

Fish Passage Interpretation Bulletin – How Do We Get There From Here?

**CEA DFO Workshop Niagara
November 18, 2004**

Overview

- Before we get into Fish Passage – let's provide some overview comments
- Agree on the concepts within the decision pathway and discuss how certain policy judgement criteria would be incorporated
- Determine how each of the three topic areas fit into the Risk Matrix (starting with Fish Passage)

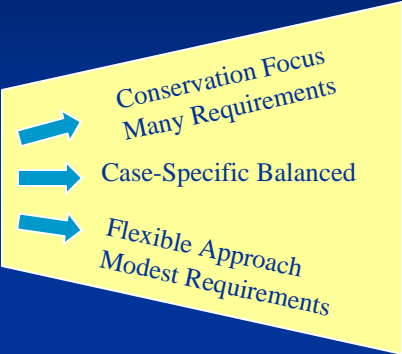
What Policy Judgements Will Be Considered in the Bulletins ?

Fisheries Act

Present Diversity of Application

Interpretation Bulletin to Introduce Policy Judgement

Provides literal and direct requirements with no policy interpretation



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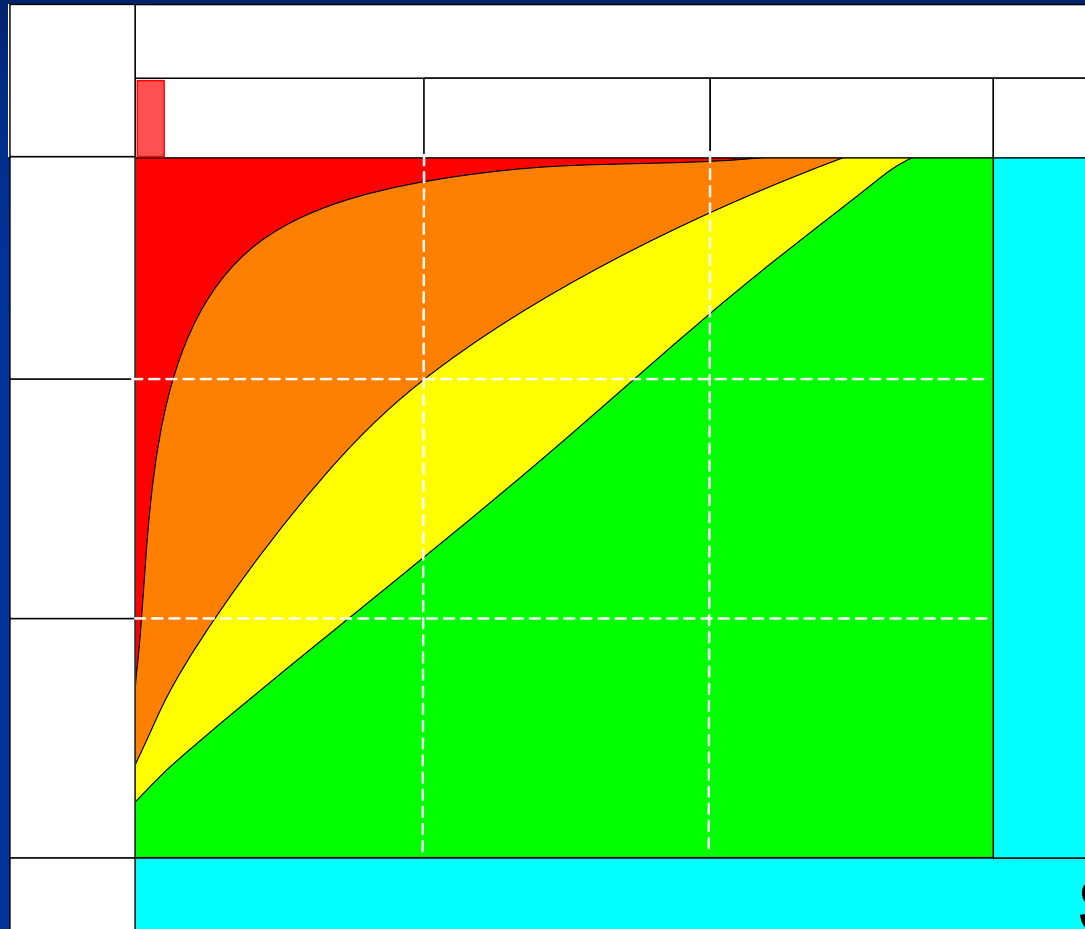
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We have people in CEA & DFO pushing positions in all three of the above directions.

This is not leading to a usable, improved approach.

- Consideration of Physical Setting & Limitations, Variations,
- More Case Specific Treatment of Species, Migration Extent, etc.
- Macro Outlook, especially for Larger Projects
- Consider Habitat Transformation & Compensation
- Consider scalability, gradient of response, appropriateness of action
- Separate downstream migration from incidental entrainment effects
- Take the Long View, not penalizing short term temporary effects
- Consider tradeoffs, multi-resource view and balanced decision
- Use all tools available to risk assess, mitigate, and match actions to real risk. Stretch the definition & acceptability of creative mitigation
- Consider Adaptive Management to reduce overuse of precaution
- Consider Fisheries Objectives, more than simple protection for all

Risk Matrix



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Scale of
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Definition of Risk Matrix Axes

- **Severity of impact:** Where an effect cannot be avoided through mitigation/redesign (or where mitigation is not always effective) we will apply criteria to determine if the (potential) impact is Low, Medium or High based upon factors such as size, intensity, duration.
- **Sensitivity of habitat.** Aquatic habitats vary in their sensitivity. Some habitats are more resilient and activities in these areas may be considered lower risk.

What are the Biological Factors to Consider When Determining Whether Fish Passage is Needed?

- Habitat Quality and Quantity
- Habitat Vulnerability
- Species Dependence on Habitat and Diversity
- Species Relative Abundance
- Value of Species (Fishery objectives, Species at Risk)
- Impact Severity – Lost Productive Capacity
- Impact Duration, Frequency or Timing
- Impact Reversability

How Do Hydro Facilities Fit In to the Risk Matrix?

Habitat = High Impact = High ✓ Fish Passage	Habitat = Med Impact = High ✓ Fish Passage	Habitat = Low Impact = High ~ Fish Passage
Habitat = High Impact = Med ✓ Fish Passage	Habitat = Med Impact = Med ~ Fish Passage	Habitat = Low Impact = Med No Fish Passage
Habitat = High Impact = Low ~ Fish Passage	Habitat = Med Impact = Low ~ Fish Passage	Habitat = Low Impact = Low No Fish Passage

Group 1 Questions: Sensitivity of Fish and Fish Habitat

- Risk Matrix and Fish Passage
 - How can the risk matrix be used to determine whether fish passage is required?
 - What factors need to be considered when determining Sensitivity of Habitat?
 - Describe your assumptions around high, med, low sensitivity?

Group 2 Questions: Scale of Negative Effects

- Risk Matrix and Fish Passage
 - How can the risk matrix be used to determine whether fish passage is required?
 - What factors need to be considered when determining the Scale of Negative Effects?
 - Describe your assumptions around high, med, low impact?

Group 3: Decision Pathway and Road Map

- What is the process of considering policy judgement factors when making project decisions?
- How might this be applied to Fish Passage for new facilities?

Group 1 Cheat Sheet: Considerations to Determine Sensitivity of Habitat

- Are these species migrating for reproductive purposes? Feeding or other habitat use purposes?
- Do the current fishery management objectives (where they exist), identify these species (this is the key issue for existing facilities)
- Does this species migrate within the area affected by the dam?
- How resilient are these species to the loss of access to the habitat blocked by the dam?
- Habitat Quality: How productive is the potentially inaccessible habitat for that species
- Habitat dependence by species: To what extent is the species group dependent on this potentially inaccessible habitat?

Group 2 Cheat Sheet: Considerations to Determine Scale of Negative Effects

- Is there an existing natural barrier at that site (e.g. rapids or waterfalls)
- What percentage of the population will be blocked from habitat above the barrier? This will depend on:
 - Duration/Season that fish passage is blocked
 - Destruction of fish (through turbines) as a percentage of the species population?
 - Success rate of mitigation measures to pass fish.
- Will the percentage of the population that can still migrate be sufficient to maintain a viable population?