaborative way forward for guiding evaluation, decision making, implementation and review of MSFs in BC waters targeting adipose fin-clipped hatchery Chinook Salmon.

1. Recreational MSF Pilots

- Portions of Areas 12, 13, 15, and 16 (mainland inlets):
 - One (1) Chinook per day, maximum 80 cm on unmarked Chinook (no maximum size on hatchery-marked Chinook) from April 1 to July 14.
- Portion of Area 20 (Beecher Bay):
 - One (1) Chinook per day, hatchery-marked only from April 1 to July 31.

New for 2023:

- Modified Area 16 regulation to hatchery-marked only retention
- Portions of Area 17, 18, and 19 (Saanich-Gulf Islands) and Subareas 19-1, 19-3 to 19-6 (Victoria):
 - One (1) Chinook per day, hatchery-marked only, from April 1 to July 14 or 31 (Area dependent).
 - Opened May 3, 2023.



2. MSF Operational Implementation Framework

- Outlines the **regulatory and policy context** for Pacific Salmon Management along with the operational context for MSF.
- A set of key criteria based on the MSF objectives and context have been developed to assist in MSF decision making and to evaluate risk to stocks.
- Considerations included:
 - **Conservation** – stocks of concern, local stocks, and ecosystem concerns (e.g., SRKW)
 - **Salmon Allocation Priority** - consistency with policy and priority for FN FSC after conservation
 - **Pacific Salmon Treaty (PST)** obligations
 - Estimated recreational effort, impacts on stocks of concern and other target stock(s)
 - Mark-rate, stock composition and abundance of target stock(s)
- **Catch Monitoring** – Framework identifies enhanced monitoring to meet our Pacific Salmon Treaty and other fishery monitoring / catch reporting obligations.

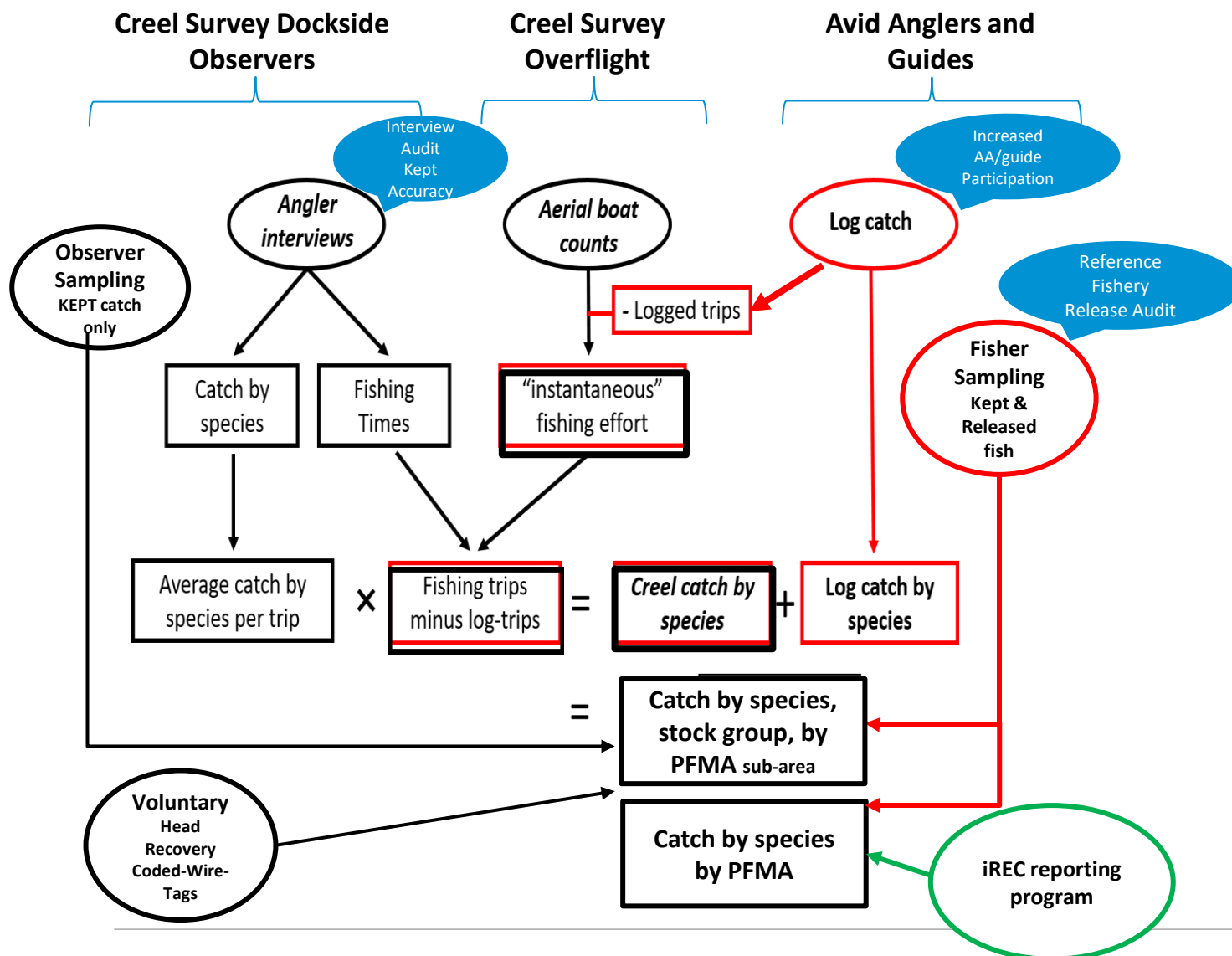
2. Operational Framework - Technical workshop process

- Commencing in December 2022, DFO hosted **series of MM/MSF technical workshops** with external groups to discuss the key issues and technical challenges of MM/MSF implementation.
- **Key issues discussed:**
 - Enhanced monitoring plans including assessment of stock composition for releases, and mark-rate in areas open to MSF
 - Risk evaluation and how to improve transparency
 - Post-season data review and reporting
 - MM for genetic management objectives
- Feedback from process used to inform **DFOs development of a draft MSF Implementation Framework.**

Highlights

- Application of a **risk evaluation framework** to support BC Chinook Salmon fisheries management
 - Some MSF regulations have been implemented on a trial basis in both marine and terminal areas. Examples include MSF recreational fisheries in portions of Juan de Fuca Strait (JDF) and the Southern Mainland inlets and First Nation MSF fisheries in parts of the West Coast Vancouver Island (Sarita).
- Further studies of '**fisheries related incidental mortality**' (FRIM)
 - UBC-SFI study using funds from BC Salmon Restoration and Innovation Fund (BCSRIF)
- **Enhanced fishery monitoring** activities:
 - Reference Fishery
 - **BCSRIF funding** (3 years starting in 2023) secured by SFI to charter boats, and DFO provided staff for at-sea data collection
 - DFO secured funds from **PSC MSF Fund** (3 years starting in 2024 season; Area 25)
 - Creel Interview Audits

MSF Enhanced Monitoring Plan for Recreational Pilots



Independent verification of at-sea releases

- Address concern that release estimates are from fisher-dependent data only
- Increase public confidence

Audit function only

- Used to compare against estimates generated from Creel and/or iREC
- Estimates from Creel and iREC will remain the official estimates
- Focus on potential MSF pilots
- Not necessary to cover all times/areas

Biological samples

- Compare mark-to-unmark ratios and legal-to-sublegal size ratios
- Understand stock composition of releases

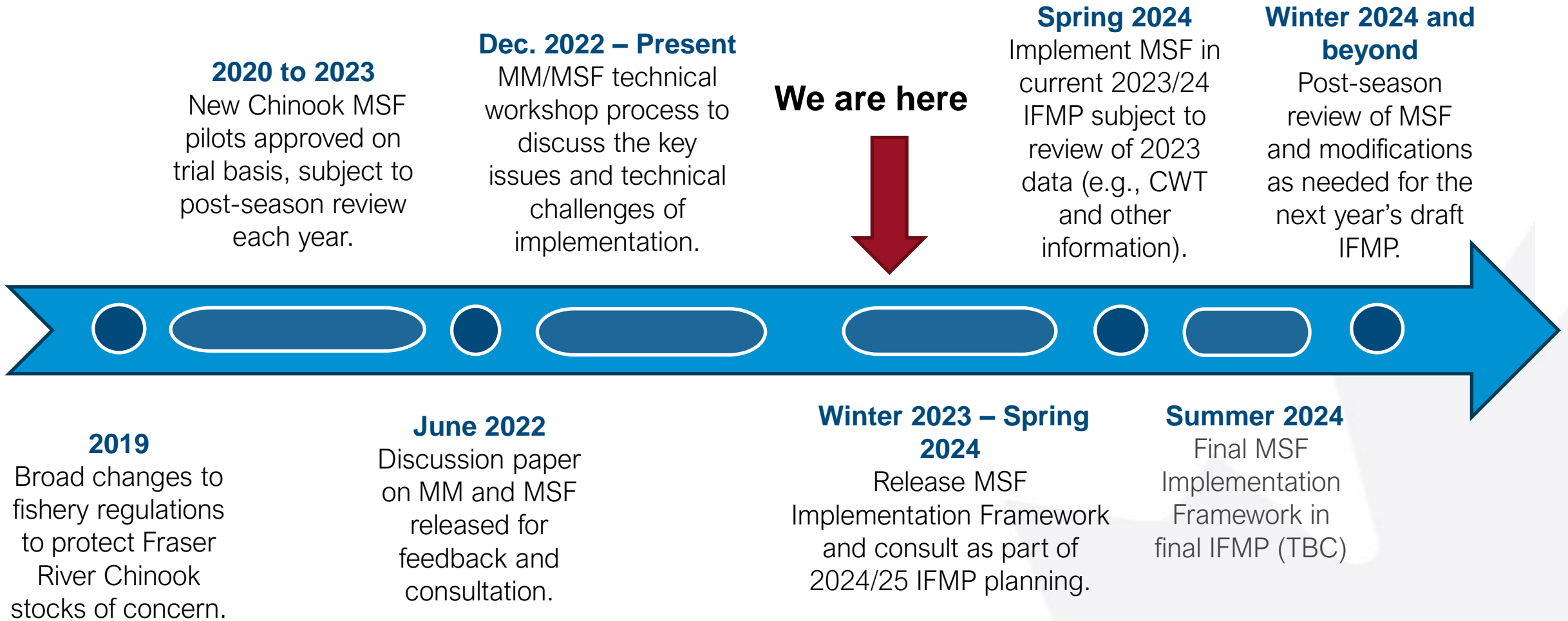
Fishery Impacts by stock

- Releases multiplied by stock proportion

Longer-term Considerations

- **Complete clearly defined frameworks and implementation plans** for MM and MSF that guide assessment requirements, evaluation of impacts on wild Chinook, and clear objectives/priorities for the MM of hatchery Chinook production lines.
 - Determine geographic areas and fisheries to prioritize for MSF
- **Potential Mass Marking (MM) changes:**
 - Identification of priorities for MM of existing southern BC Chinook production where feasible
 - Evaluate operational feasibility of new MM of priority populations for MSF
 - Integrate MSF MM priorities with other MM priorities as operationally feasible
 - Note: Opportunities to target new MM Chinook in Canada would occur approximately 2 years after marking begins E.g., 2026 for new marking (2024 Conuma pilot mass marking project).
- **Salmon Allocation Policy** - Considerations around allocation priorities for bycatch and incidental mortality are expected to be discussed as part of work to update the policy.

Timeline



Questions?