### The Post-Decision Phase: Monitoring, Follow-Up and Adaptive Management



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## Overview

- Introduction
- Monitoring
- Follow-up Programs
- Adaptive Management
- Questions?



## Introduction

- Much was said during the IAA's development about increasing the quality, transparency, and accessibility of monitoring and follow-up results, as well as addressing the misuse of adaptive management;
  - See esp. Expert Panel Review on Federal Environmental Assessment ("Building Common Ground")
- IAA is only marginally distinguishable from CEAA and CEAA, 2012 with respect to most of these issues.
  - One exception? Adaptative management (plans), re-introduced following deletion from CEAA, 2012.



### Monitoring

 Largely unchanged; no provisions setting out basic requirements or standards for monitoring (e.g. sampling frequency and methodology)

 "The Proponent shall monitor mortality of Little Brown Myotis (*Myotis lucifugus*) and Northern Myotis (*Myotis septentrionalis*) and their usage at buffer-zones and of roosting structures, to determine the effectiveness of the mitigation measures during construction and operation"
 (condition found in Site C Clean Energy Project, Woodfibre LNG Project, and the

(condition found in Site C Clean Energy Project, Woodfibre LNG Project, and the Kemess Underground Project)

- New registry provision:
  - Subpara 105(2): Agency must post to the registry "(d) any scientific information that the Agency receives from a proponent or federal authority, or a summary of the scientific information and an indication of how that information may be obtained"
    - "scientific information" is not defined in the Act, but monitoring data presumably (hopefully) falls within this definition.



## **Follow-Up**

### Also largely unchanged:

- programs for "verifying the accuracy of the impact assessment of a designated project and determining the effectiveness of any mitigation measures."
- New registry requirements:
  - CEAA, 2012: records related to follow-up programs were restricted to the Agency's internal "project files" (s 106)
  - IAA: registry must at least include "a description of the results of the follow-up program that is implemented with respect to that designated project or a summary of the results and an indication of how such a description may be obtained" (s 105).



# **Adaptive Management (AM)**

Define the problem: management objectives, indicators of success, options for action, assumptions, key uncertainties, alternative hypotheses

> Adaptive Management Cycle

Monitor implementation (any deviations from the design?),

and effectiveness (were the objectives achieved?)

Revise uncertainties and hypotheses and repeat; share what has been learned

Evaluate the results: which actions were most effective, and which hypotheses to accept / reject? Design actions to test hypotheses; predict outcomes based on current knowledge

Implement the actions as designed

Adaptive management is not "fail safe" – it is "safe-fail"

- Does not prevent mistakes nor guarantees
  positive environmental outcomes
- Experiments can and do fail, effects may not be reversible

Temporal, spatial and resource limitations

# Must be rigorously implemented

• Failure to properly implement AM cycle unravels the whole thing



### Adaptive Management (AM) cont'd

- CEAA: cursory, undefined reference to AM that reinforced its association to follow-up programs:
  - "The results of follow-up programs may be used for implementing adaptive management measures or for improving the quality of future environmental assessments.
- CEAA, 2012: No reference
- IAA:
  - 64(4): "The conditions referred to in subsections (1) and (2) must include ... (b) the implementation of a follow-up program and, if the Minister considers it appropriate, an adaptive management plan"
  - Also relevant:
    - New authority to amend decision statements (ss 68 and 69)
    - Duty of scientific integrity (subs 6(2)).



### Adaptive Management (AM) cont'd

- What's in a "plan"?
  - "a detailed formulation of a program of action" or "an orderly arrangement of parts of an overall design or objective" (Merriam Webster online dictionary)

#### Best practice:

- AM cycle should span all phases: planning, assessment, and post-decision
- What considerations should inform whether AM is "appropriate"?
  - What are the risks associated with failure? Recall AM is not fail-safe does not guarantee positive outcomes
  - Temporal, spatial and resource considerations, *i.e.* is the AM plan capable of generating useful learning?



# **Questions?**

# Thank you.

For more on the post-decision phase, see Martin Olszynski, "Monitoring, Follow-Up, Adaptive Management, and Compliance in the Post-Decision Phase" in M. Doelle and J. Sinclair, eds, *The New IAA: An Assessment and Critique* (2021).