



2024 Salmonid Enhancement Program Production Planning

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Fisheries and Oceans Canada

Fraser Forum

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Outline

1. Overview of Enhancement Objectives
2. Overview of SEP Integrated Production Planning process and 2024 Timelines
3. Update on SRKW prey study and Chilliwack Fall Chinook production
4. Update on Chinook mass marking for hatchery genetic management
5. Questions on future integration of SEP Production Plan process with LFFA timelines



1. What is Salmon Enhancement?

Hatcheries

- Adult salmon are captured as they return to their streams of origin
- Eggs are taken from returning spawners and incubated at a hatchery
- Once hatched, juveniles are moved to hatchery rearing ponds and fed before release back to the stream

Benefits:

- Greater egg to fry/smolt survival
- Can support conservation/rebuilding
- Can support stock assessment
- Can create fishing opportunities

Risks:

- Can influence the genetics of wild salmon
- May compete with wild salmon for space and food
- Can attract additional fishing effort on wild salmon
- Can pose disease risks to both wild and enhanced stocks



1. Enhancement Objectives and Priorities

SEP plays a key role in DFO's work to conserve and manage Pacific salmon stocks. its primary objectives are to:

- Provide **harvest** opportunities through direct production of salmon,
- **Conserve** and **rebuild** vulnerable salmon stocks through fish culture and habitat restoration activities to improve fish habitat productivity,
- Produce **assessment** information to support management of stocks and fisheries, and
- Work with coastal communities and First Nations to provide **education** and **stewardship** opportunities by supporting their participation in cooperative fisheries and watershed stewardship activities.



1. Stock Assessment – Evaluating Stock Status and Managing Fisheries

SEP production is key to DFO's assessment and management of wild Chinook and Coho salmon

Assessment activities and analytical techniques allow management of fisheries and determine:

Distribution of stocks and contribution of stocks to **fisheries**

Progress of **conservation/rebuilding** programs

Stock status
(# of fish, how old, where they go)

Effects of **hatchery-wild interactions**

Success of **enhancement strategies**

DFO's stock assessment and harvest management planning is directly supported by SEP production and coded-wire tagging and is necessary to meet obligations under the Pacific Salmon Treaty (PST) with the United States.

2. SEP Integrated Production Planning

Annual hatchery management, planning, and assessment focuses on reviewing current production to ensure it:

- Meets the defined objectives for that population (harvest, assessment, rebuilding, conservation, and stewardship/education)
- Meets Wild Salmon Policy goals, and minimizes effects on wild salmon stocks
- Meets regional, departmental, and program priorities
- Adheres to aquaculture licenses

Production from SEP managed or supported hatcheries is determined through an annual **Integrated Production Planning** process that considers:

- DFO regional and local/area priorities
- First Nation and external input
- Consultation through the IFMP
- The Wild Salmon Policy: fish health, hatchery-wild interactions (genetics, disease, ecological competition)

2. Integrated Production Planning Timelines

September to December

- Engage with First Nations, stakeholders, and other DFO sectors on potential changes for the coming production year

January

- Finalize list of **proposed** changes for the coming year with SEP Director and DFO Senior Management

February 12, 2024

- Release draft 2024 Production Plan including **proposed** changes as part of Salmon IFMPs

February to April 15, 2024

- Engage with First Nations and stakeholders on **proposed** changes to 2024 Production Plan and receive feedback on proposals

May to June

- Review feedback with other DFO sectors, seek decision from DFO Senior Management

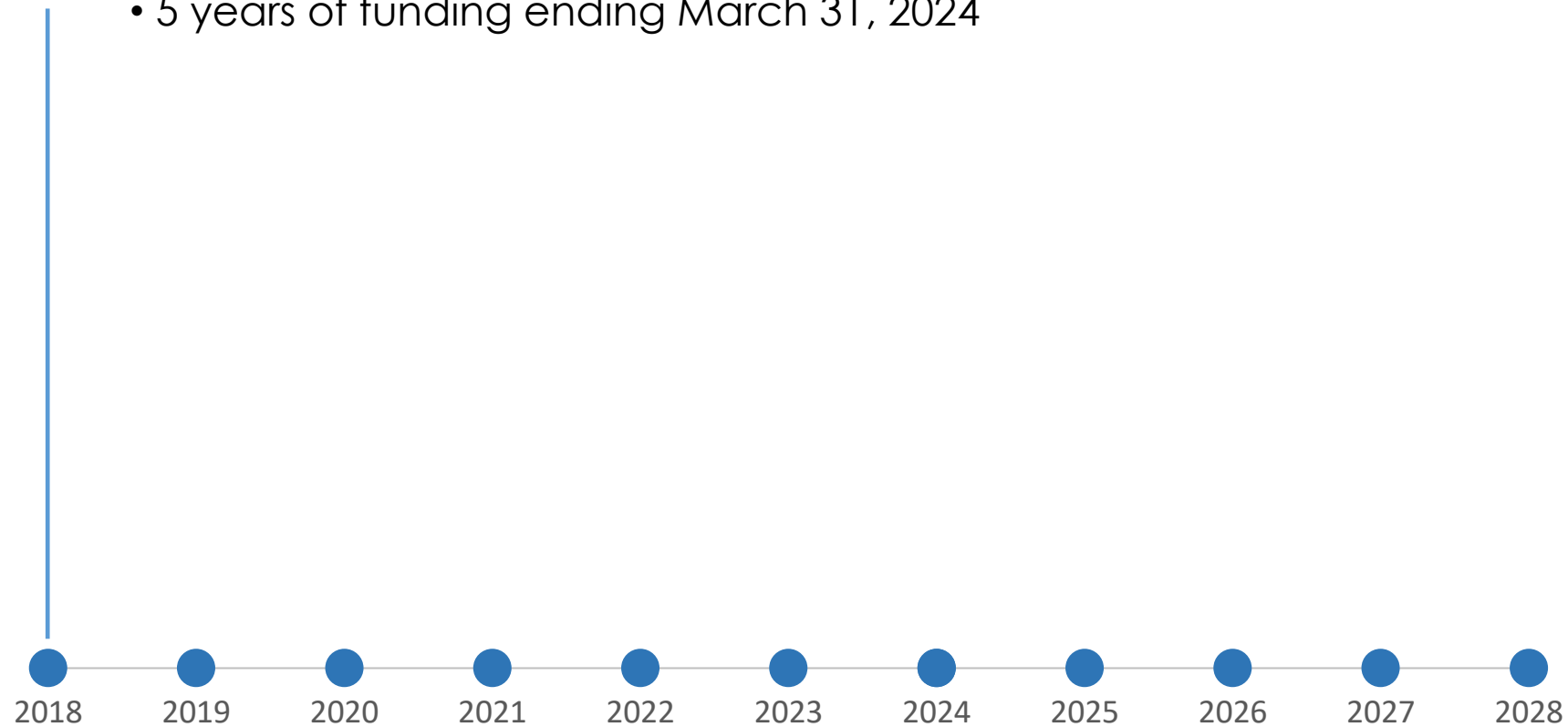
Late June

- Release final 2024 Production Plan through Final Salmon IFMPs

3. Southern Resident Killer Whale (SRKW) Prey Study

2018: Federal government announced 'immediate actions' to protect SRKW including **expanded salmon enhancement programming** starting spring 2019

- 5 years of funding ending March 31, 2024



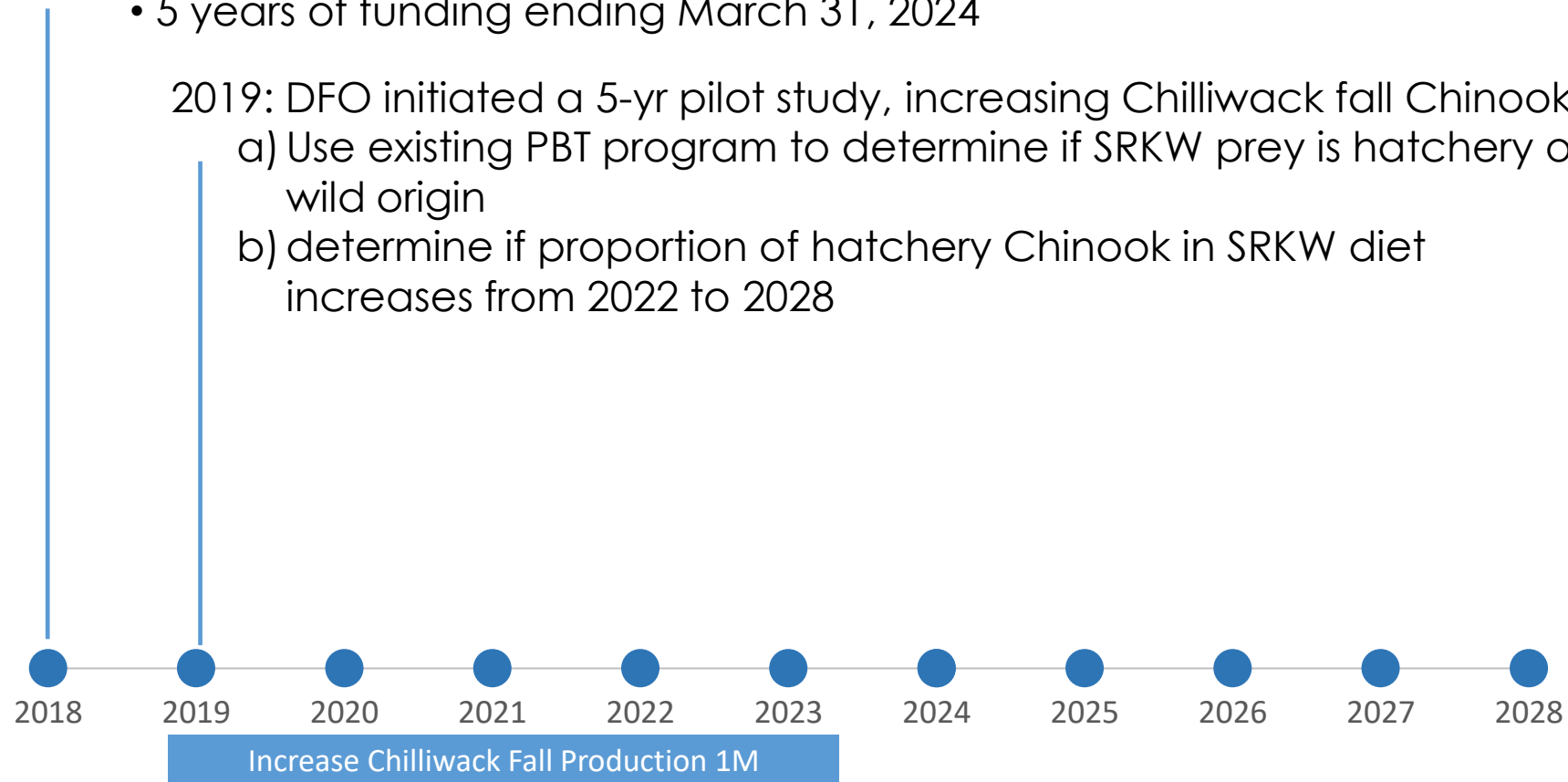
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- a) Use existing PBT program to determine if SRKW prey is hatchery or wild origin
- b) determine if proportion of hatchery Chinook in SRKW diet increases from 2022 to 2028



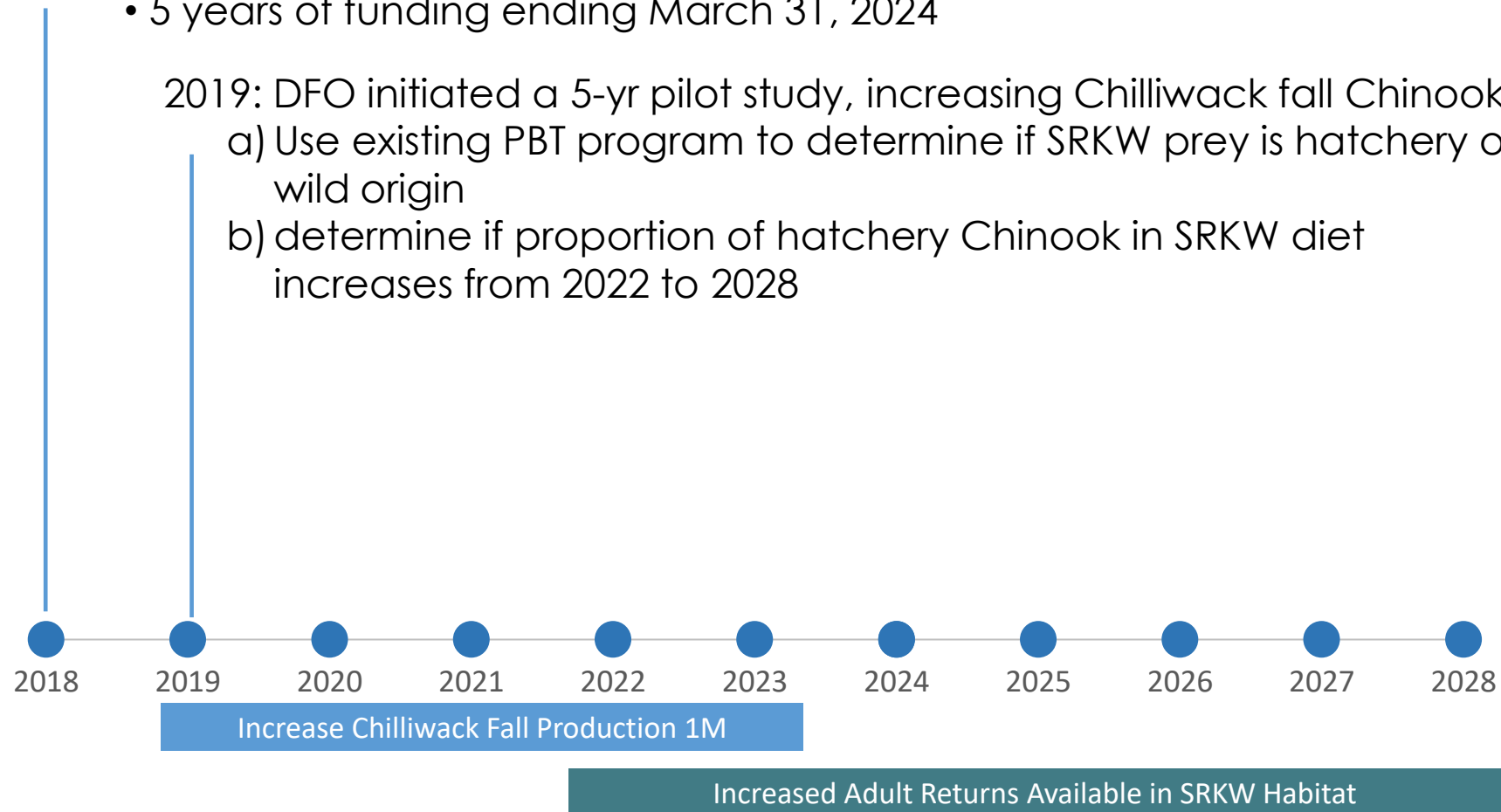
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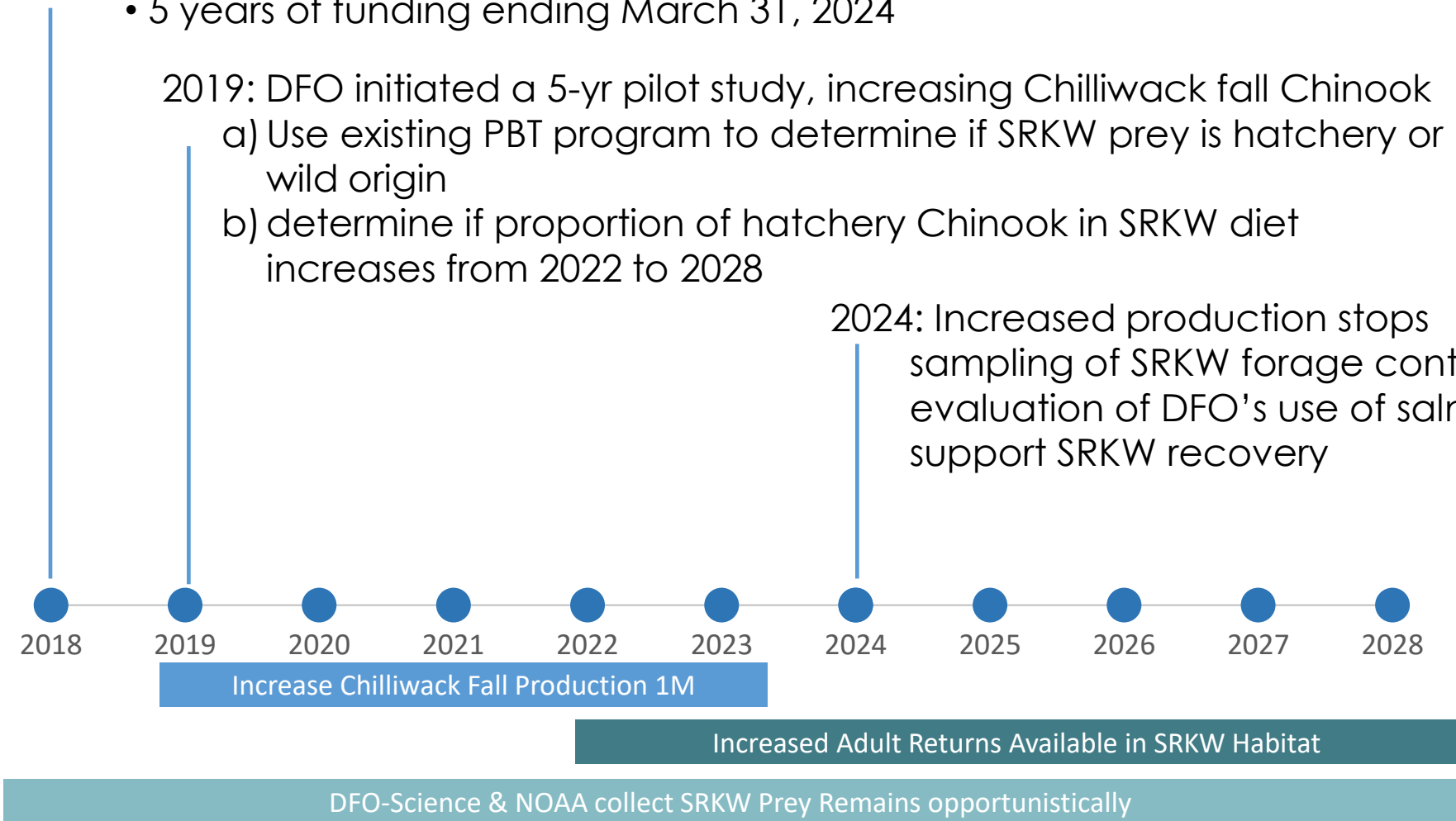
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2024: Increased production stops sampling of SRKW forage continues, allowing evaluation of DFO's use of salmon hatcheries to support SRKW recovery



3. Southern Resident Killer Whale (SRKW) Prey Study

- Chilliwack Fall Chinook production was increased in 2019 to 2023 (from 1 million to 2 million) as one of a suite of actions taken to protect and recover Southern Resident Killer Whales.
- This increase was incorporated into a formal study design to test the effectiveness of expanded hatchery programming to support SRKW recovery
- In 2024, production is planned to return to the previous level (1 million)
- Data will be collected from 2022 to 2028 to determine whether this increase in production resulted in an increase of this stock in SRKW diet
- Future production will be informed by the outcome of this study (among other criteria)

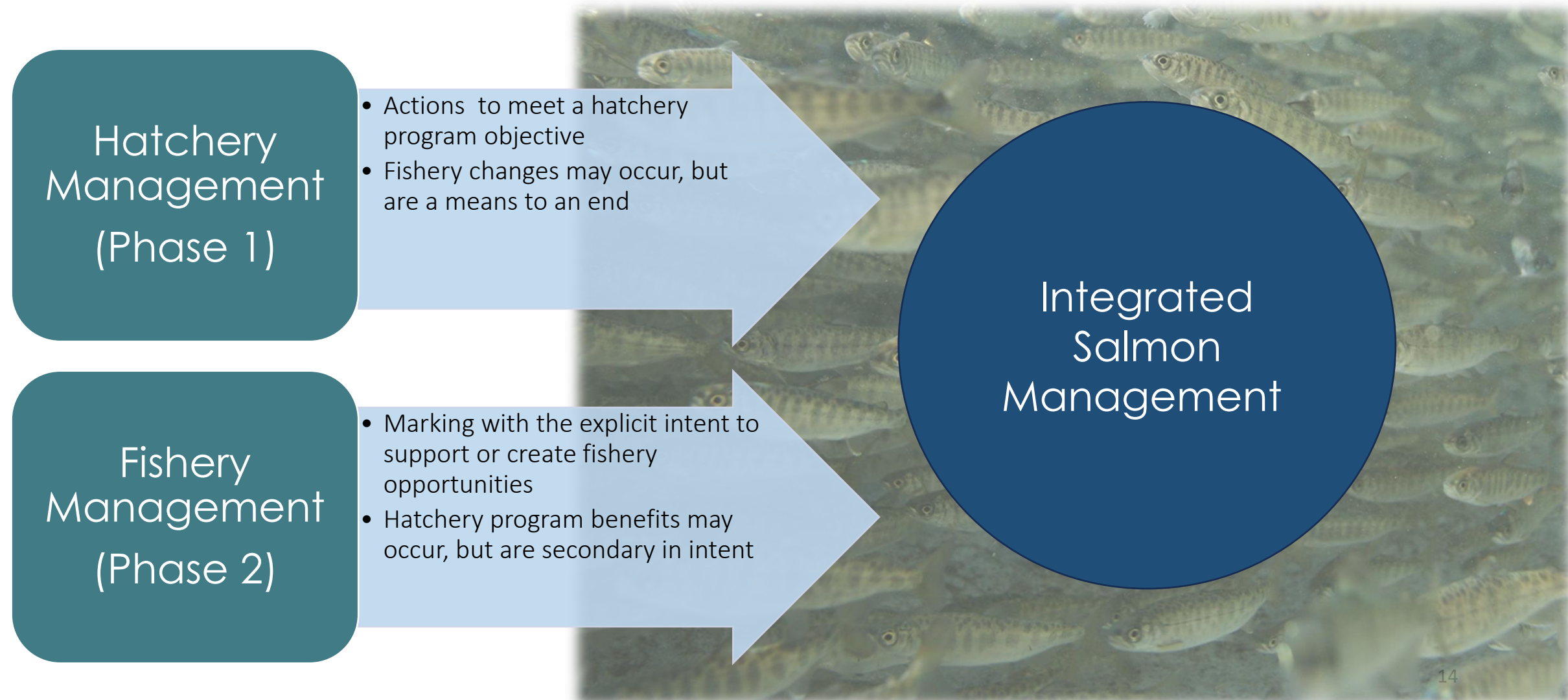
4. Mass Marking for Hatchery Genetic Management



Mass marking in this context refers to adipose fin clipping most, or all, of the production from a hatchery stock.

- SEP, Science and Fisheries Management collaborated to develop *Mass Marking Decision Criteria for Hatchery Management*
- provides the framework to inform new MM pilots for hatchery genetic management
- development process included multi-stakeholder engagement and First Nations
- This initiative is the first phase of ongoing cross-sectoral work on mass marking

4. Mass Marking Objectives



4. General Uses of Mass Marking for Hatchery Management

Reduce hatchery genetic effects

on enhanced populations through the management of the degree of hatchery influence (PNI)

Conserve natural and wild populations by reducing hatchery influence on natural spawning populations through **removal or exclusion of hatchery-origin fish**

Improve assessment

and enumeration of hatchery and natural populations

Improve assessment and evaluation of **hatchery program performance**

4. Proposed Pilot MM Populations for Hatchery Genetic Management

Stock	Objective	Release Target
Gold R*	Harvest	500,000
Robertson Cr*	Harvest/Assessment	6,400,000
Leiner R*	Rebuilding	150,000
Tahsis R*	Rebuilding	150,000
San Juan R*	Rebuilding	480,900
Burman R	Harvest	200,000 (currently MM)
Conuma R	Harvest	2,700,500 (currently MM)
Sarita R	Harvest	500,000 (currently MM)
Atnarko*	Harvest/Assessment	1,500,000

*Pending Approval

5. Future SEP Production Planning at Fraser Forum

- Is there specific information you would like to get from SEP about hatchery production that you aren't currently receiving?
- What is the best method/forum to communicate this information?
- When / how is the best way to engage with Fraser Forum and on the next year's production?
- Anything else?

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