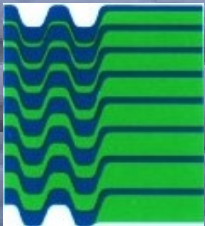


*Climate Change and
Canada's North*

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Background

1. Globally, incorporating climate change is done by documenting GHG emissions and effects of the environment on the project
2. Many jurisdictions began by developing vulnerability assessments separate from EIA
3. In 2002, CEF helped a Nova Scotia team of EIA practitioners develop a guide for adaptation that took a more holistic approach

Background to the North

1. The effects of climate change in the north is greater than in most parts of the globe
2. Canada's North is a new frontierland awaiting development
3. Sovereignty claims in the North require Canada to lead in environmental management



Issues Covered

- Law of the Sea and Sovereignty
- Northern Development Strategy
- Northern Climate Change
- Environmental Management in the North
- Public Review of Offshore Drilling and the *Baffinland* project
- Barriers to consideration of Climate Change
- Next Steps

Law of the Sea

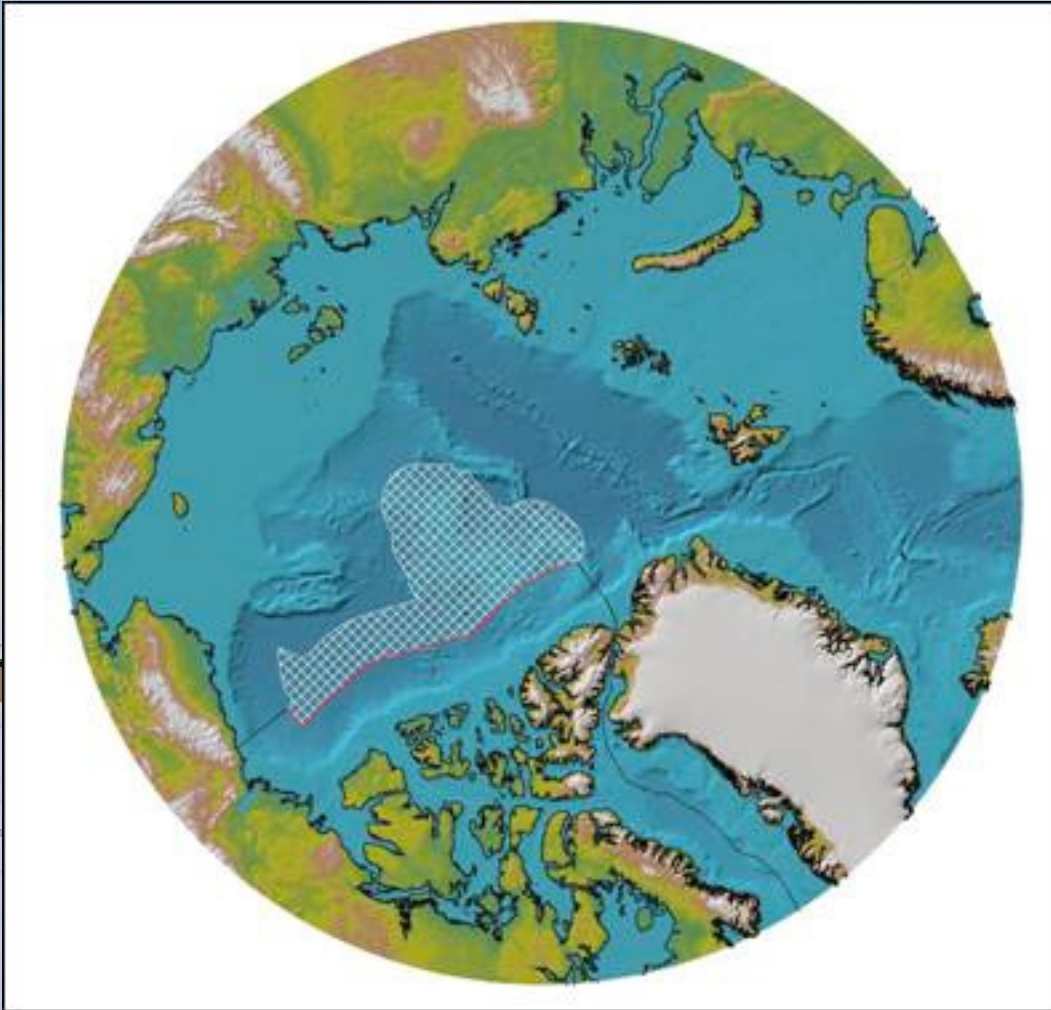
- Canada claims territorial rights to the entire Northwest Passage as internal Canadian territory
- Article 234 of the Law of the Sea provides Canada with 'exception' status for its Arctic waters
- Coastal states could adopt regulations to safeguard waters considered ice-covered for most of the year

Law of the Sea

- Sea ice reductions are affecting jurisdiction provide by Article 234
- Arctic Nations who signed onto the UN Law of the Sea Treaty have a 10 year window to make continental shelf claims to 350 nautical miles

Canada has until November, 2013 to provide geological data to the UN Commission

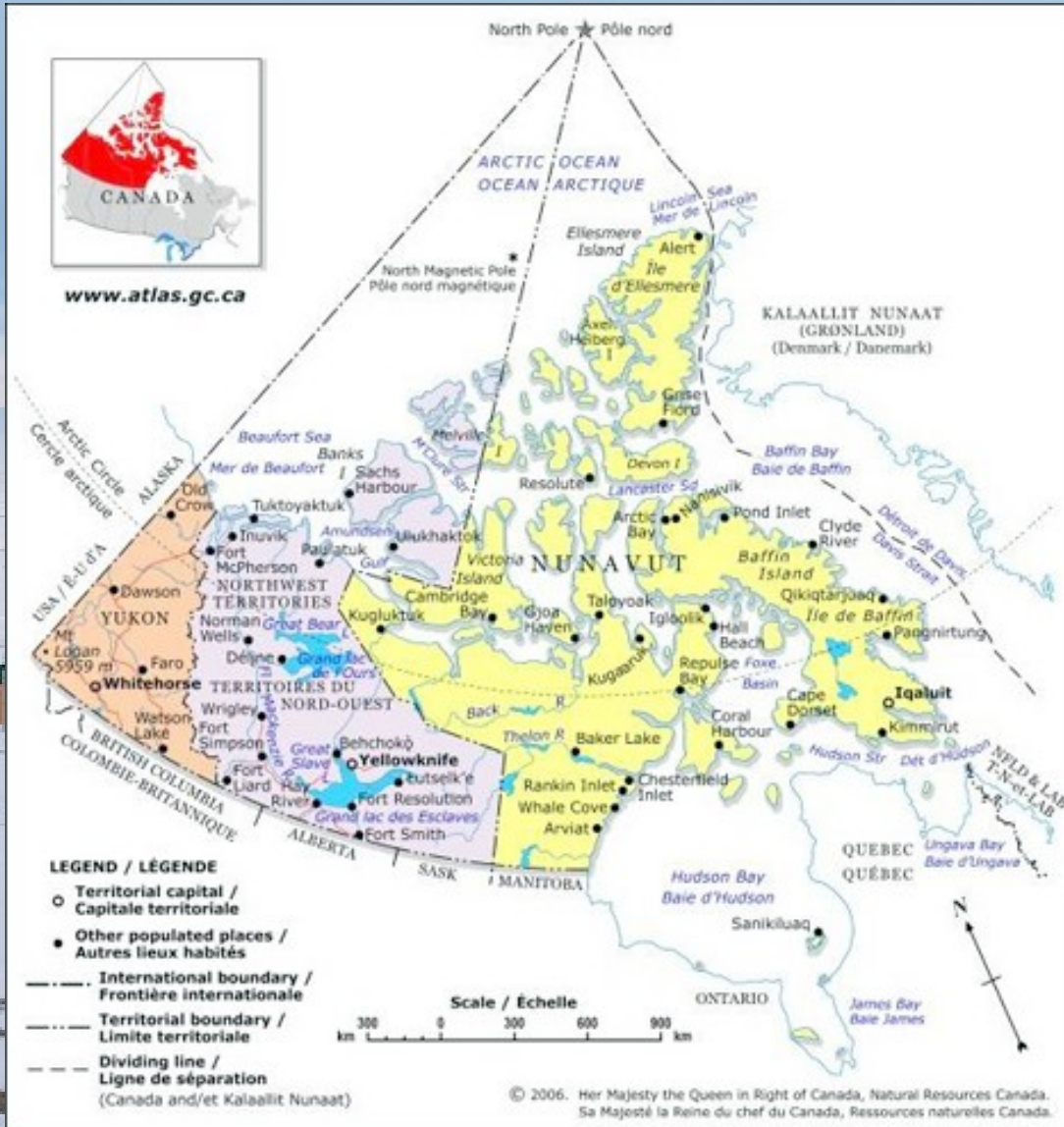
Law of the Sea



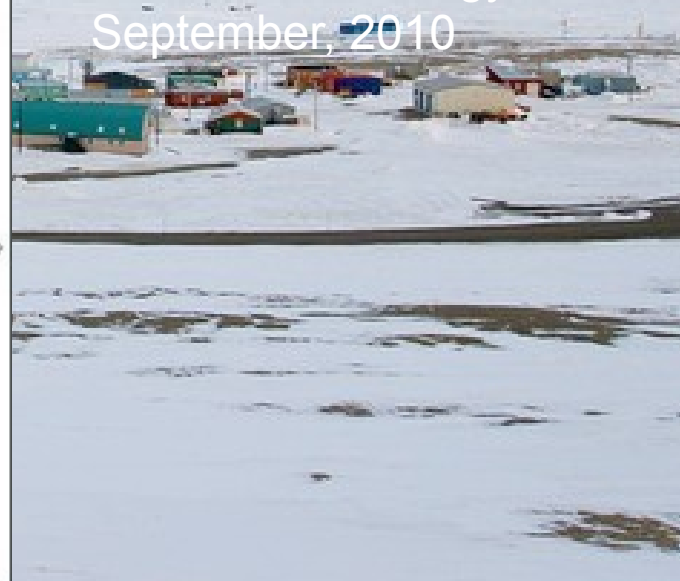
Extended Coast Claim Area



Northern Development Strategy



Indian and Northern Affairs Canada published a Northern Strategy in September, 2010



Northern Development Strategy

- The North is 2/5 of Canada's land mass
- Natural resources include mineral and oil and gas deposits
- The North is on the front line of climate change impacts and adaptation
- Sovereignty importance increases as sea ice melts and the Northwest Passage becomes a reality

Northern Development Strategy

Four Concrete Action Areas:

- Exercising Arctic sovereignty
- Protection environmental heritage
- Promoting social and economic development

Improving and devolving Northern governance



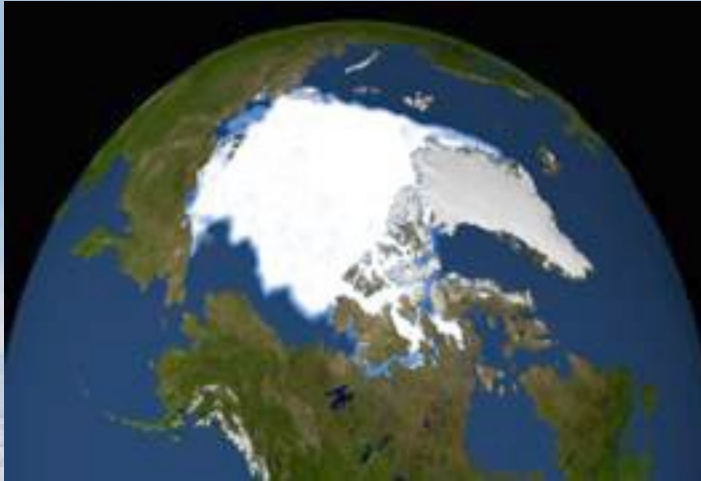
Northern Development Strategy

A white wolf is standing in a snowy, mountainous landscape. The wolf is facing left and looking towards the camera. The background shows snow-covered mountains under a clear blue sky.

The Strategy declares Canada is already at the forefront of several international efforts to study the impacts on both the Arctic and Antarctic of a changing climate

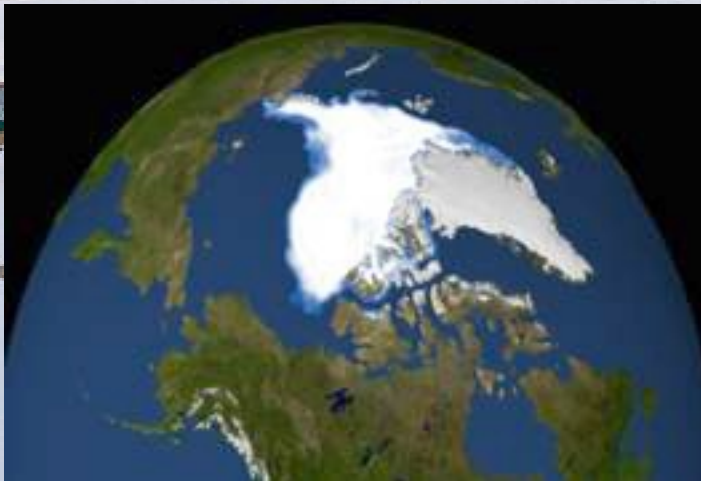
Change in the North

1997



If the deteriorating Arctic polar ice mass continues on its present course, a process known as a positive sea ice-albedo feedback will amplify.

2007



Change in the North

- Rising temperatures and increased extreme weather
- Loss of permafrost affecting facilities and transportation design and performance
- Environmental and social changes as a result of climate changes
- Easier access complements increased pressure to develop resources

Canadian Environmental Assessment Agency

CEAA Report on EA and Sustainable Development (2007-2009) suggested EA must adapt through:

- Monitor success in sustainable development
- Use innovative approaches to challenges
- Implement change when needed

Canadian Environmental Assessment Agency

Action areas:

- Strategic and Regional-scale EA
- Improved coordination among stakeholders
- Improved public and Aboriginal peoples engagement
- Increased awareness of sustainable development
- Better integration of the project review process

Canadian Environmental Assessment Agency

- The Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment prepared guidance on incorporating climate change into EIA in 2003
- Guidance focuses on GHG emissions and manage or reduce the potential risks associated with climate change impacts on projects

Other Management Agencies

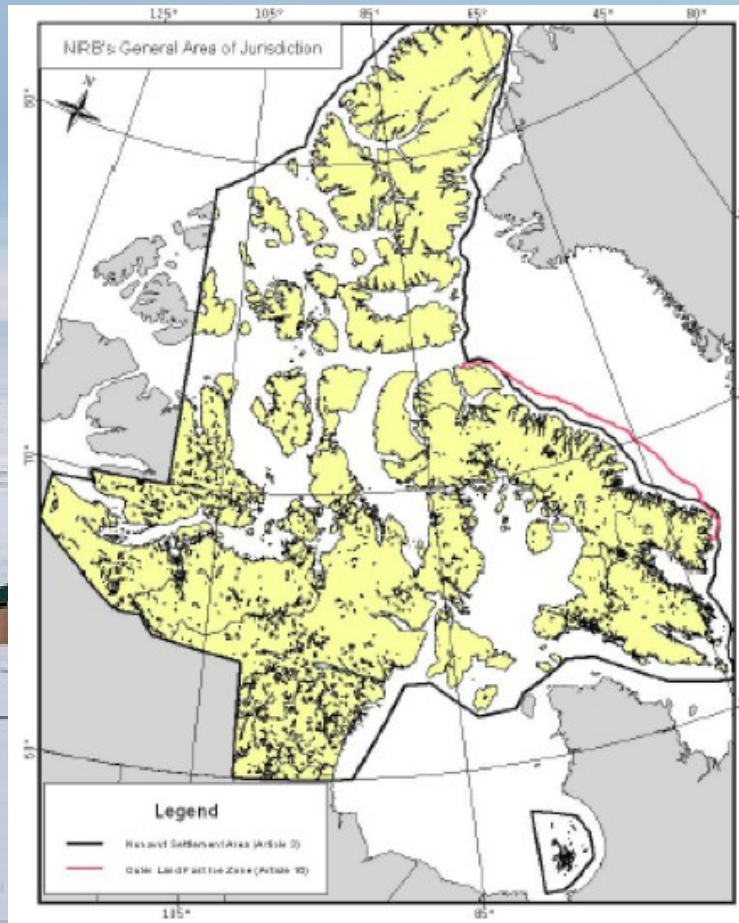


The Environmental Impact Review Board is part of the Inuvialuit Joint Secretariat established in 1986



Mackenzie Valley Environmental Impact Review Board was established in 1998

Other Management Agencies



The Nunavut Impact Review Board was established on July 9, 1996 responsible for the environmental assessment of project proposals in the Nunavut Settlement Area (NSA).

NIRB Guidelines

- An ecosystem-based approach must be adopted for the review
- Socio-economic issues, such as the economic development within the region, must be included
- An understanding of past and potential **future** environmental, economic, and social trends is required
- The well-being of residents of Canada outside the Nunavut Settlement Area must be taken into account

Baffinland

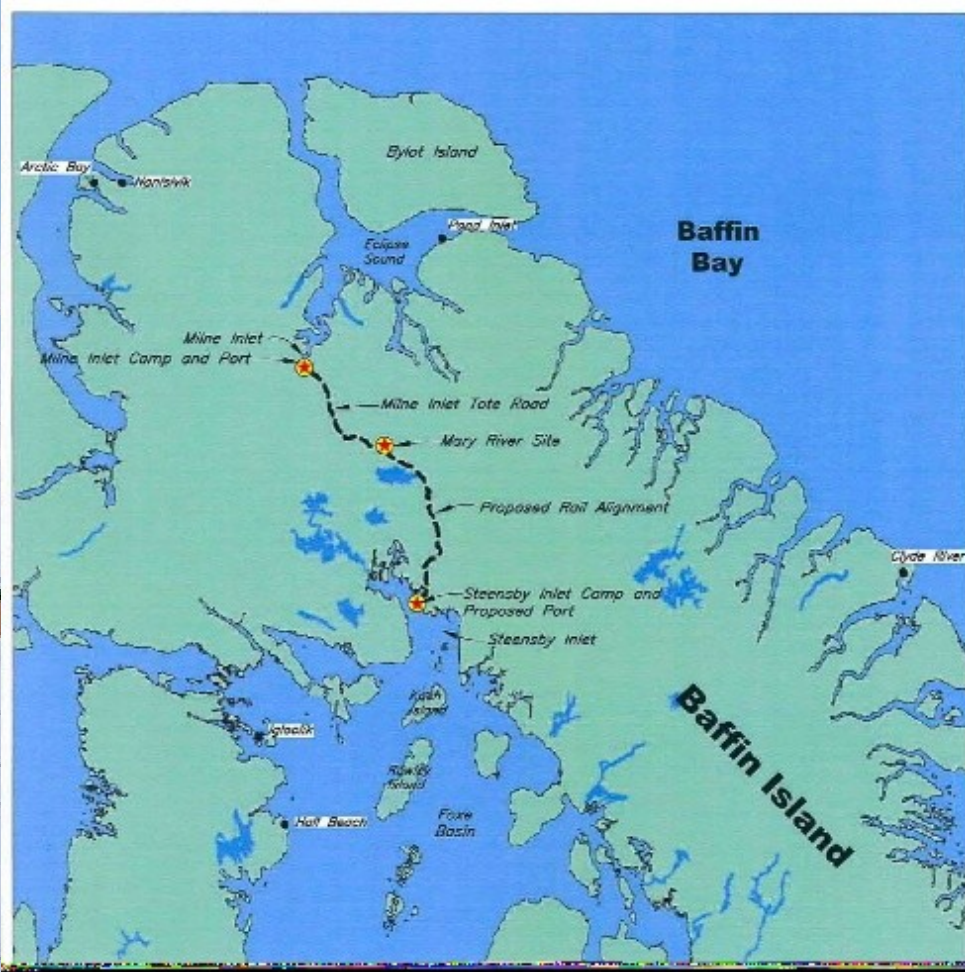
- The Mary River Project is a proposed iron ore mine on North Baffin Island, Nunavut
- A railway will transport 18 million tonne per year of ore from an open pit mine to an all-season deep-water port
- Project lifespan is estimated at 21 years



Baffinland - Screening Decision

- Full EIA requested by Review Board on June 27, 2008
- Project would be the largest in Nunavut history with technology issues, such as construction of a railway on permafrost
- Cumulative impact concerns listed included land use, mining, land transportation and marine shipping

Baffinland



Terms of Reference included climate change impacts on sensitive ecosystem features within the terrestrial and marine ecosystems, as well as mean and extreme climate parameters and extreme events



Baffinland Terms of Reference - Project Design

- Climate change assessment will include permafrost and soils with high ice content, the hydrological regime, as well as marine ice flow regimes, and the long-term impacts of such changes on the Project
- The Proponent should design and apply multiple scenarios on impacts assessments, where these scenarios span the range of possible future climates

Baffinland Terms of Reference – Impacts

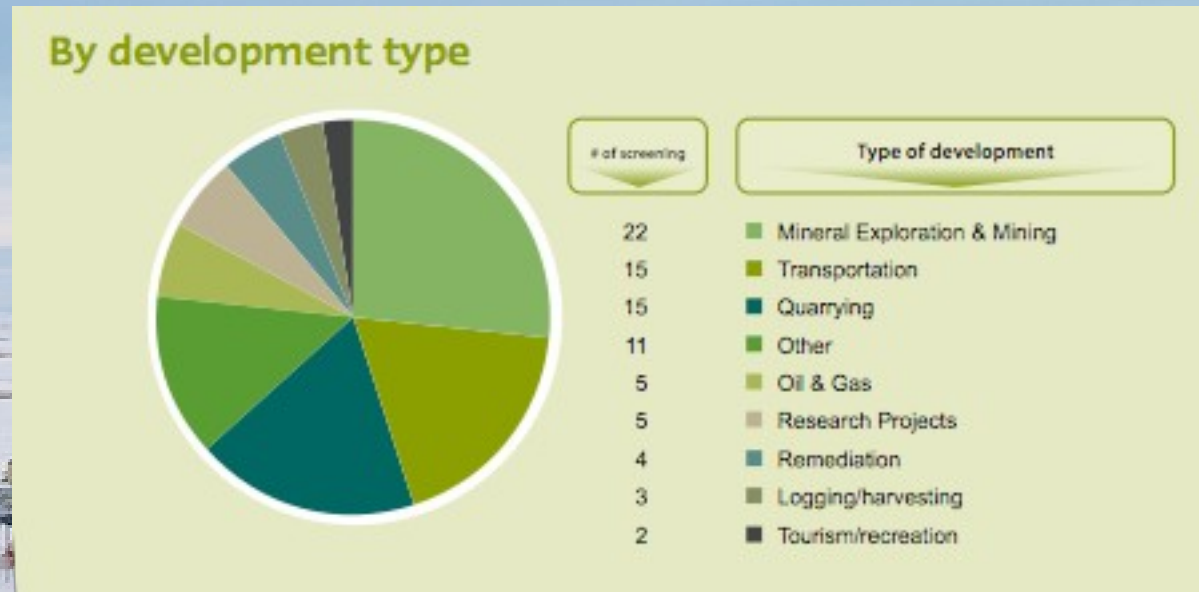
- Evaluate the significance of potential impacts on the current state of health of ecosystems and their **predictable evolution**, taking account global climate change
Longer-term effects of climate change must also be discussed up to the projected closure phase of the Project

Baffinland Terms of Reference – Uncertainties

- Uncertainties related to climate change predictions, and the related effect on other predictions in the EIS, including water quantity and permafrost thawing

Discussion of the likelihood of all possible climate changes based on various possible scenarios

Mackenzie Valley Review Board



In 2008-09 the MVRB managed 81 screenings and 16 assessments and 2 reviews

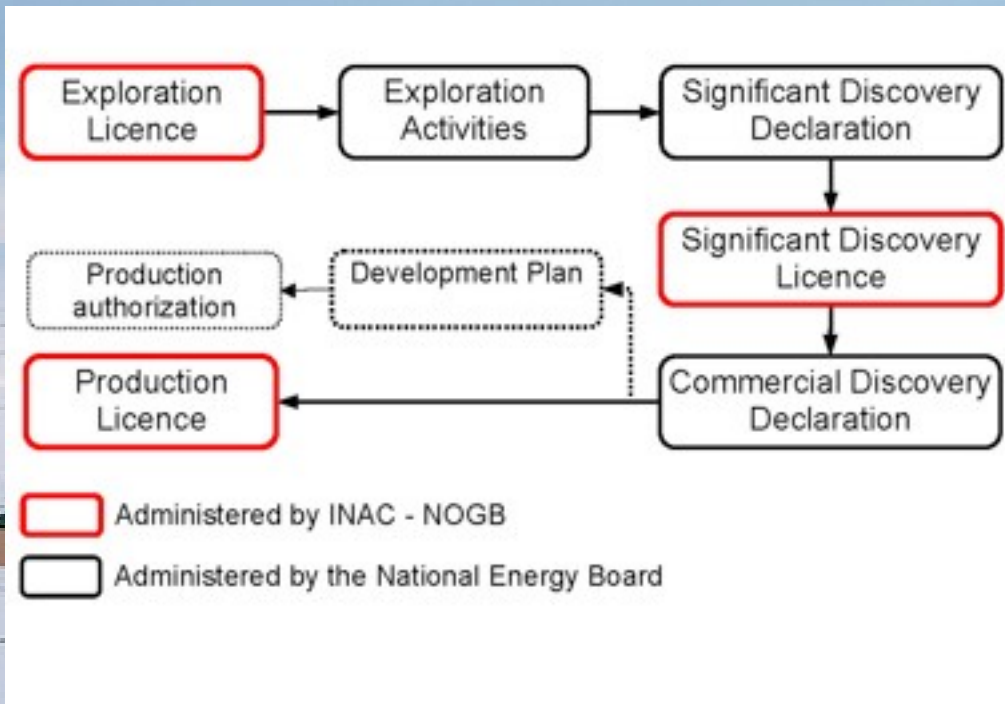
Mackenzie Valley Review Board - Climate Change

- The Mackenzie Valley EIRB frequently hosts EIA practitioners workshop
- In 2007 a miniworkshop focused on climate change in EIA
- A minority of participants wanted more sessions dedicated to climate change
- 2008 participant workshop did not mention climate change

Oil and Gas Development

- Canada's North has 33-35% of remaining conventionally recoverable resources of gas and light crude oil
- In 2009, industry did not respond to a Call for Nominations, and Exploration expenditures declined to \$117 million, half of 2008 total

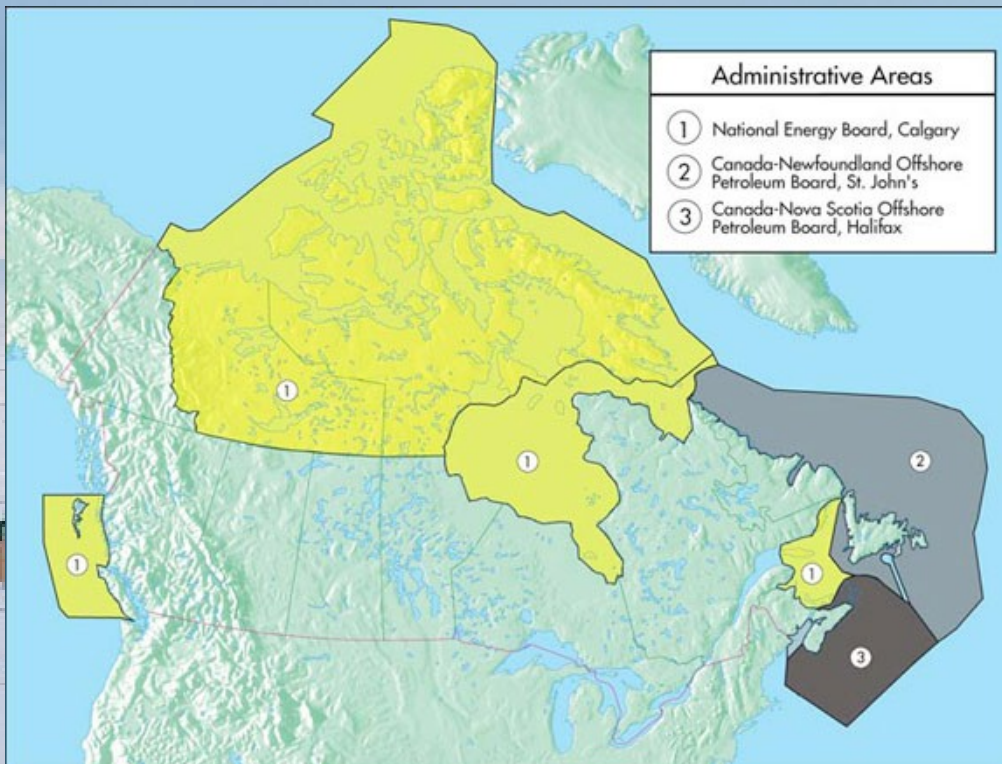
Oil and Gas Development



Indian and Northern Affairs Canada is responsible for land, royalty and benefits; National Energy Board leads in approval of operations



National Energy Board



The NEB has jurisdiction for exploration and development activities in Canada's North

NEB Arctic Drilling Review

Scope for 2010 review to examine hazards, risks and mitigations for offshore drilling in the Canadian Arctic:

- Hazards and risk, including threats to public and worker safety and the environment
- Measures to prevent and mitigate risks, including management systems
- State of physical and biological knowledge
- Well control methods, including emerging technologies

NEB Arctic Drilling Review

- This review is in progress now
- The scope for the review does not mention climate change
- Focus for many participants is potential blow outs like BP's Deepwater Horizon well in the Gulf of Mexico
- Many operational considerations are short-term, but....

NEB Review Participant Concerns

- Only 5 of 120 filings for participation in the review mention climate change
- 2 of 5 are concerns about continued reliance on oil and gas
- Of government agencies, only DFO specifically mentions present and future (climate change) risks
- Nature Canada suggests the review should include the role of strategic environmental assessment

NEB Review Participant Concerns

Only the Nuvialuit Game Council suggests that with a rapidly changing climate it is becoming less clear what threats are likely to compound the risks already involved in exploratory and development drilling



Where are we?

- Incorporation of climate change in EIA in Canada has been largely dormant since 2004
- In Canada's North incorporation has increased recently but remains inconsistent in scope
- A focus on cumulative impact assessment is lacking

Barriers

- Political resistance
- Lack of available research on ecosystem effects
- Nature of cumulative impacts – who is responsible?
- Fractured regulatory system – intentional?
- Resistance of bureaucracies – cross silo issue

Institutional Barriers

- IFIs tend to focus on viability of the project as funders
- Developing countries need guidance
- Developed countries do not want to impede development and lose competitive advantage
- The larger the institution, the more vertical segregation of issues

Next Steps

- More consistency is needed
- Evaluations of recent EIAs and cost benefits of approaches would be helpful
- A focus on SEA and cumulative assessment would be helpful
- A research fund for EIA in the north would help



Thank You

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