

INDIGENOUS-LED FINFISH AQUACULTURE TRANSITION FRAMEWORK

PRESENTED BY

—
COALITION OF FIRST NATIONS
FOR FINFISH STEWARDSHIP
—

NOVEMBER 2023

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WILD SALMON
REVITALIZATION

ECONOMIC
RECONCILIATION

INDIGENOUS-LED
BLUE ECONOMY

SOCIAL AND
ECOLOGICAL
WELL-BEING

FOOD SECURITY
AND
AFFORDABILITY

CONFIDENTIAL

Rightsholder First Nations can and will lead the transition of finfish aquaculture in their waters in order to: assert their sovereign decision-making authority; to ensure operations are done responsibly under their guidance; and to rightfully participate in Canada's Blue Economy.

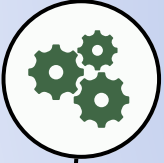
HOW DID WE GET HERE?



1980S
FISH FARMS
INTRODUCED
ACROSS BC



1998
KITASOO XAI'XAIS
SIGNS FIRST FN
AGREEMENT WITH
MARINE HARVEST



1990S/2000S
SECTOR'S
EXPANSION WITH
INT'L COMPANIES



2010-2020
IMPROVED
STANDARDS & FN
RELATIONS; RAPID
MODERNIZATION

2019-2022
40% REDUCTION
OF BC SALMON
FARM SECTOR



2023
100% BC FARMED
SALMON GROWN
IN AGREEMENT
WITH FNS

FALL 2025
TRANSITION
IMPLEMENTATION
PLAN LAUNCHED

NOV 2023

AWAY FROM...

- Traditional "open-net pen" systems across FN territories
- Wild/farmed interaction
- Die-offs from ocean conditions (algae blooms) or sea lice treatment
- Ad-hoc wild salmon support from industry
- Transparency/trust issues
- Limited First Nations oversight
- Limited or no access to infrastructure and connectivity
- Early RAS technology; more time at sea
- Farming in some territories without FN consent (pre-2023)
- Systematic reduction of sector (40% since 2020)
- Unstable investor environment



**RESPONSIBLE
TRANSITION PLAN
2025**

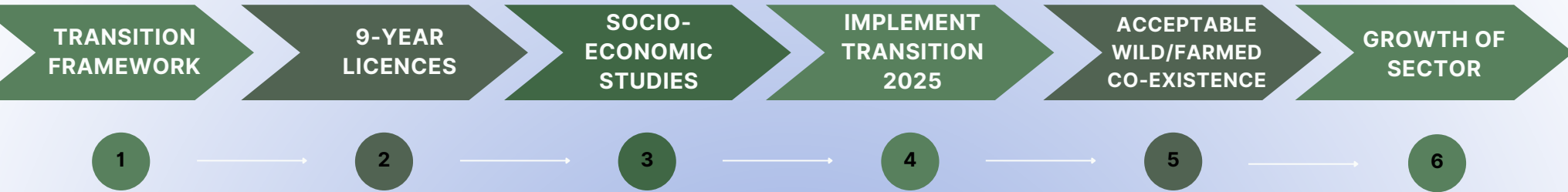
...TOWARDS

- Modern in-ocean barrier technologies; territory specific
- Acceptable farmed/wild coexistence via minimizing and/or progressively eliminating interaction
- Fewer harmful blooms & sea lice
- Prioritizing wild salmon revitalization and habitat
- 100% partnered with First Nations
- Stronger coastal communities
- Data & science sharing
- First Nations' oversight, monitoring, and science (Guardians, TEK)
- Accessible, connected infrastructure
- Multi-trophic opportunities
- Upgraded RAS tech/less time at sea
- Growth of the sector; Canada positioned as global leader
- Stable investor environment

OUTCOMES



PHASED FINFISH AQUACULTURE TRANSITION FRAMEWORK



INDIGENOUS-FOCUSED SECTOR MODERNIZATION OBJECTIVES

WILD SALMON REVITALIZATION

- **Marriage of Traditional Ecological Knowledge (TEK) and western Science data around wild salmon, climate change, ocean conditions**
- Territory-specific science and stewardship capacity-building within Nations
- Habitat compensation
- Territory-specific wild salmon risk assessments
- Sector and government support for Nations' individual wild salmon revitalization goals

TRANSITION FROM TRADITIONAL OPEN NET-PEN AQUACULTURE

- Area-based ocean management implementation
- Long-term license renewal for investor security
- **Rightsholder Nation oversight of Conditions of Licence**
- Modernization of existing net pens in each territory to progressively minimize and/or eliminate farmed/wild salmon interaction
- Improved or installed infrastructure to support new technologies such as electrification

RECONCILIATION & PARTNERSHIPS

- Support of self-determination and decision-making sovereignty
- Increased FN-led oversight, monitoring of farms e.g Guardian programs
- Support of Nation-to-Nation communication
- **Investment in FN-led science and TEK**
- Community-specific socio-economic impact studies for FNs
- Increased vertical integration of FN business opportunities and economic diversification

TRUST & TRANSPARENCY

- Transparent data sharing between DFO, sector, eNGOs, Nations for holistic understanding via new **Indigenous Centre for Aquatic Health Sciences (ICAHS)**
- Capacity for FN-led science & traditional knowledge to gather own data for more trusted results
- Improved relationships between government and **Rightsholder** Nations
- Long-term licensing for stability within communities

SUSTAINABLE GROWTH IN B.C. AQUACULTURE INNOVATION

- **Long-term aquaculture licensing for investment security, growth**
- Experimental licenses for trialling new tech
- FN-approved technology, farm siting, increases in biomass, COL.
- Upgraded infrastructure to support new technologies
- Support FN research of new tech, feasibility studies
- DFO and Province to streamline regulatory approval process for coastal Nations



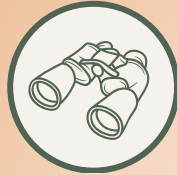
OBJECTIVE #1

WILD SALMON REVITALIZATION



TRADITIONAL KNOWLEDGE & WESTERN SCIENCE

- Marriage of Traditional Ecological Knowledge (TEK) and Western science in conducting research and collecting data in ocean environment and wild salmon habitat
- Expansion of BC CAHS to new **iCAHS, Indigenous Centre for Aquatic Health Science** on Laichkwiltach territory in Campbell River, where TEK and western Science data will live and be accessible to all



STEWARDSHIP

- Supporting the growth of Indigenous stewardship programs like Guardian Watchmen so that First Nations are the eyes and ears of their lands, waters, and elements
- Territory-specific wild salmon and habitat risk assessments led by the Nation
- FN oversight of Conditions of Licence
- More Indigenous participation in committees, working groups, and boards regarding FN oversight, monitoring, and stewardship



CAPACITY BUILDING

- Financial support to Nations to expand their in-community training of stewardship and/or technical programs to extend Rightsholders Nations monitoring abilities
- Funds to iCAHS to enhance specific science, sampling, and research training for Nations in their territories
- Expansion of iCAHS to provide Nations with lab space and training space for Guardians, as well as a space for Nation-to-Nation dialogue



ENVIRONMENTAL OFFSETS

- Financial support, business contracts, and employment opportunities for Nations towards wild salmon habitat restoration projects (watersheds, freshwater, ocean) and enhancement projects in their territories



SUPPORT

- Financial support from federal and provincial governments directly to Nations to fund iCAHS expansion, training, habitat restoration, and wild salmon revitalization (hatcheries) rather than to non-profits like Pacific Salmon Foundation; stop Nations from competing with each other for funds
- Salmon farming companies direct and in-direct support to Nation partners for territory-specific projects as needed



OBJECTIVE #2

TRANSITION FROM TRADITIONAL OPEN-NET PEN AQUACULTURE TO...



INDIGENOUS OVERSIGHT

- Territory-based Nation's oversight of farming operations with Guardians and stewardship technicians
- Rightsholder Nation approved Conditions of Licence/standards
- Indigenous-led science with traditional knowledge to monitor sea lice counts, conduct water samples, oceanic conditions in partnership with iCAHS
- Wild salmon risk assessments to minimize unacceptable interaction

LONG-TERM LICENSING

- Minimum 9-year licence reissuance in Q1 2024 (and thereafter) with intermittent options for Nations to review conditions in order to:
 1. support investor confidence and stability in the sector
 2. encourage investing in new and emerging technologies as well as infrastructure
 3. time for Rightsholder Nations to conduct research and trials on new technologies in their territories
- Streamline/fast track approval process

MODERNIZATION

- Nations conduct research with partners to develop or install new barrier technologies suitable for their territory, infrastructure, and community goals
- Modern pen technologies being explored include: submerged cage systems, semi-closed (dropped tarps, bubble curtains), off-shore systems, land-based and fully closed in-ocean systems
- Supporting new tech like AI, eDNA, mitigation, treatment

IMPROVED INFRASTRUCTURE

- Provincial and federal investment in community infrastructure such as: hydro-power, cellular service, internet connectivity, improved roads,
- Ocean-front industrial-zoned properties
- **All community members and businesses benefit from improved infrastructure in remote areas**

AREA OR TERRITORY-BASED MANAGEMENT

- Co-management and area, region, or territory-based management done in collaboration with Rightsholder Nations to:
 1. reduce potential interaction between farmed and wild
 2. improve fish welfare and husbandry,
 3. properly site farms,
 4. improve biosecurity
 5. Ecosystem-based management and sensitivity to salmon migration routes and timing of migration



OBJECTIVE #3

RECONCILIATION & PARTNERSHIPS



SOVEREIGNTY & SELF-DETERMINATION

- First Nations have the **right to choose if, when, and how** finfish aquaculture operates in their territories
- Decision-making authority regarding marine management
- Authority to remove or reduce farms if Nation partner considers trust or conditions breached
- Indigenous-led oversight and science with traditional knowledge to monitor their own territories and make the most informed decisions with strengthened stewardship



ECONOMIC RECONCILIATION

- Nations have the right to participate in Canada's economy as employees, partners, contractors, and business owners in the sector
- Own-source revenue from the sector gives Nations economic independence from government assistance
- Revenue helps Nations build capacity, housing, new social programs, wild salmon revitalization projects, Guardian programs, and wellness centres



SOCIO-ECONOMIC IMPACT STUDIES

- Social and economic impact analyses of each Rightsholder community will inform government and those Nations how interwoven the sector is with communities
- Social impacts of a damaging transition to be measured such as suicides, addiction, homelessness linked to lack of meaningful employment, food bank reliance, and loss of revenue-supported social programs
- Poverty vs. progress



ECONOMIC DIVERSIFICATION

- Stability and growth of sector will lead to increased vertical integration of First Nations business opportunities
- Investing in FN-led businesses and improving/adding infrastructure to draw investment into communities and help them shift towards **multiple revenue streams and markets** to encourage positive economic growth and development
- Supports economic independence



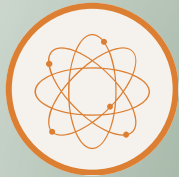
STRONGER PARTNERSHIPS

- Agreements between companies and Nations vary. Key pillars to work towards are:
 1. FNs as shareholders/equity owners
 2. FNs own tenures and/or licences
 3. FN partners on company boards
 4. Fairer compensation
 5. First right of refusal as contractors
 6. Percentage of Indigenous workers
 7. Guardians conduct sampling
 8. FNs own data of their territory



OBJECTIVE #4

TRUST & TRANSPARENCY



INDIGENOUS CENTRE FOR AQUATIC HEALTH SCIENCES (ICAHS)

- A Campbell River-based Indigenous-led science facility partnered with a globally accredited lab (BC CAHS) to be the transparent, inclusive body to lead the science review and assessment process of both wild and farmed salmon
- FN-led oversight and science with traditional knowledge to collect, assess, and review local data to make the most informed decisions
- iCAHS as data hub and training hub

REPORTING & INFORMATION SHARING

- FN-determined and partnered science review and assessment process per each Nation's objectives led by traditional knowledge and standards.
- public reporting and data sharing to encourage transparency, trust, and decision-making (ICAHS to house data of participating Nations)
- Direct Nation-to-Nation information sharing and collaboration for best practices and decision-making

RELATIONSHIP BUILDING

- Improved involvement of FNs in regulatory metrics and monitoring decisions in their territories will strengthen relationships with partners and DFO; will improve trust in the process and encourage transparency
- Reward strong partnerships
- Respect FN title and decision-making rights in territories
- Regular bi-lateral meetings between DFO & Rightsholder FNs to improve trust and communication

STABILITY

- Long-term licensing regimes will build **investor trust and community trust** in the safety of their economic and social futures
- Stability encourages FNs to pursue careers and training in sector in their home territories
- stability and growth of sector will lead to increased vertical integration of First Nations business opportunities
- encourages economic diversification
- Poverty vs. progress

NATION-TO-NATION DIALOGUE

- Further Transition Plan engagement to include Nation-to-Nation dialogue of all perspectives rather than siloed conversations ("us vs. them", Tier 1, Tier 2)
- Open communication, sharing best practices & data, wild salmon stewardship, constructive dialogue to build relationships, trust, and understanding, fight climate change and wild stock depletion while addressing fair concerns of others.



OBJECTIVE #5

SUSTAINABLE GROWTH IN BC AQUACULTURE INNOVATION



LICENSING & METRICS

- Long-term licences to encourage investor confidence in sector and economic stability within communities
- Working with BC government, streamline and fast-track approval processes when asked for by FNs
- Mutually agreed-upon, realistic metrics
- “Traffic light” or similar approach to regulatory metrics & licensing built with Rightsholder FNs



RESEARCH & DEVELOPMENT

- 9-year licences granted in Q1 2024 to allow FNs the time to properly research new technology that may or may not be suitable for their territories for a Transition Plan by 2025
- Experimental licences for trialling new technology and incentives for companies for R&D (similar to Norway)
- Funding for FNs to support research of new tech and feasibility studies in their territories



TECHNOLOGY & INNOVATION

- FN-approved, realistic technology suitable to territory’s geography, needs, and infrastructure to progressively minimize or eliminate interaction between wild and farmed
- Upgraded or installed infrastructure to support innovation
- Multi-trophic trials
- Restorative aquaculture
- Further adoption of AI technology to meet objectives of data sharing, transparency, and decision-making to reduce impacts



FEASIBLE LAND-BASED SALMON FARMING

- Not all FN territories can host land-based fish farms therefore wish to innovate in-ocean technology. Some Nations have done feasibility studies and results show they cannot host land-based; others are interested and have the land and potential infrastructure
- Improve RAS tech in current hatcheries to grow salmon longer on land, post-smolt; time acts as ‘time’ barrier between wild and farmed; less time at sea



TIME

- Once Transition Plan is implemented in 2025, to grow sector, time is needed to:
 1. Re-gain investor and customer confidence in market
 2. Conduct R&D and feasibility studies for suitable tech
 3. Plan and build new iCAHS centre of excellence
 4. Open Nation-to-Nation data sharing
 5. Develop capacity and training for FN-led science, oversight, Guardian programs
 6. Re-gain public trust via transparency & FN-led science

WILD SALMON MONITORING & REVITALIZATION

- Enhance FN-led wild salmon monitoring, TEK, and science
- Improve understanding of potential wild/farmed interactions
- Projects to revitalize wild salmon & habitat

SOCIO-ECONOMIC IMPACT STUDIES

Gov. of Canada to conduct social & economic analyses in each community to better understand relationship between sector, economy, and social health

FEASIBILITY STUDIES

For Rightsholder Nations to determine what is and is not possible in their waters/territories; better informed decision-making on new technologies and trials

INDIGENOUS FARM MONITORING

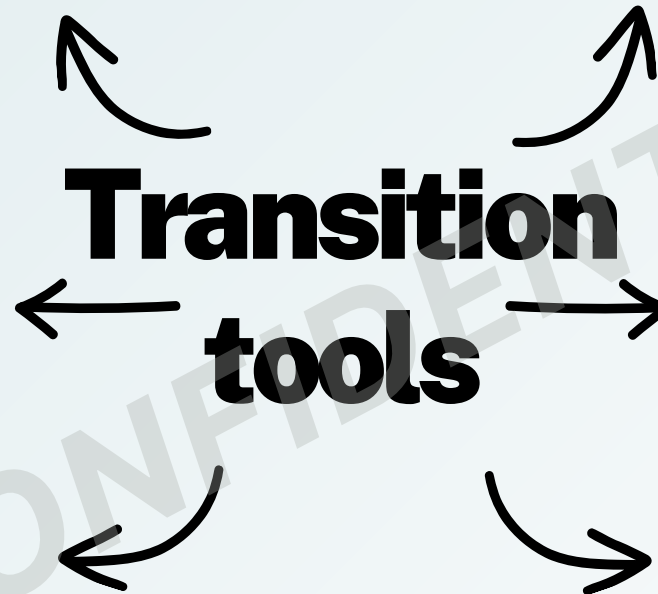
Indigenous Guardians or stewardship/fisheries technicians to monitor & audit farm activities and conduct sampling for transparency, trust, compliance & reporting data

INDIGENOUS CENTRE FOR AQUATIC HEALTH SCIENCES

iCAHS as a science, data, and training hub for FNs, using western Science and traditional knowledge to have more holistic picture of the ocean, farms, and wild salmon

HUMAN RESOURCES

First Nations and DFO will need additional staff and capacity to carry out this Transition Plan in each region/territory over time.



FINFISH AQUACULTURE MODERNIZATION FLOWCHART

AWAY FROM...

- Traditional “open net” pen systems
- Wild/farmed interaction
- Transparency/trust issues
- Minimal First Nations oversight
- Early RAS technology
- Farming in territories without FN consent
- Heavy sea lice treatments
- 40% reduction in the sector

ENGAGEMENT WITH FIRST NATIONS

- Monetary and/or in-kind support for Nations’ individual wild salmon revitalization goals
- Shared data to understand wild salmon, climate change

...TOWARDS

- Modern in-ocean barrier technologies
- Progressive minimization or elimination of farmed/wild interaction
- 100% Rightsholder First Nations approved
- Transparent data sharing
- First Nations oversight and science (trust)
- Sustainable community economic health & stability
- Multi-trophic opportunities
- Improved RAS tech/more time on land
- Growth of the sector; Canada as global leaders

OUTCOMES

- Responsible Transition Plan in 2025
- Economic reconciliation
- FN-led Blue Economy
- Social and ecosystem health
- Improved food security and food affordability
- Good, middle-class jobs
- FN-led ocean management
- Canada becomes global leader in aquaculture
- Improved trust & transparency in operations

- Modernization of existing net pens in each territory.
- Improved or installed infrastructure to support new technologies

- Self-determination and decision-making sovereignty for farming
- FN-led oversight, monitoring
- Economic reconciliation
- Healthy communities
- Increased capacity
- Nation-to-Nation communication

- Improved relationships between government and Nations
- FN-led science, traditional knowledge = trusted results
- Transparent data sharing

- Licences approved long term for investment security, growth
- FN-approved TECH, siting, increases in MAB,
- Socio-economic benefits from sector and supporting infrastructure

Wild salmon revitalization

Transition from traditional open net-pen aquaculture

Reconciliation & Partnerships

Trust & Transparency

Growth in BC sustainable aquaculture innovation

OBJECTIVES

TIMELINE

2020-2022
Brought in initiative and Discovery Islands closures

June 2022
Transition Plan engagement begins

Early Spring 2024
Transition Framework announced

Spring 2024
Licences re-issued for 9 years

Spring 2025
Socio-economic impact analyses completed

Fall/winter 2025
Transition Plan implementation

Progressive elimination of unacceptable interaction between wild and farmed salmon achieved

MAP OF CURRENT FARM LICENCES AND HATCHERIES

