# Framework for Aquaculture Risk Management

## Shellfish Aquaculture Management Advisory Committee

April 30, 2019

# Framework for Aquaculture Risk Management

## Outline

- Drivers for the development of a risk management framework for aquaculture
- Overview of framework
- Application of the Precautionary Approach
- What will change within DFO?
- Next steps
  - Refining and finalizing
  - Implementation activities/policies

# Why develop a National Framework for Aquaculture Risk Management?

- One of four initiatives that the Minister recently announced that will strengthen how the department manages aquaculture in a more sustainable fashion
- Commissioner of Environment and Sustainable Development (CESD) Audit criticised DFO for not clearly articulating how “precautionary approach” is applied to managing aquaculture
- Independent Expert Panel on Aquaculture recommended the development of a risk management framework
- While DFO has a formal and transparent science advisory process for informing fisheries management decisions, a similar framework detailing all steps involved in managing aquaculture risks has not been clearly described.

# Development Process

- Process:
  - Modeled structure of framework after the Sustainable Fisheries Framework
  - Guidance from the Privy Council Office and Departmental experience in defining the application of precautionary approach to fisheries management
- Documents:
  - **Framework for Aquaculture Management (FARM)**
  - Application of the Precautionary Approach in the FARM
  - Aquaculture Pathways of Effects Tools
  - Application of the Aquaculture Pathways of Effects

# Framework for Aquaculture Management

**Ecosystem Objectives**

- Legislation, intergovernmental and international agreements
- Informed by Indigenous Knowledge, societal values, local and ecological knowledge
- *Publication of policies defining the ecosystem objectives*

**Identification of Issue**

- Specific activity, associated aquaculture related stressors, predicted possible effects
- Feedback from monitoring, evaluation activities and research
- *Publication of polices, scientific results, research priorities*

**Science Advice & Risk Assessments**

- Formal science advice (CSAS) to inform policy development, siting applications, introductions and transfers, etc.
- Risk assessments of aquaculture stressors
- *Publication of peer-reviewed science advice*

**Risk Management**

- Mitigation options identified, selection of risk management strategy (precaution where warranted)
- *Publication of operational polices, regulatory tools, management decisions*

**Monitoring and Evaluation**

- Compliance and Enforcement activities
- Surveys, Audits and Regulatory Reporting
- *Publication of regulatory reporting information*

# Precautionary Approach

- The Government of Canada articulates its commitment to the application of the Precautionary Approach as: "…recognizes that the absence of full scientific certainty shall not be used as a reason for postponing decisions where there is a risk of serious or irreversible harm."
- The concept of the precautionary approach, as stipulated in the RIO Declaration (1992), was aimed at large-scale threats, when the consequences are serious or irreversible.
- In addition to applying the PA related to large-scale threats, such as climate change, DFO will also apply the PA widely as part of the FARM to aquaculture activities that may not potentially result in large-scale or permanent environmental impacts.
- The key to the type of precautionary measures to take when faced with a decision, is:
  - The need to assess the risk,
  - Understand the extent of the effect of the activity on fish and fish habitat, and
  - The scientific uncertainties associated with the assessment of these effects.

# Precautionary Approach *(continued)*

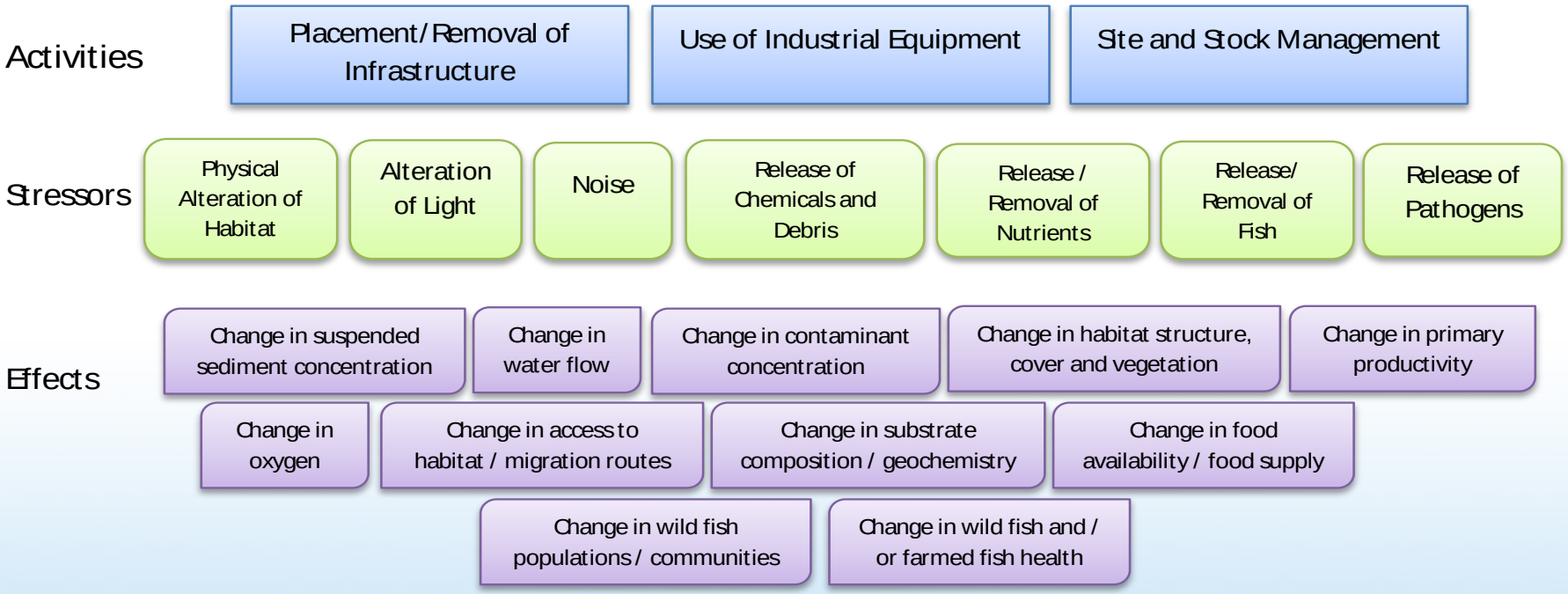
- Threshold for unacceptable harm: any impact from an aquaculture activity that has the potential to cause population-level detrimental effects
- Scale of the effects is dependent on the proposed activity and the receiving environment
- Analogous to fishery harvest control rules and avoiding the limit reference point for fisheries
- Objective is that aquaculture activities are managed in a manner that avoids the lower threshold – through risk management, mitigation and precaution

# Effects to Manage: Issue Identification

- The types of effects from aquaculture activities are:
  - well characterized
  - represented through a validated Pathways of Effects (PoE) model
- Risks associated with these effects vary with the scale and type of activity and the environment in which the activity will take place
- The supporting document: *"Overview of the Aquaculture Pathways of Effects Tool for Assessing Aquaculture Impacts"* describes these relationships and the role they play in the Departmental approach to risk management

# Effects to Manage: Issue Identification

## Aquaculture Pathways of Effects Model



# Application: Aquaculture Decision-making

- The "*Application of the Aquaculture Pathways of Effects in Aquaculture Activities Decisions*" document further identifies significant decision points at which potential risks are assessed and managed (siting, introductions and transfers, operational monitoring and reporting)
- This document also provides some examples of scientific information that may be used to evaluate potential effects and management measures that may be used to limit those effects

# What Will Change?

- The FARM will invoke the following changes in how aquaculture input and decisions are made:
  - the development and publication of policies that outline specific conservation objectives;
  - more consistent use of formal, published science advice to support decisions;
  - specific consideration of the precautionary approach when there is high scientific uncertainty; and
  - a more consistent, robust and transparent decision-making process which includes: published decisions; articulation of how science was considered; criteria for decisions.
- ***These changes are reflective of our legislative mandate and obligations to protect and conserve fish and fish habitat, and are aligned with our government's commitment to open data, transparency and science-based decisions.***

# Future Developments

- Integration of Indigenous Knowledge (IK) into FARM processes
  - Dependent on the interdepartmental IK policy development and FPP policies and best practices
- Marine finfish, freshwater finfish and shellfish aquaculture implementation policies
  - Working groups with representation across regions and sectors to develop policies and processes
  - Defining processes for integrating residual risks from aquaculture into fisheries decision-making
- National science-based standard development (with Provinces and Territories)

# Some questions to guide review

1. Are all the key elements in the risk management framework included?
2. Are the elements clearly described?
3. What aspects in the draft policy framework will be difficult or challenging to implement?

   Are there recommendations on changes that could be made to avoid or diminish these difficulties?
4. Is the characterization of uncertainty and the precautionary approach accurate and clear?
5. What processes should be used for incorporating residual risks to wild fish populations associated with aquaculture activities into stock assessments, etc?

# Next Steps

- Refining the Framework:
  - On-going engagement/consultations with First Nations
  - Posting on DFO website for public comment (April 2019)
- Finalizing the Framework by integration of comments and suggestions
- Development of policies to support implementation:
  - Especially the idea of co-developing a FARM piece on Indigenous knowledge