



Summary of Raincoast's review of Enbridge's ESA

Our review focused on the approach and rationale for the Enbridge Northern Gateway project ESA (Environmental and Socio-economic Assessment) concerning biophysical impacts. We used commonly accepted scientific criteria and contemporary standards to evaluate the efficacy of Enbridge's ESA as it relates to terrestrial wildlife, marine mammals, marine birds, salmon, Pacific herring, eulachon, natural hazards, and climate change. We focused on the project and associated cumulative environmental effects of the proposed pipeline and infrastructure construction, operation, and maintenance; the impacts associated with marine transport of petroleum products by tanker; and analyses of risk associated with the proposed project. Our primary goals were to identify strengths and weaknesses of the ESA.

- We evaluated the strength of inference in terms of replication, whether exclusions of data were properly disclosed and discussed, adequacy of control or comparison groups and appropriateness of the analysis.
- We assessed whether the evidence supported particular conclusions/ recommendations, or which of several competing conclusions was best supported by the evidence.

Our guiding principles

Defensible conclusions regarding environmental effects of industrial developments are important because they influence critical choices on land development and mitigation, where the "best available science" should be the standard. Sustainability assessments and policies must be comprehensive and account for the direct and indirect effects at all relevant spatiotemporal scales. Accordingly, a comprehensive environmental review should consider multiple spatial and temporal scales, multiple trophic levels, and multiple levels of ecological organization (e.g. individuals, groups, populations, communities). It should also garner sufficient knowledge of ecosystem components, structures, and processes to understand the likely consequences of human actions as they relate to:

- Maintaining viable populations of all native species in natural patterns of abundance and distribution.
- Reducing the risk of irreversible change to natural assemblages of species and ecosystem processes;
- Maintaining ecological and evolutionary processes, such as natural disturbance regimes, hydrological processes, nutrient cycles, and biotic interactions.
- Obtaining and maintaining long-term socioeconomic benefits without compromising the ecosystem

OVERALL, WHAT WERE RAINCOAST'S FINDINGS?

While conducting environmental assessments in mountainous and marine environments is inherently difficult, we present evidence that the Enbridge Northern Gateway ESA fails to reliably provide the information necessary to understand and predict the environmental impacts and implications of the proposed development. **Critical aspects of the assessment are based upon a paucity of information, as well as questionable assumptions, methods, and analyses. Consequently, the results, conclusions, and recommendations are fraught with an untenable degree of uncertainty and not scientifically supported either by the information presented or by the significantly broader scientific literature.**

The resulting inadequate and inaccurate assessment of the current baseline and project impacts is exacerbated by the failure of the ESA to assess known and projected climate change and variability. In addition, cumulative impacts from associated development pressures in the project area are conducted using flawed assumptions and methodology that do not follow current Canadian Government guidance let alone best practice.

In other words, the ESA suffers from critical flaws that undermine its purpose and credibility as a basis for decision-making.