04/05/2026

Knowledge co-production in the Pacific herring MSE process

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Canada FISHERIES AND OCEANS · Uu-a-thluk TAKING CARE OF · LANDMARK · REDHOUSE STUDIO

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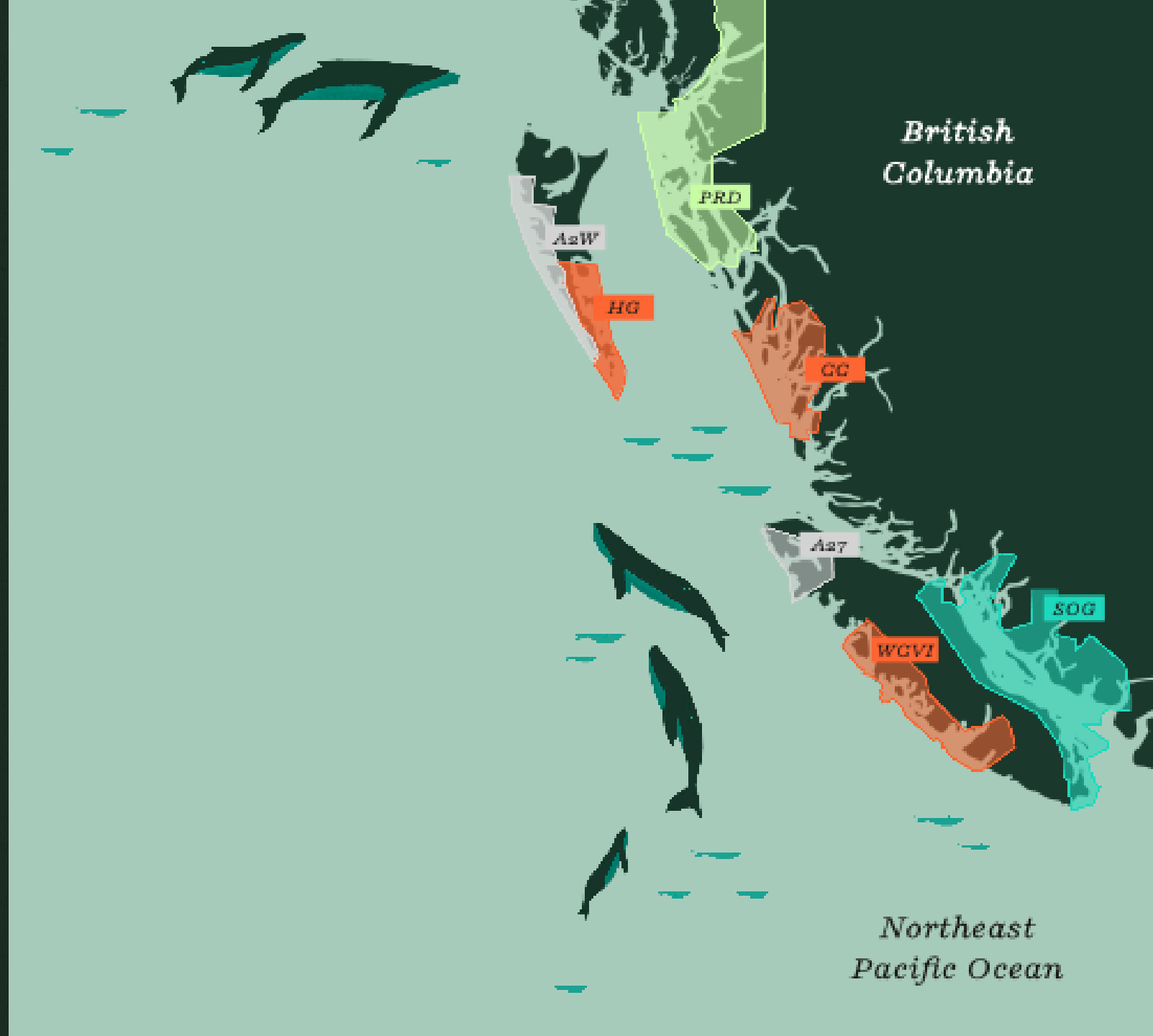
Uu-a-thluk TAKING CARE OF

LANDMARK

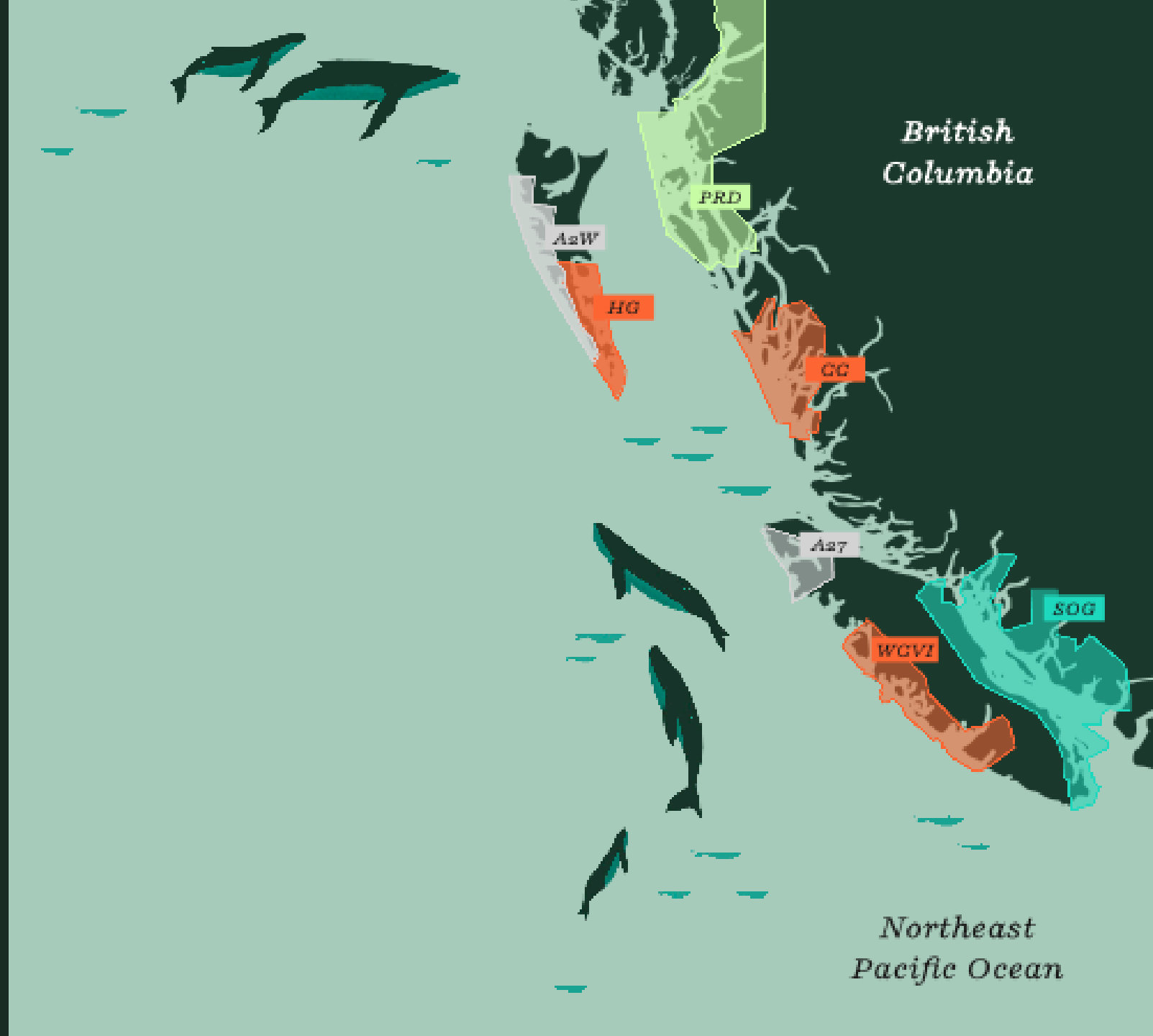
REDHOUSE STUDIO

BC Pacific Herring Stock Areas

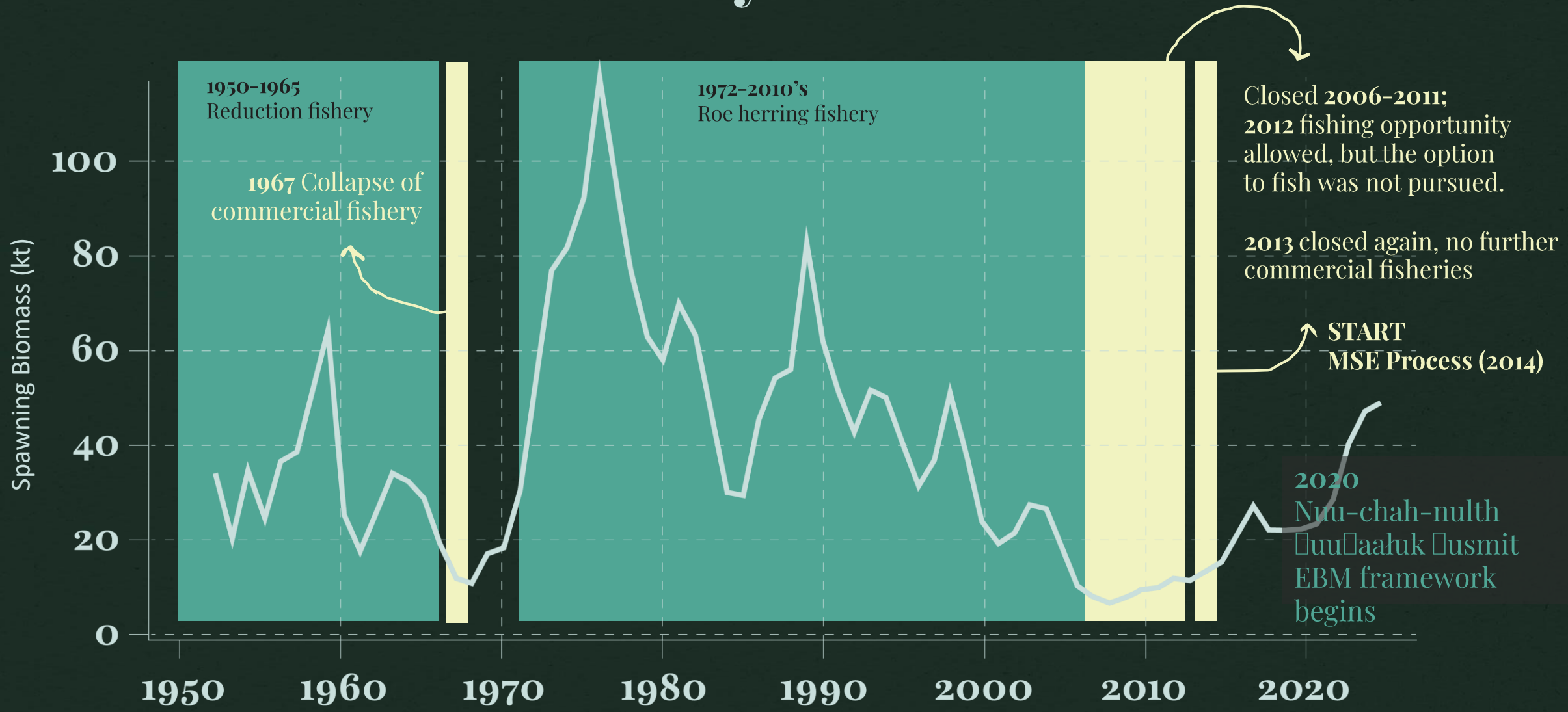


The MSE Process

1. Establish decision context
2. Specify management objectives & performance metrics
3. Define candidate management procedures (MPs)
4. Specify key processes & uncertainties in operating models (OM's)
5. Evaluate each MP communication via simulation
6. Rank & choose best performing MP
7. Apply MP monitor outcomes, review periodically



WCVI History and Context



Knowledge Co-production Process

DISCOVERY

SCIENCE

KNOWLEDGE

EXPERIENCE

DESIGN

STRUCTURE

TRANSLATE

COMMUNICATE

A Nuu-chah-nulth ecosystem-based management framework for WCVI herring will consider:

Predation and other at sea influences on herring

Aggregate and spatial/sub-stock management approach

Potential for in-season management options

Tuesday, May 5th

Modelling predator-prey dynamics to evaluate management tradeoffs for a rebuilding Pacific herring population

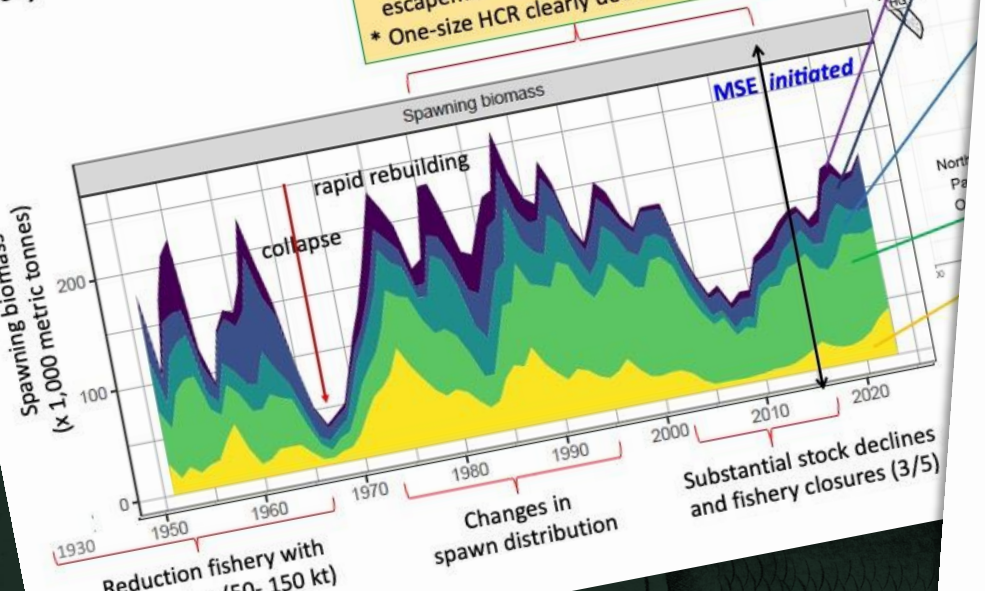
Session 06 (Day 1)

5:20 PM – 5:35 PM

Salon Pichilingue 1 (ICC)

History and stock trajectory

1986-2010:
* 5-stocks managed using constant escapement 20% harvest rate rule
* One-size HCR clearly does not fit all...



DFO initiated a process of updating the management system for Pacific Herring in 2015, first implementation in 2018

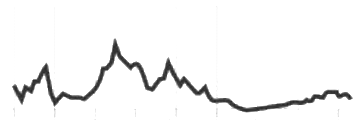
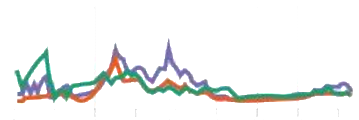
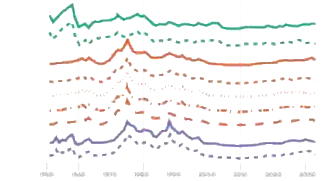
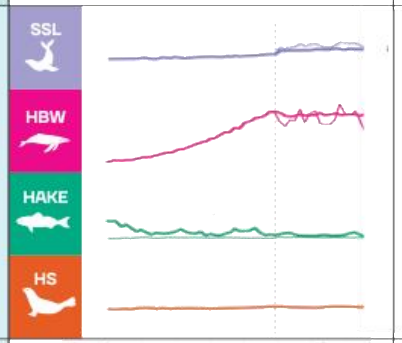
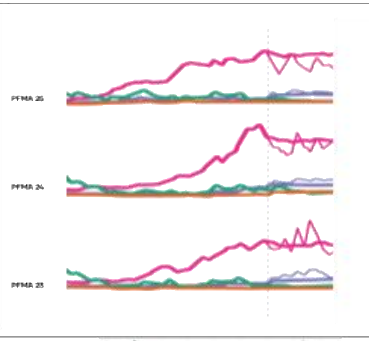
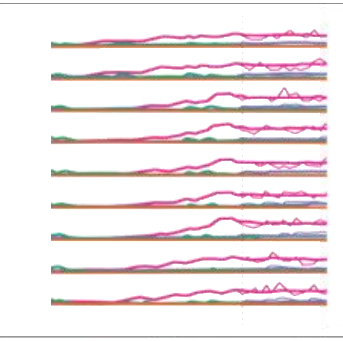
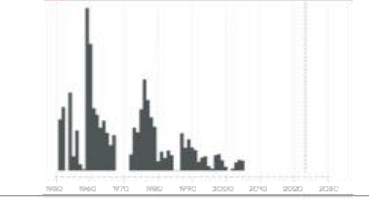
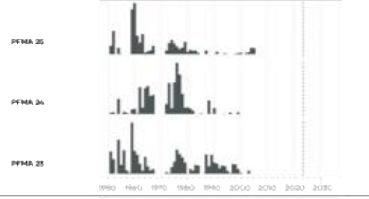
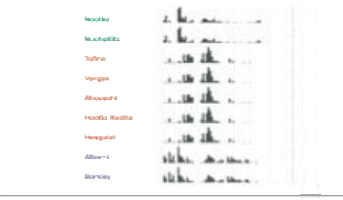
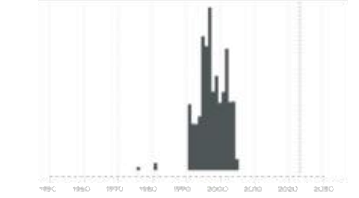
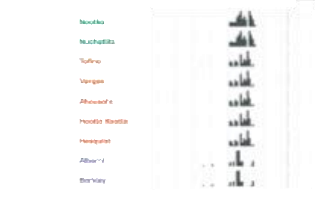
Goal: adjust the science, management, and decision-making process to meet a broad set of objectives related to rebuilding, First Nation and stakeholder engagement, and the socio-economic aspects of fishery sustainability.

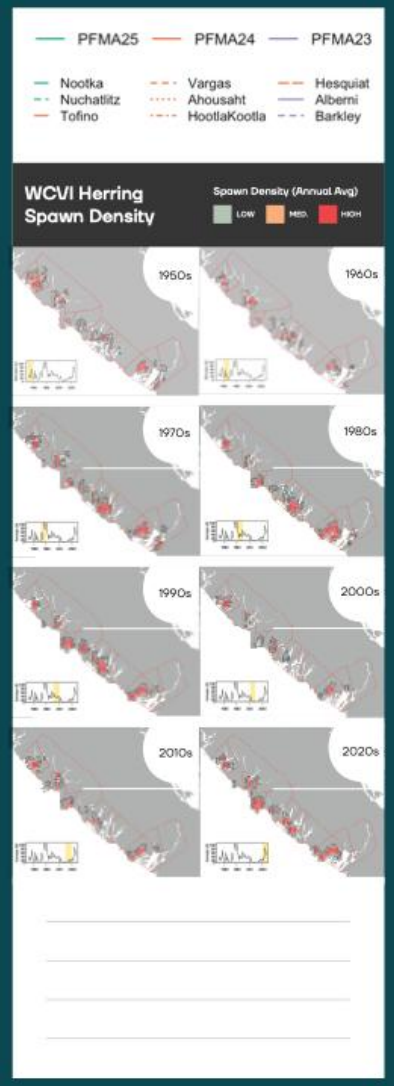
The key scientific elements of the MSE analytical framework have been developed for the 5 Pacific Herring stocks.

i) Reference points
ii) Conservation objectives,
iii) Candidate management procedures,
iv) Operating models that represent a range of key biological, ecological, and harvesting processes and uncertainties,
v) Evaluation of management procedure-operating model combinations via simulation.

However, a full cycle of the MSE process leading to selection of a <u>single</u> management procedure is incomplete, largely because of human dimensions (scope, scale, capacity)

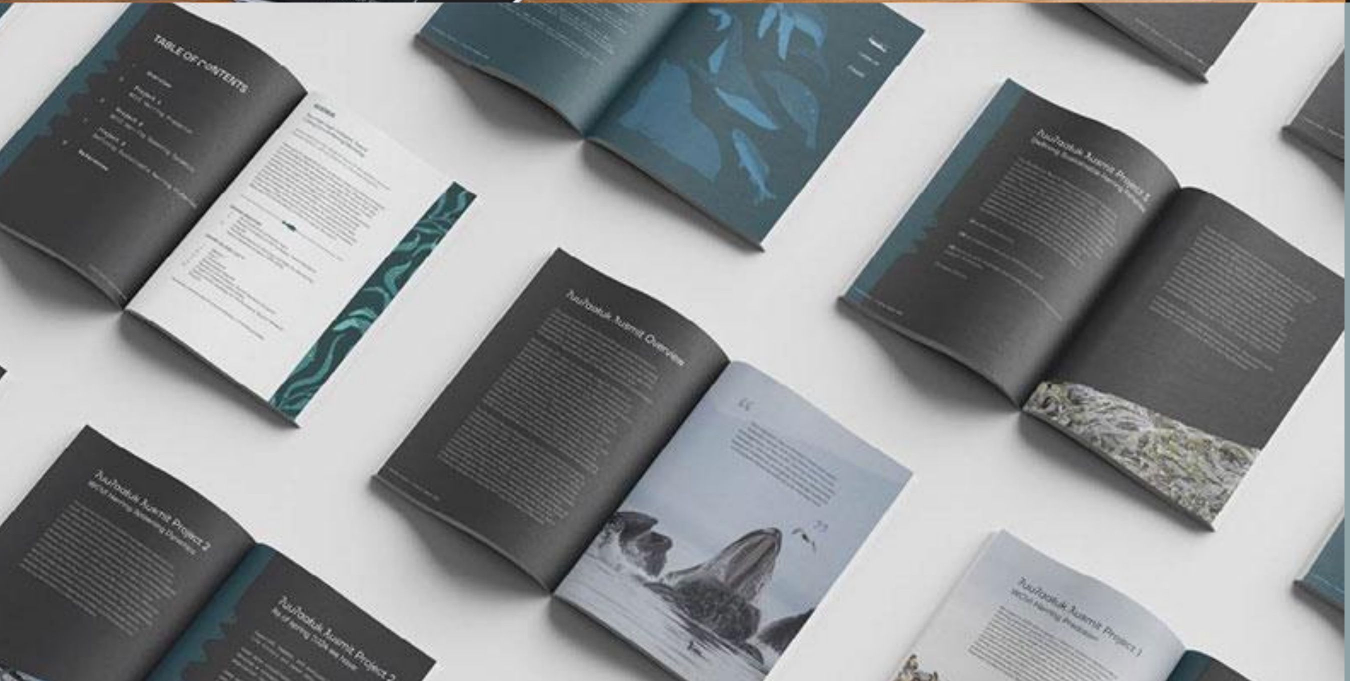
PACIFIC HERRING

Performance Measure	1 STOCK	3 AREA	9 AREA
ECOLOGICAL — Productivity + persistence (LRP)			
ECOLOGICAL — Ecosystem function			
ECONOMIC — Commercial catch			
SOCIAL + CULTURAL — Food, social, ceremonial catch			




SoG OM status and update
PRD OM status and update
WCVI, CC, and HG starting
The ecological context of Pacific Herring: Operating Models
British Columbia
Northeast Pacific Ocean
The MSE Process
Pacific Herring MSE Process
Results and Application for '24–'25
October 2025
Pacific Herring Stock Assessment & MSE
Prepared by the Pacific Herring Science Team


JULY 8 PRESENTATION
COMMUNITY OF PRACTICE
LANDMARK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OBJECTIVE:
How do we incorporate the results into a management process

The ecosystem approach to WCVI Herring management

Meet single species policy objectives, and:

1. Considers a wide range of information at several spatial and seasonal scales and sources **(western science and Indigenous Knowledge);**
2. Expanded set of objectives at **fine scale;**
3. **Impact of predators** on Herring directly included in operating models and projections;
4. Expands our understanding of what **sustainability means.**

Full Spectrum Sustainability

Canadian policy and international agreements require consideration of the ecological, institutional, economic, and socio-cultural aspects of fisheries. These are similar in scope to the UN Sustainable Development Goals.