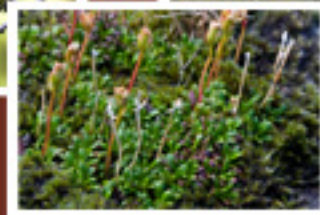
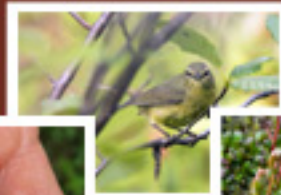


Far North information and knowledge: Building blocks for land use planning

**Paul Sampson, Science Advisor
Far North Branch,
Ministry of Natural Resources**

**Ontario Association for Impact
Assessment - Oct. 23-24, 2013**



Presentation Outline

■ Context

- Far North Land Use Planning
- Land use planning and Environmental Assessment in the Far North

■ Traditional Knowledge and information to support land use planning.

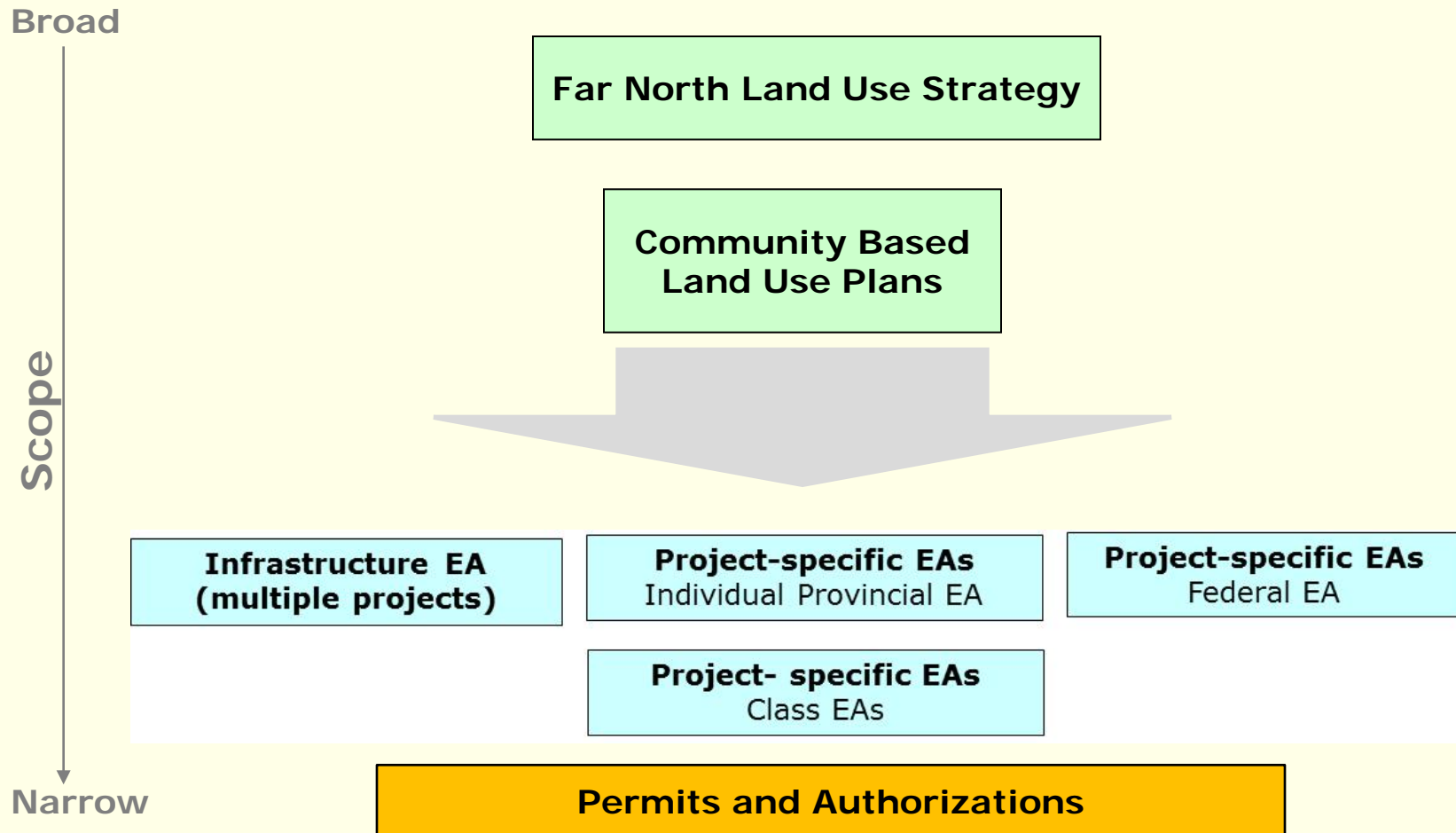
■ Successes, Challenges and Considerations

Land Use Planning – Far North Act

- Sets out a joint land use planning process between First Nations and Ontario
- Confirms a leadership role for First Nations in community based land use planning
- Requires that the use of land is consistent with the land use designations in an approved plan
- Provides for orderly development in the Far North:
 - most developments require that a community based land use plan be in place (e.g. opening of a mine) unless an exemption or exception applies

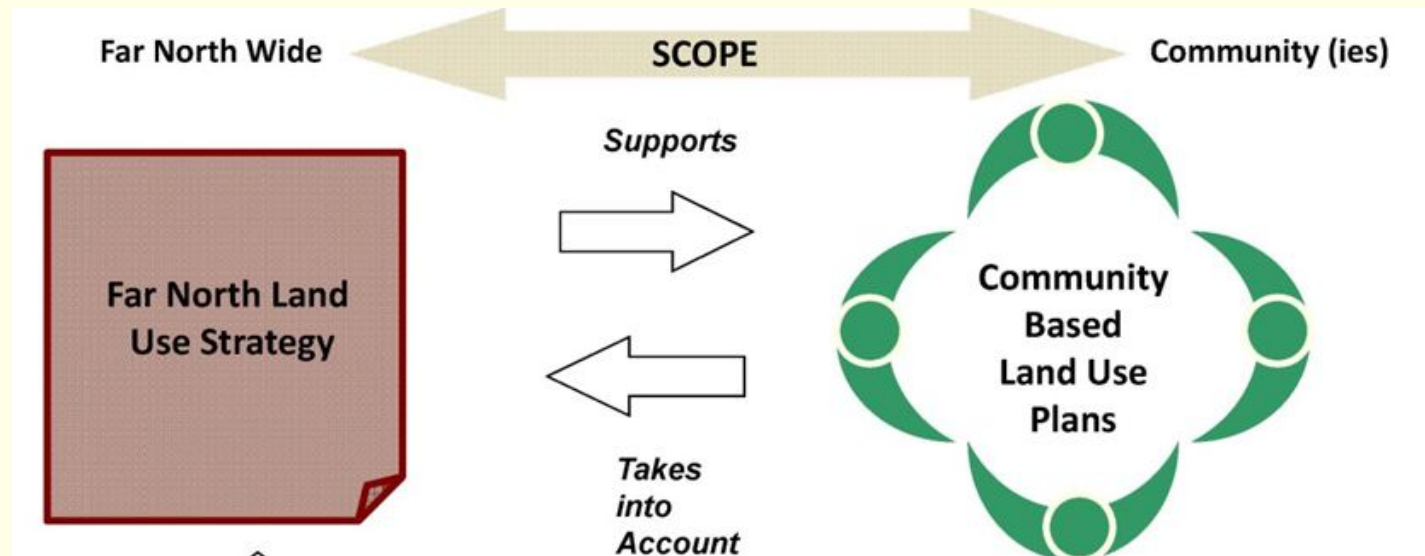


Hierarchy of Planning and EA processes



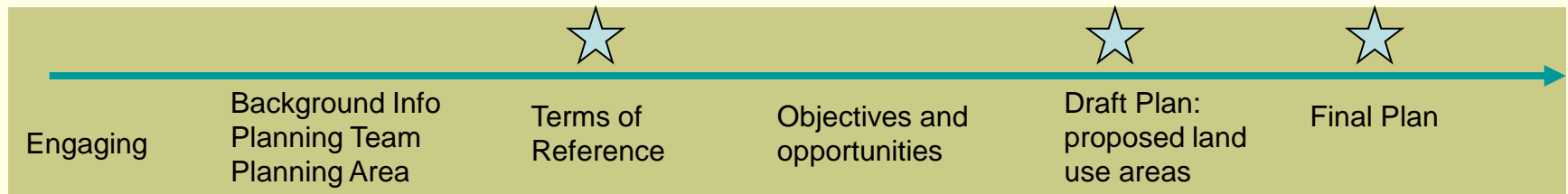
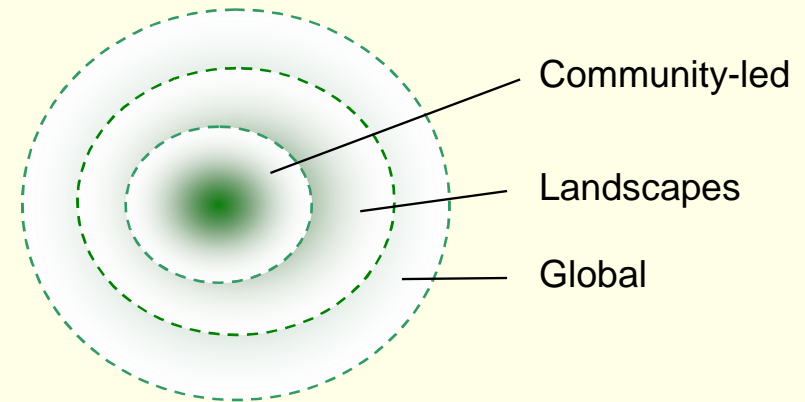
Far North Land Use Strategy

- Will assist in preparation of individual community based land use plans and guide the integration of matters beyond individual planning areas.
- For example, will provide guidance on how to consider watersheds, caribou habitat and migration routes, roads and transmission corridors.
- Minister of Natural Resources must ensure Strategy is prepared.



Community Based Land Use Planning

- Plans are prepared by a joint planning team (First Nations and Ontario)
- Developed through a *consensus* based approach at each stage
- Built on the best information available
- CBLUP approach is successful by building a relationship to move forward, supporting a shared understanding of perspectives, goals and interests



★ Denotes public consultation opportunity

Process Relationships

Community Based Land Use Plan (CBLUP)

- Led by First Nations working together with ON – First Nations setting direction.
- Communication of shared desired outcomes
- What, where and strategic direction for activities to achieve objectives
- Enabling the opportunities

Environmental assessment

- Led by proponent & agencies
- First Nation input
- Scope, what and how activities must take place
- Enabling the projects.

Business Arrangements

- First Nations and Industry
- Clarifies and supports the understanding of the opportunity.
- Provides catalyst to completing enabling processes.

Key components

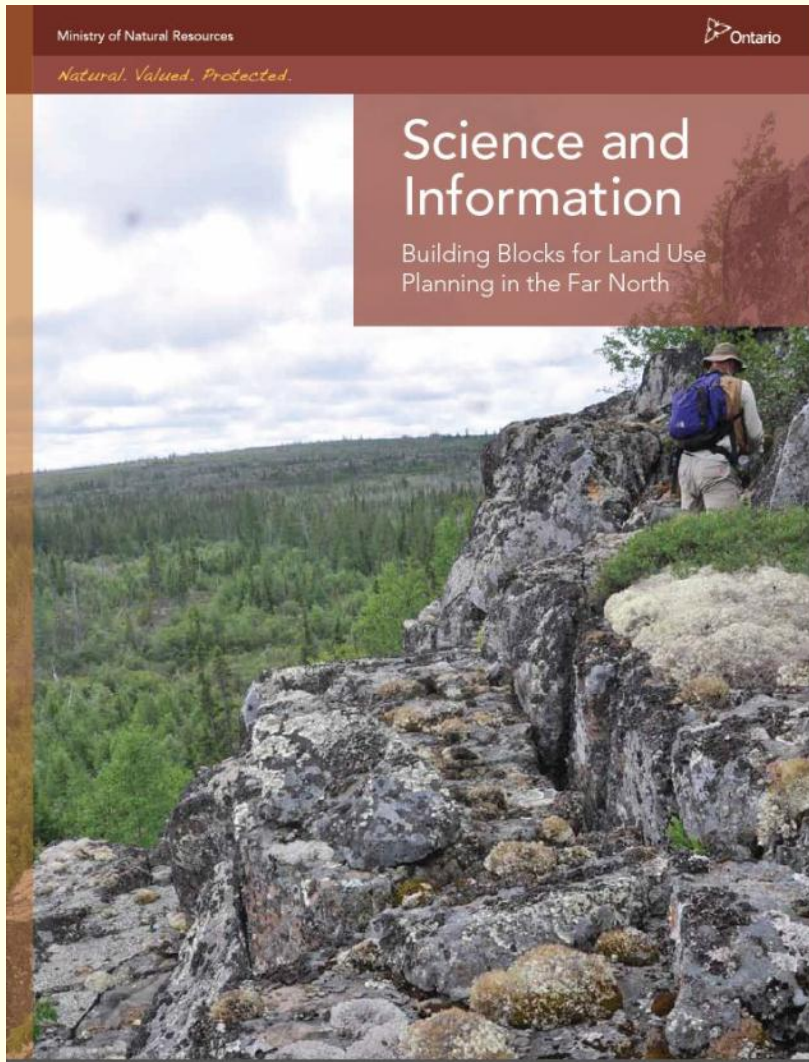
- Relationship
- Information
- Consultation
- Description of environment
- Determine 'desired and compatible' activities.
- Location of 'desired and compatible' activities
- Description of effects
- Measures to address effects

Traditional Information and Knowledge

- First Nation traditional information and knowledge
 - First Nation community knowledge is housed within the community
 - Community determines how the information is shared with Ontario



Science and Information



Ministry of Natural Resources took a strategic view of science within the provincial government to support planning:

- What information and knowledge will be required to support land use planning decisions?
- What do we know or have?
- What don't we know or have?
- What do we need to collect or create to help fill our gaps?

MNR Far North Information & Knowledge Projects

Working together in partnership with provincial and federal government programs, universities,
First Nations and other external agencies

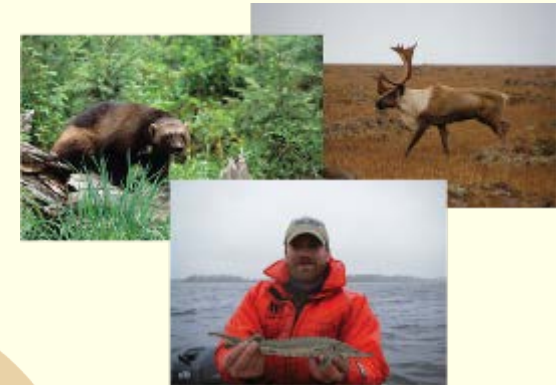
Aboriginal Traditional Knowledge



Knowledge of the Land



Knowledge on Species of Interest



Knowledge on Climate Change



First Nation Community Knowledge

Best Available Knowledge & Information

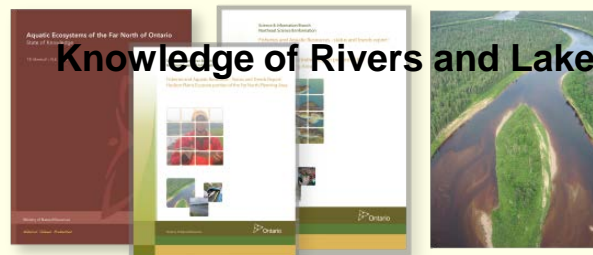
Far North Information and Knowledge Management Projects

Other Sources
Other provincial & federal government programs, universities and other external agencies.

Knowledge of Natural Values & Biodiversity



Knowledge of Rivers and Lakes



Opportunity to benefit from Information Knowledge Management (IKM) projects

Examples of Information Knowledge Management supported projects

■ Revised fundamental base data:

- Base data
- Hydrology
- Land Cover
- Vegetation Change

■ Tools and applications:

- Ontario Flow Assessment Tool
- GeoPDFs
- CapturX for values collection

■ Inventory and occurrence information:

- Species of interest (e.g., caribou)
- Biodiversity
- Historical field plots

■ Aboriginal Traditional Knowledge:

- Sea-run brook trout
- Sturgeon
- Wildlife harvest surveys

■ Monitoring and research:

- Stream gauges
- Carbon flux stations
- Peatland and forest modelling

■ Research and reporting:

- Aquatic state of knowledge
- Climate change in peatlands
- Ecosystem status and trends

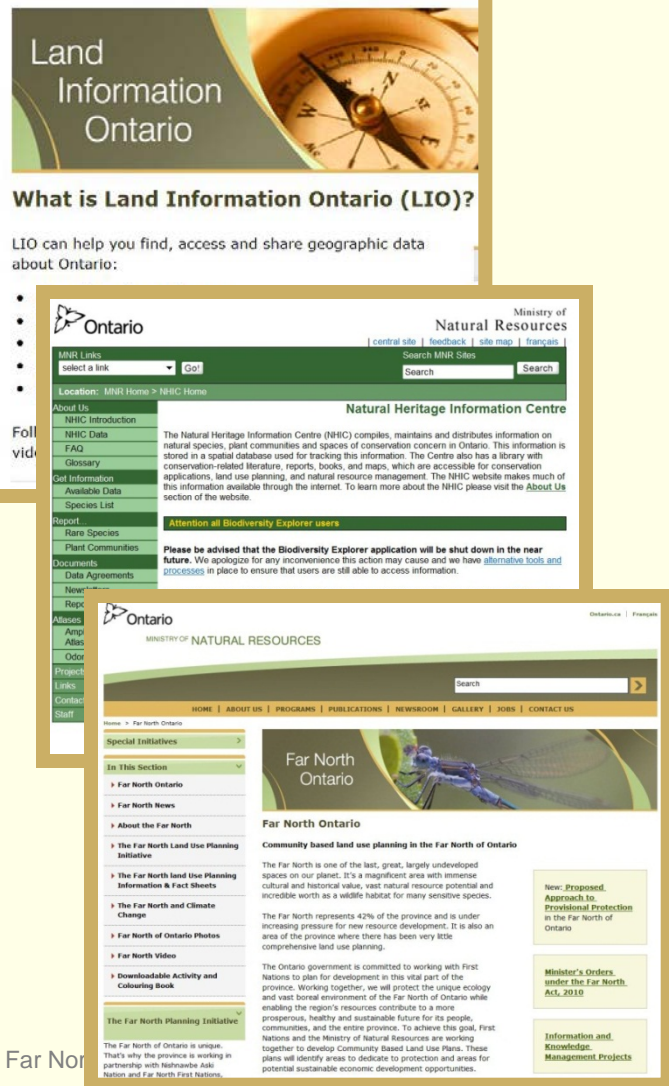
Opportunity to benefit from Information Knowledge Management (IKM) projects

Examples of making science and information available...

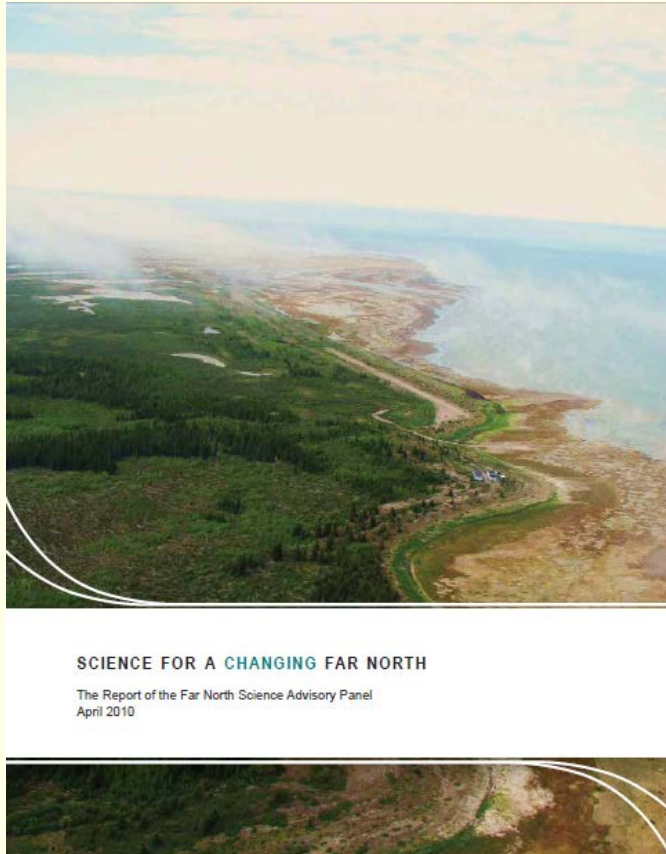
- Spatial data and applications available through:
 - Land Information Ontario ([LIO – link](#))
 - Natural Heritage Information Centre ([NHIC link](#))
 - Surface Water Monitoring Centre ([SWMC – link](#))
 - OGSEarth ([OGSEarth link](#))

- Additional resources and information available through:

- Far North Branch ([Far North Branch link](#))
- Ministry of Natural Resources ([MNR link](#))



External Advice



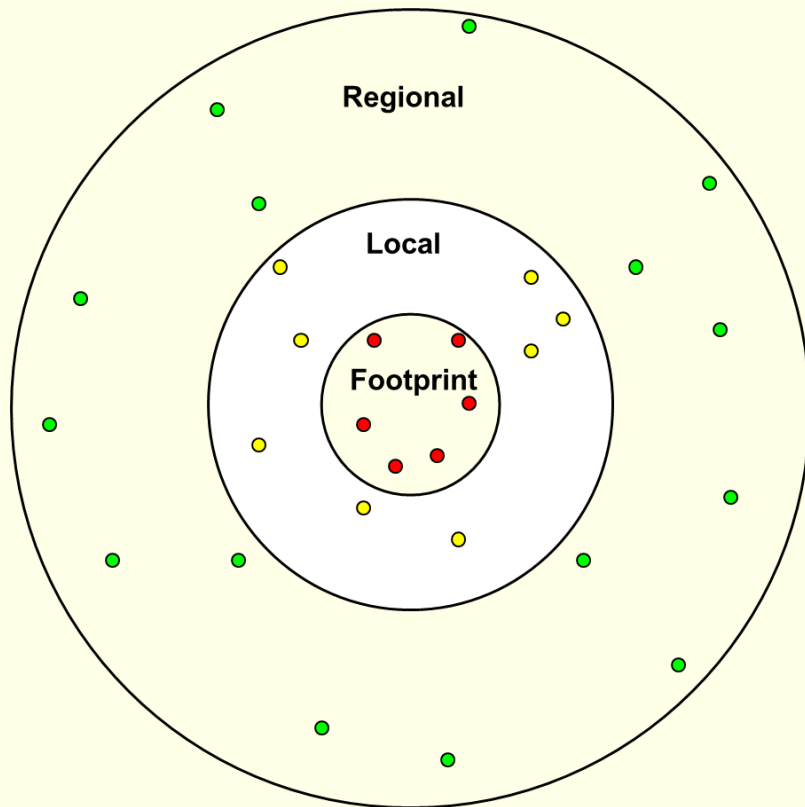
Far North Science Advisory Panel
Guidance included:

- Plan development incrementally in considered proactive fashion
- Apply best continuous learning approach through adaptive management
- Provide necessary information resources for communities and government to support planning and management

Far North Science Advisory Panel Report highlighted:

- ecological overview
- key management issues
- approaches to planning

Considerations...an integrated, strategic approach



Taking a strategic and integrated approach....

Benefits monitoring beyond the project level and provides needed information on ecosystems affected, or potentially affected

- MNR is committed to working with First Nations, federal and provincial partners on a Regional Long Term Monitoring framework for the Ring of Fire.

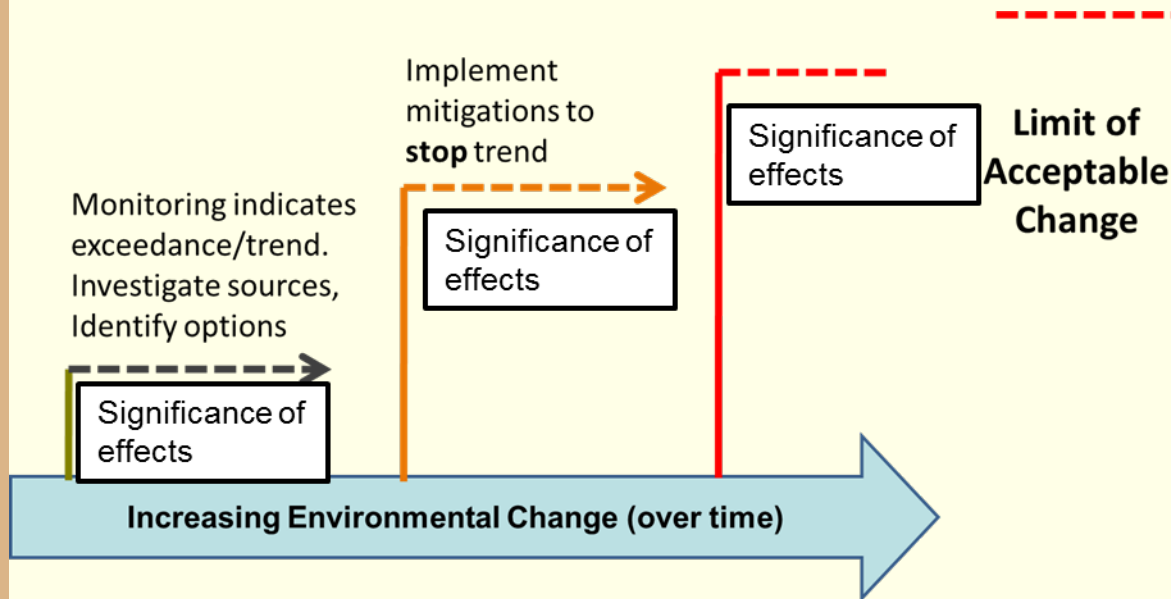
Considerations...working together

Stay focused....Goals, objectives and desired outcomes help to define temporal and geographic scope.



And balanced...Scope of cumulative effects assessment needs to consider practical trade-offs of available resources, questions of interest, sampling design and associated risks.

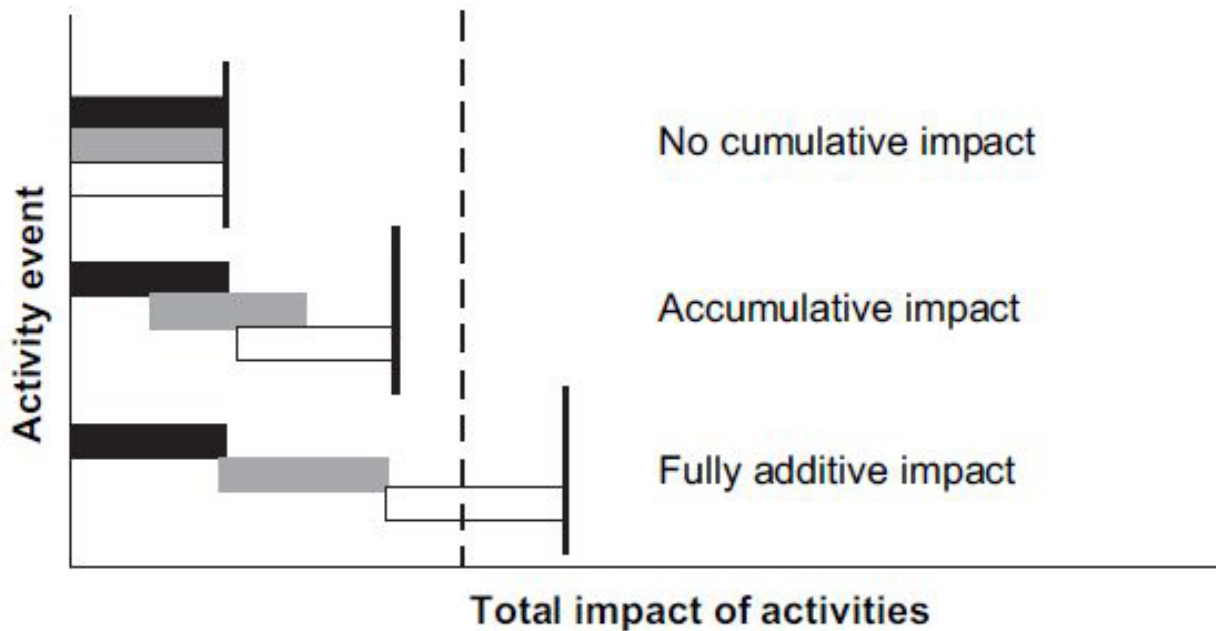
Considerations...working together



How much is too much...

Determining significance is not just about science but includes values, cultural perspectives, overall goals and objectives.

Things to consider... Uncertainty



Impacts of activities...

Assumes understanding of stressors, ecosystem response (e.g., resilience) and ability to measure or interpret changes

Source: Halpern, B. et al. 2008. Managing for cumulative impacts in ecosystem-based management through ocean zoning *Ocean & Coastal Management* 51: 203-211

Considerations... Adaptive approach

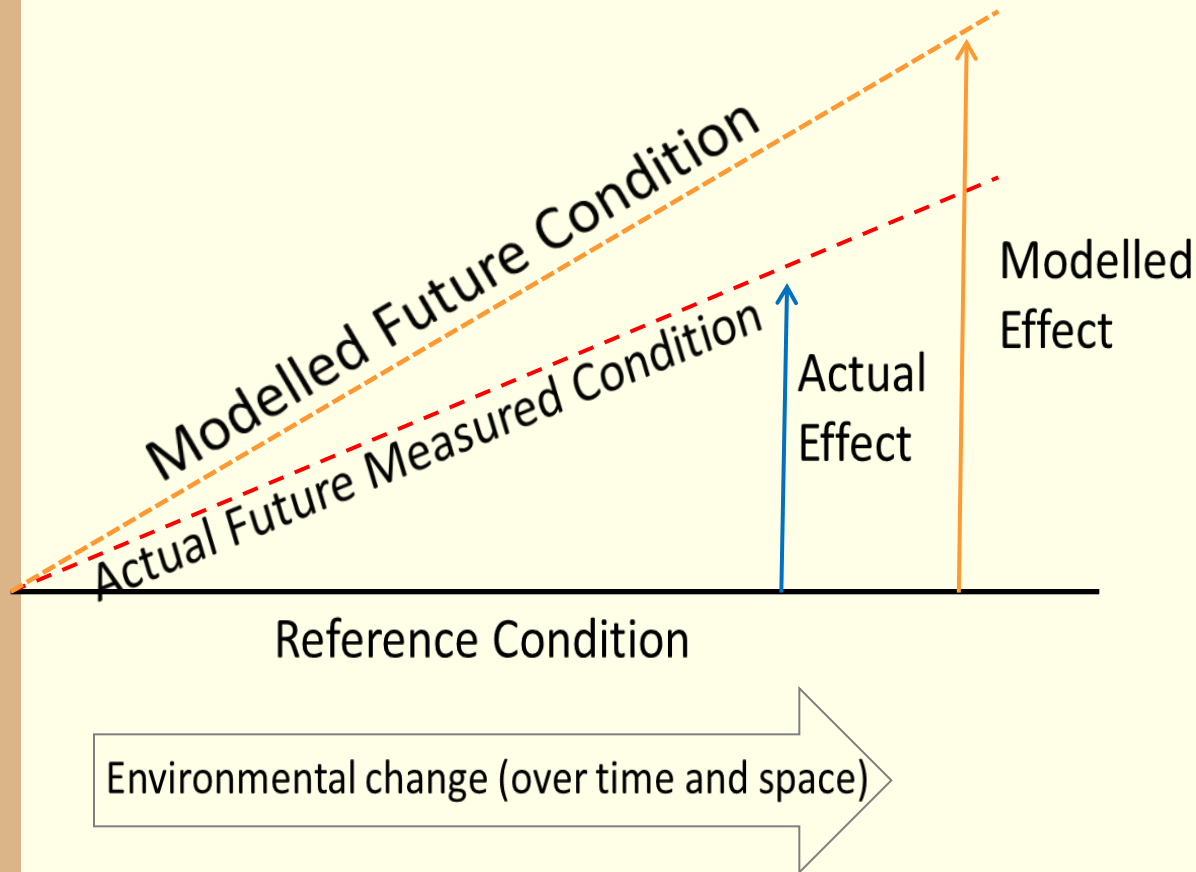


Actual effect ...

Determining why is not always possible because of other confounding effects (e.g., secondary and interacting effects).

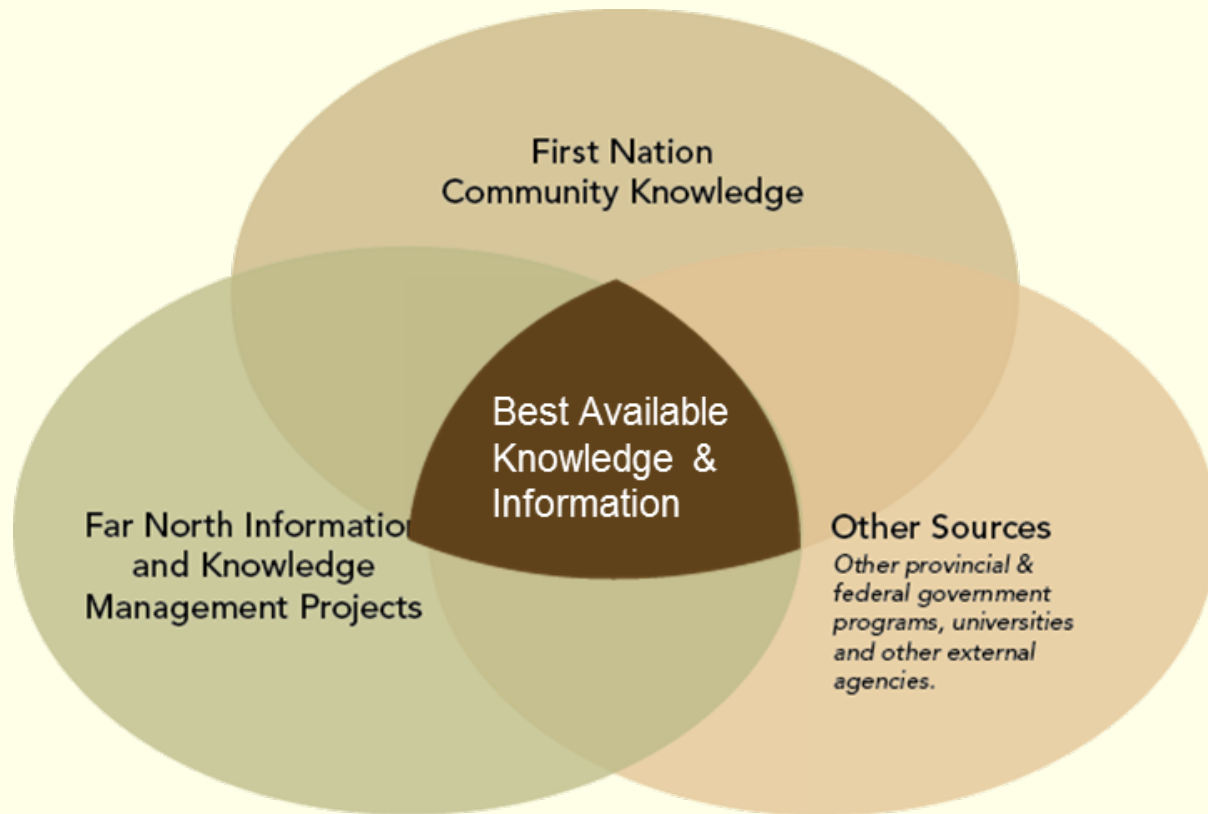
Taking an adaptive approach to monitoring is key.

Considerations... Shared understanding



Modelling future scenarios ...
may help build a shared understanding of possible effects.

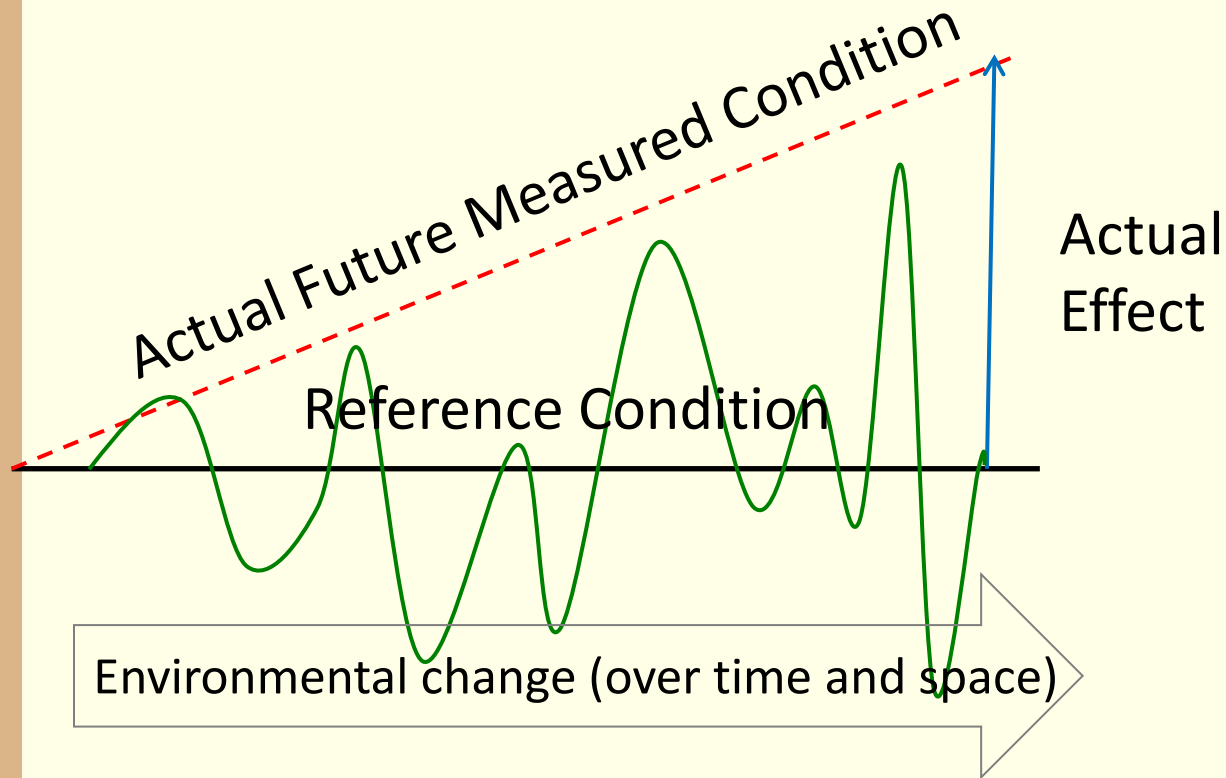
Things to consider... Shared Understanding



Learning needs to derive from both technical and social processes

People will not support what they do not understand

Considerations... long-term commitment



Variability exists...

Identifying and understanding potential effects takes a long term commitment. This commitment begins prior to development and extends beyond an individual project lifespan.

In summary

- First Nations have a leadership role in planning and will work together with Ontario to create community based land use plans.
- Land use planning can and is proceeding concurrently with planning for the potential mineral development in the Ring of fire.
- Good planning creates certainty and enables economic development opportunities that will extend beyond the Far North.
- Information is the foundation of planning. CBLUP approach is successful by building a relationship to move forward, supporting a shared understanding of perspectives, goals and interests
- Considerations include:
 - Working together
 - Taking an integrated and strategic approach
 - Recognizing uncertainty
 - Using an adaptive approach
 - Gaining a shared understanding
 - Needing a long-term commitment

For more information
please contact the Far North Branch
www.ontario.ca/farnorth