Opportunities for Indigenous and Local Involvement to MPA Network Planning:
Perspectives from Canadian and Pan-Arctic Projects

Martin Sommerkorn & Martine Giangioppi
WWF

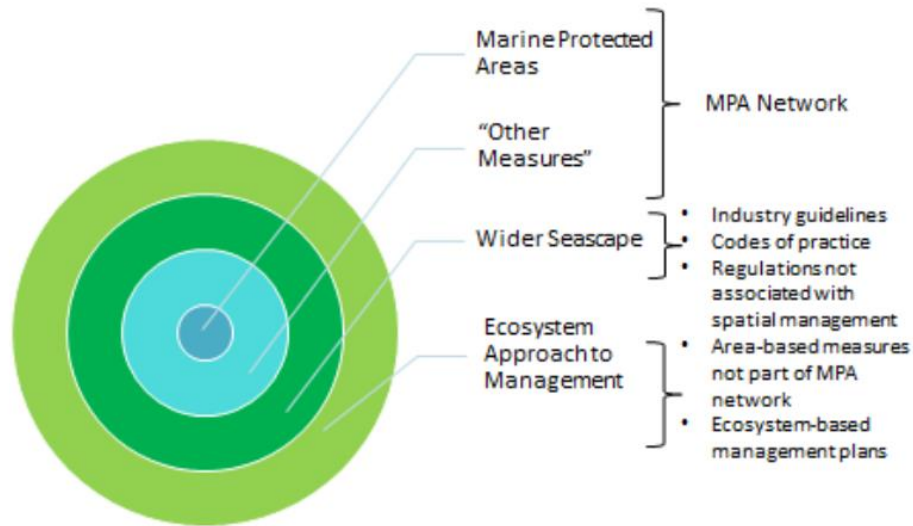© Paul Nicklin National Geographic

"*An invitation to engage in transparent and systematic approaches to area-based marine protection in the Arctic*"

Martin Sommerkorn & Martine Giangioppi
WWF

Planning MPA networks as part of an Ecosystem Approach to Management is a participatory process
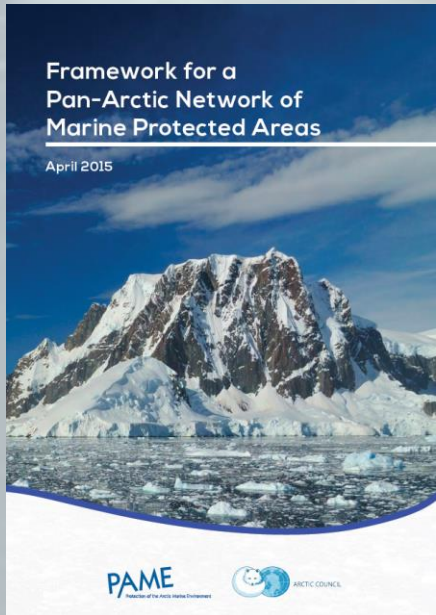

MPA Networks as Part of an Ecosystem Approach to Management

1. What to protect / why to protect?
2. Where to find it/ where to protect it / how much to protect?
3. How to protect it / what to protect it from?
4. (How to manage?)

The pan-Arctic MPA framework language and systematic conservation planning principles

Representative

The "ideal" is to sample every kind of biodiversity
1. Species, communities (composition)
2. Habitats, biotopes (structure)
3. ecological processes (function)
4. ecological 'regions' (biogeocenoses and seascapes)

Also, sampling across the full range of variation of each feature (i.e., replication)

Adequate

Protecting enough to ensure resilience of biodiversity and continuity of ecological process that ensure ecosystem services. BUT *How much is enough*?

Efficient

Achieving objectives with a minimum "cost", that is to say, with the least possible impact for all those involved

Connectivity

"Processes by which genes, organisms, populations, species, nutrients and/or energy move among spatially distinct habitats, populations, communities or ecosystems" (MPA Center Report, 2017).

Framework for a
Pan-Arctic Network of
Marine Protected Areas

April 2015

PAME

How does the Marxan Decision Support Tool work?

1. The study area delineated and subdivided into **planning units**

2. Area of each **conservation feature** for each planning unit quantified

3. Quantitative **targets** for each conservation feature

4. A **cost** associated with each planning unit

5. Run Marxan

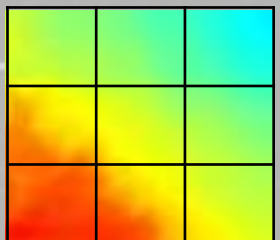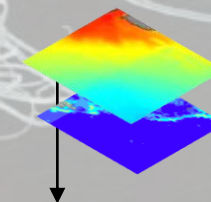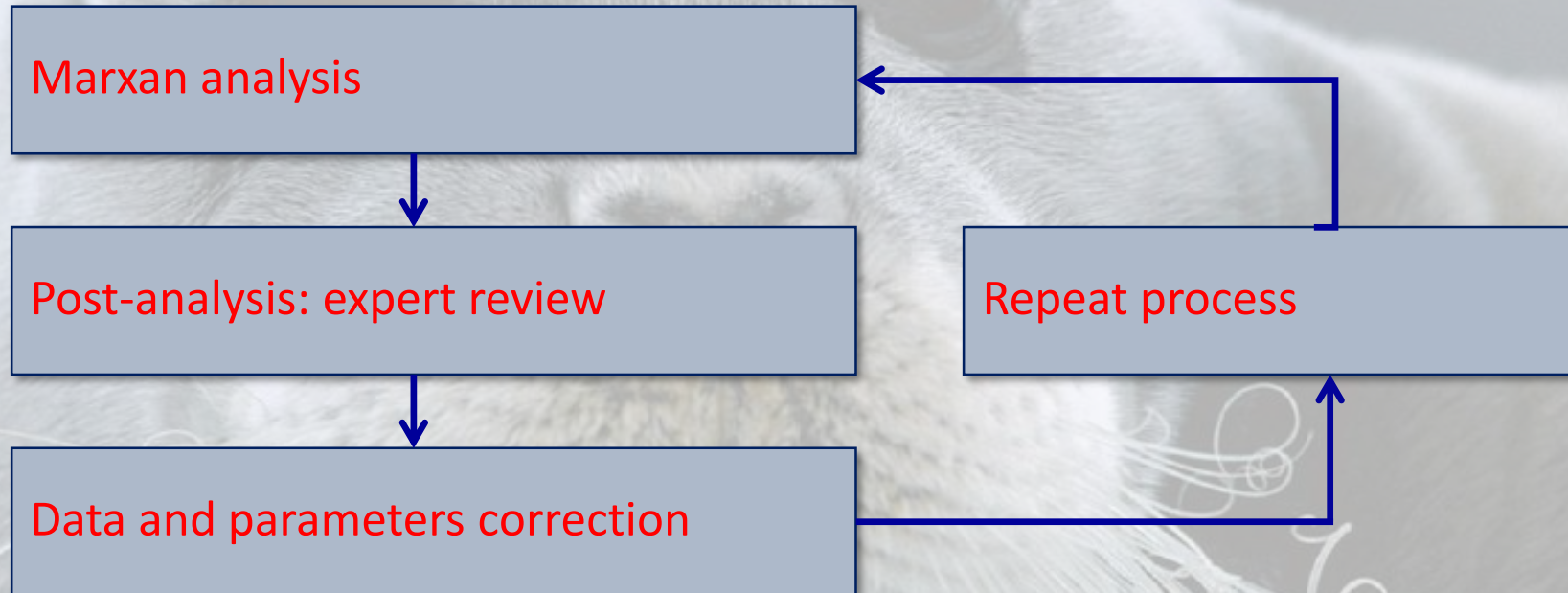   Objective:

   I. **Minimize**:

   a) The total "*Cost*" of the reserve network

   b) Total "*Boundary*" of the reserve network

   II. *While meeting all conservation targets*

1km²

| 0.6 | 0.6 | 0.4 |
| 0.8 | 0.4 | 0.2 |

An iterative process

Marxan analysis

Post-analysis: expert review

Data and parameters correction

Repeat process

# Benefits of using the Marxan Decision Support Tool

- Addresses core conservation planning principles (Representation, Adequacy, Efficiency)

- Selects areas in a systematic, repeatable and transparent manner

- Provides many good solutions, flexible for stakeholder engagement

- Incorporates different kinds of data to solve complex network design problems

- Maps 'key' locations both for conservation and for different uses

- Facilitates exploration of trade-offs btw socio-economic & ecological objectives

Building on previous experience:
Network of candidate sites for marine protection in the Russian Arctic
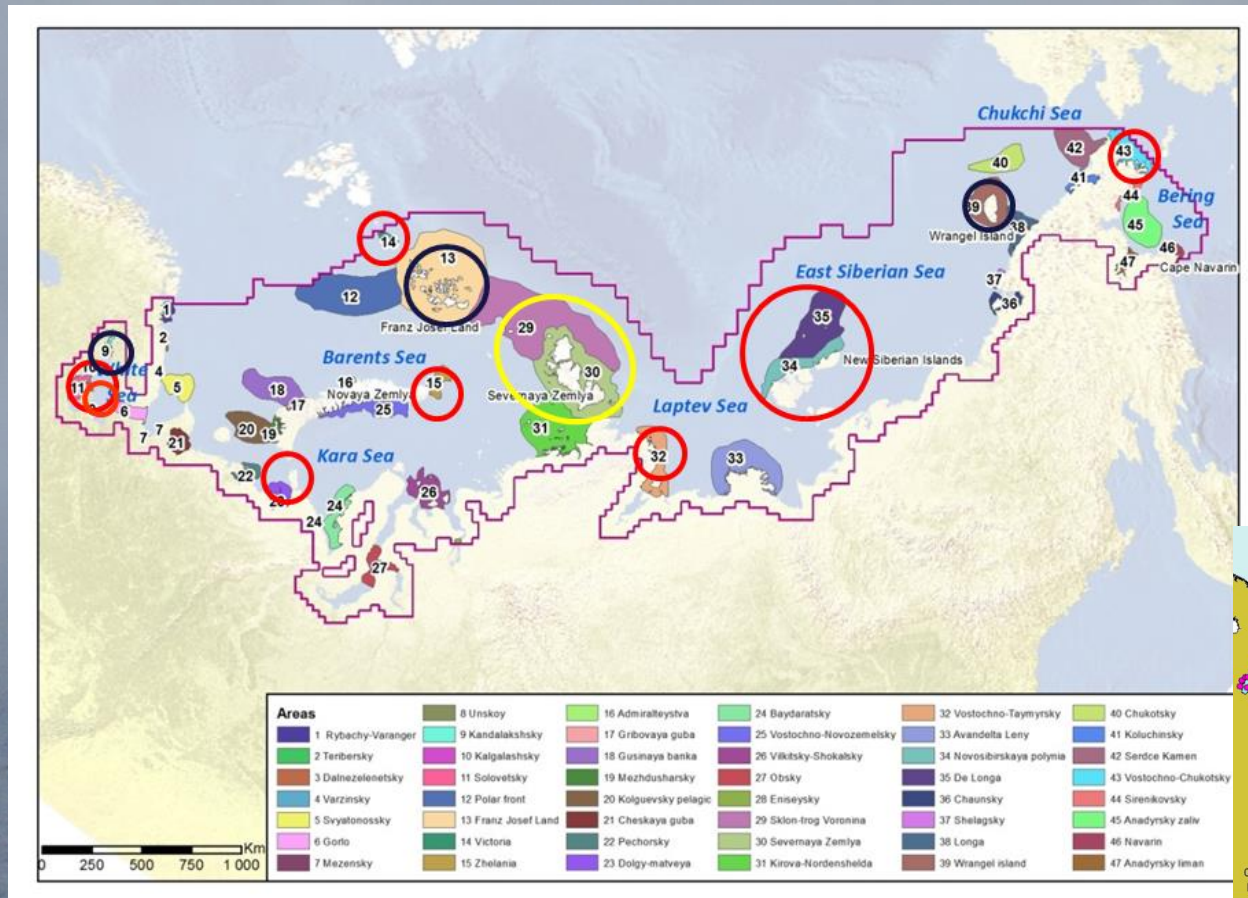
~ 25 % of EEZ
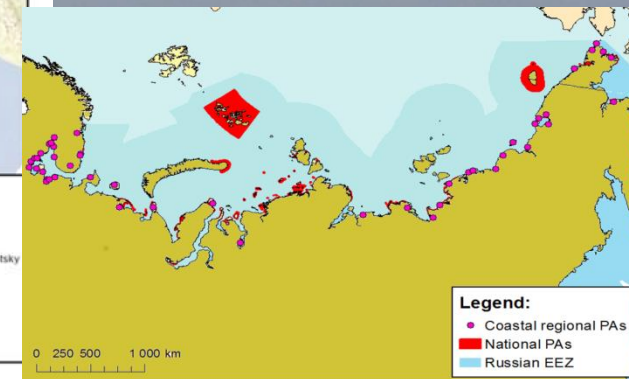
Perspective I.

Pan-Arctic Marine Protected Area Network
(PAMPAN):
an overview and opportunities for involvement

Martin Sommerkorn
(WWF-Arctic Programme)
and the PAMPAN team

PAMPAN purpose and objectives

Goal:

To identify and map an ecologically representative and well-connected pan-Arctic network of marine areas specially-managed for the conservation and protection of Arctic marine biodiversity, ecological processes, and associated ecosystem services and cultural values.

Objectives:

- to showcase and apply a transparent analysis,
- to produce maps as concrete proposals for planning and implementation processes, and
- to initiate, engage, and facilitate a growing community of practice in an open and inclusive process.

Pan-Arctic analysis scope

- MPA network planning must consider a variety of nested spatial scales – the pan-Arctic (biome) scale deserves a dedicated analysis.

- Focus is on conservation features that are representative or distinctive at the pan-Arctic scale – this may be a different set than e.g. national scale sets.

- Pan-Arctic analysis is neither the same as the sum of lower scale analyses, nor does it replace them.
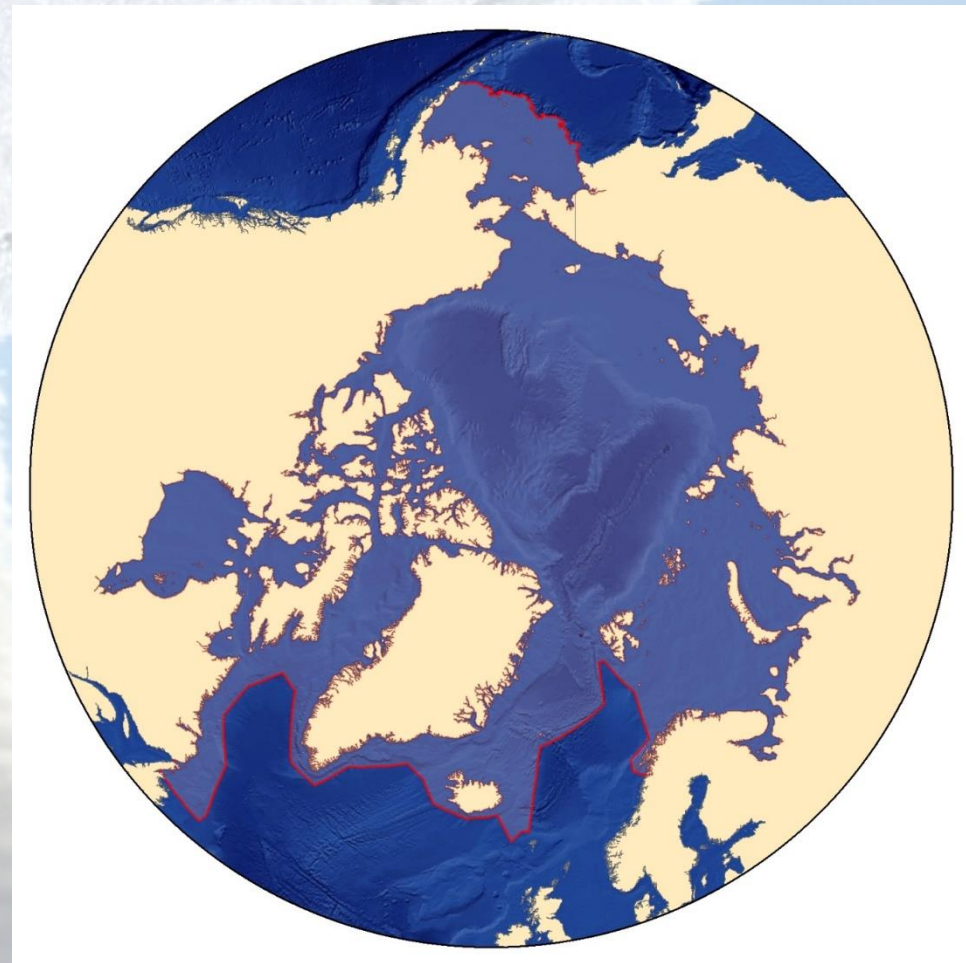
- >17 million Km^2
- >18,000 planning units
- 30 x 30 km (900 km^2) unit size

PAMPAN – outputs

- Map(s) showing a first (set of) scenario(s) of a pan-Arctic MPA network,

- Project report - steps of the analysis and decisions taken,

- Scientific articles,

- Outreach and communication efforts to socialize the project and to submit analyses and scenario maps to relevant planning and implementation processes.

PAMPAN – working together

Workshop I
- Getting familiar with the approach
- Organizing our collaboration
- Discussing principles and approaches for selecting conservation features
- Setting geographic scope.

Workshop II
- Agreeing on conservation features,
- Discussing approach to setting targets
- Understanding dataset availability.

Preliminary Marxan analysis

Workshop III
- Discussing preliminary spatial Marxan analysis
- Identifying needs for improving input data layers, data review, and parameters.

External expert dataset review

Workshop IV (distributed)
- reviewing datasets and targets.

refining the analysis and finalizing a first set of scenarios/ maps

Feb 2018 (Ottawa)   2018 (Oslo)   Feb 2019 (Copenhagen)   summer 2019   autumn 2019

PAMPAN – Conservation Features of special importance for Indigenous People

Objective	Criteria	CF sets (examples)
Special importance for Indigenous Peoples and communities, and local renewable natural resource-based economies	Key subsistence species for Indigenous Peoples, and their habitats and trophic linkages.	Spawning, breeding, and feeding areas, migration corridors, of populations and geographical forms of species of fish, seabirds and marine mammals important for Indigenous Peoples and communities, and local renewable natural resource-based economies

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PAMPAN – "post analysis" opportunities for cooperation to learn from Indigenous Knowledge

- Refine approach, data, and analyses with knowledge reflecting special importance for Indigenous Peoples and communities, e.g.:
  - Indigenous knowledge to complement scientific datasets for livelihood-important conservation features (e.g. spatial information of important hunting areas).
  - create overlays between candidate sites and local uses areas to discuss synergies with conservation.

Perspective II.

Marine Ecological Conservation for the Canadian Eastern Arctic (MECCEA):
an overview and opportunities for involvement

Martine Giangioppi

(WWF-Canada)

and the MECCEA team

WWF-Canada's goals for MECCEA

- To identify **PRIORITY AREAS for CONSERVATION** (**PACs**) based on ecological principles that rely on both scientific and indigenous knowledge.

- To ensure that the **PACs** are "integrated into the wider landscape and seascape" by patterns of connectivity, thus permitting the establishment of a true Network of arctic marine protected areas.

- To identify individual sites for marine conservation and work with specific interested parties to advance the establishment of future protected areas

- To prompt the Government of Canada to establish a marine conservation areas network in the Eastern Arctic

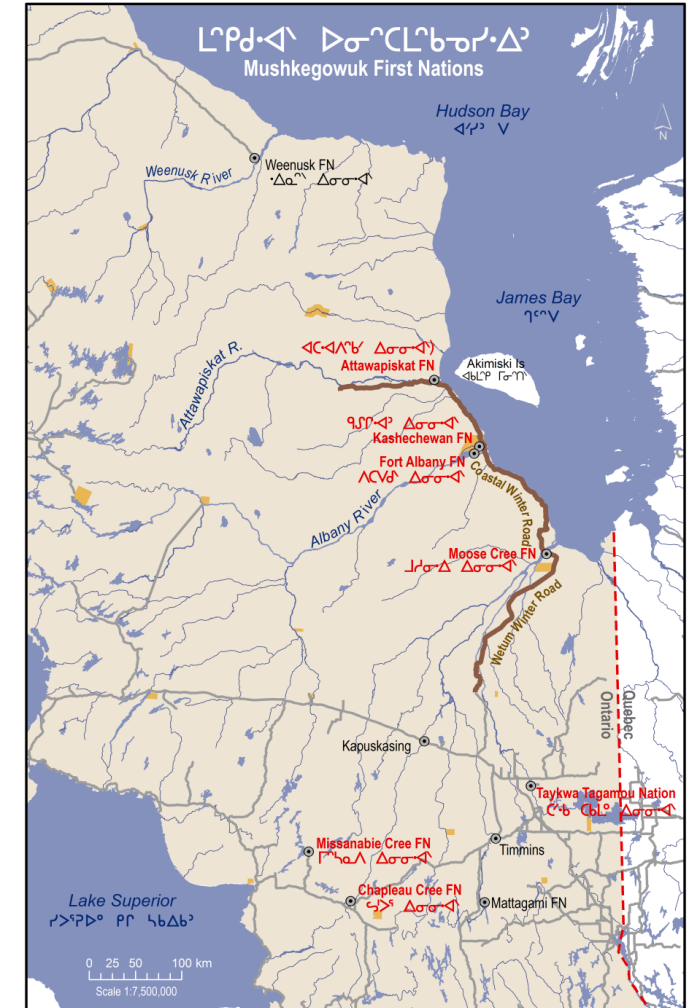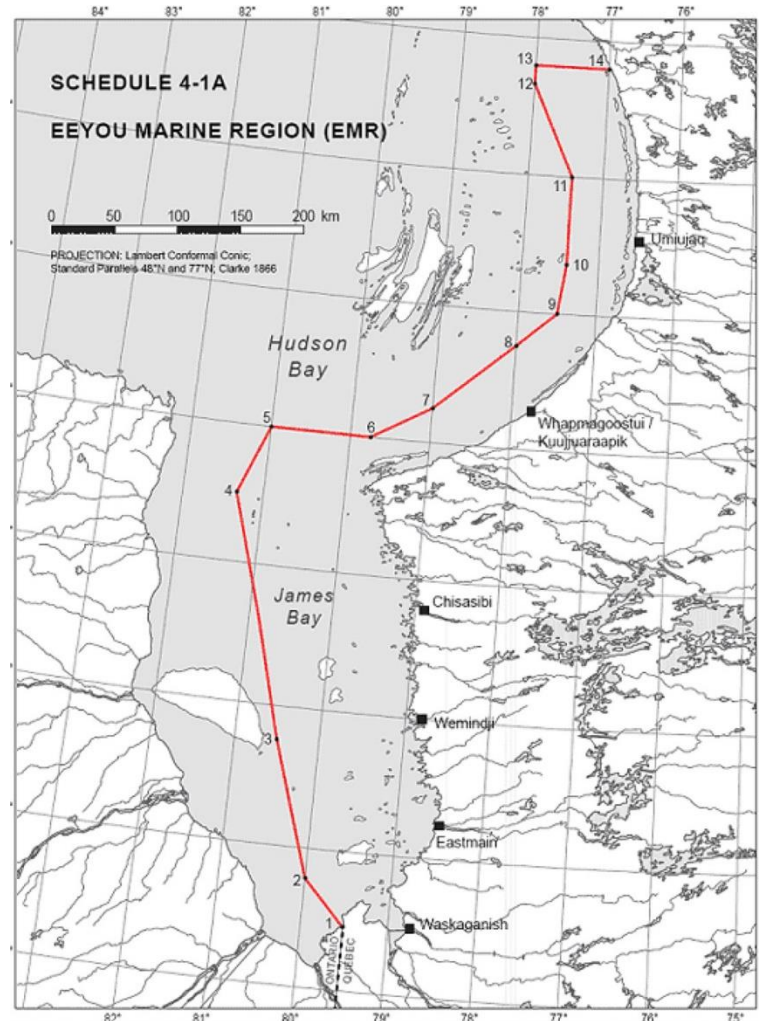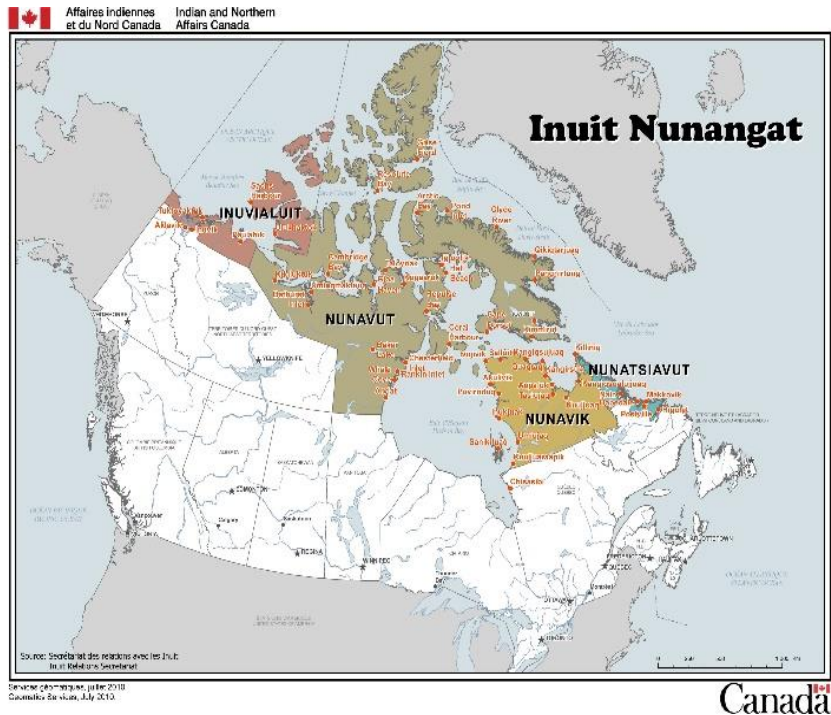- To provide a basis for future MPA network planning and management decisions beyond MPAs

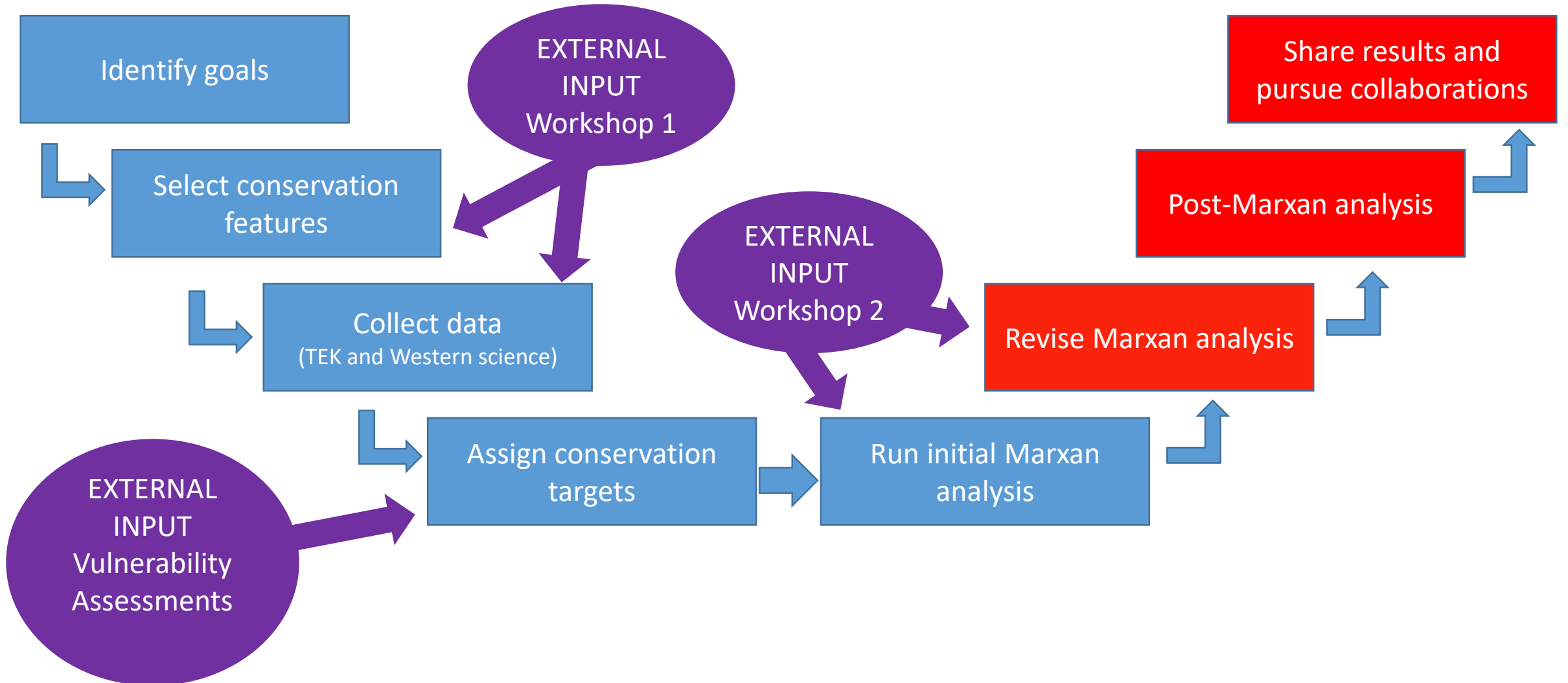# PEOPLE ..and Indigenous Knowledge

MECCEA approach for inclusion of Inuit Knowledge

Inuit knowledge sources have been/will be used in two ways:

Marxan Analysis – Ecological knowledge only

- Ecological conservation features using mapped Inuit ecological knowledge (e.g seals, arctic char, marine mammals locations)

Post-Marxan Analysis – Local uses information

- Inuit use areas using mapped Inuit knowledge sources documenting human uses
  - Important hunting areas, significant historical or cultural sites, travel routes, etc.
- Overlays between the Priority Conservation Areas and Local uses areas will be conducted to identify compatibility areas for conservation
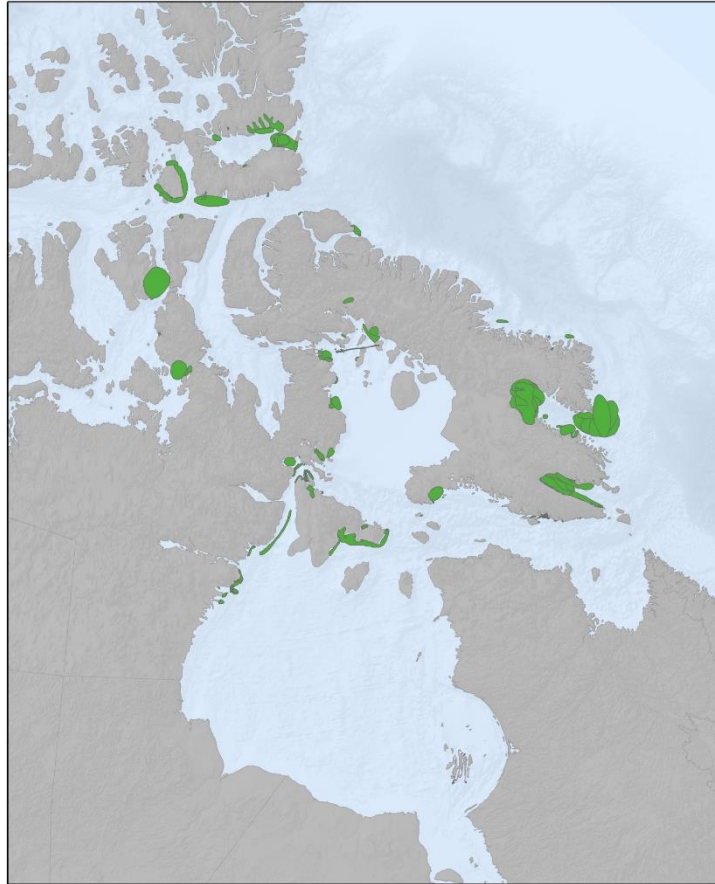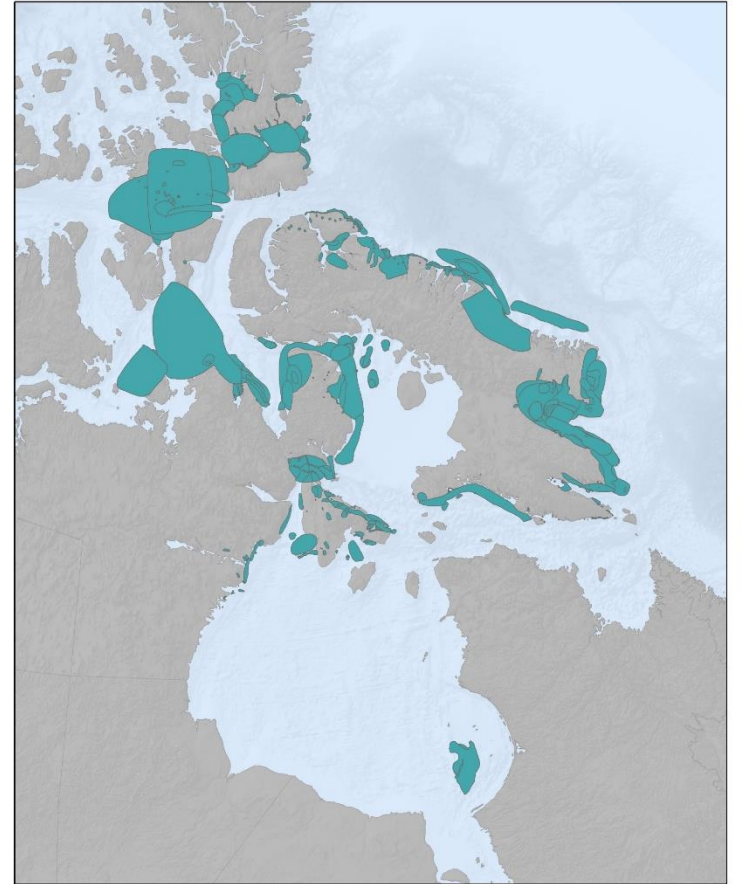
Marxan analysis: Ecological knowledge only

Arctic Char Areas   **Beluga Areas**   **Polar Bear Areas**

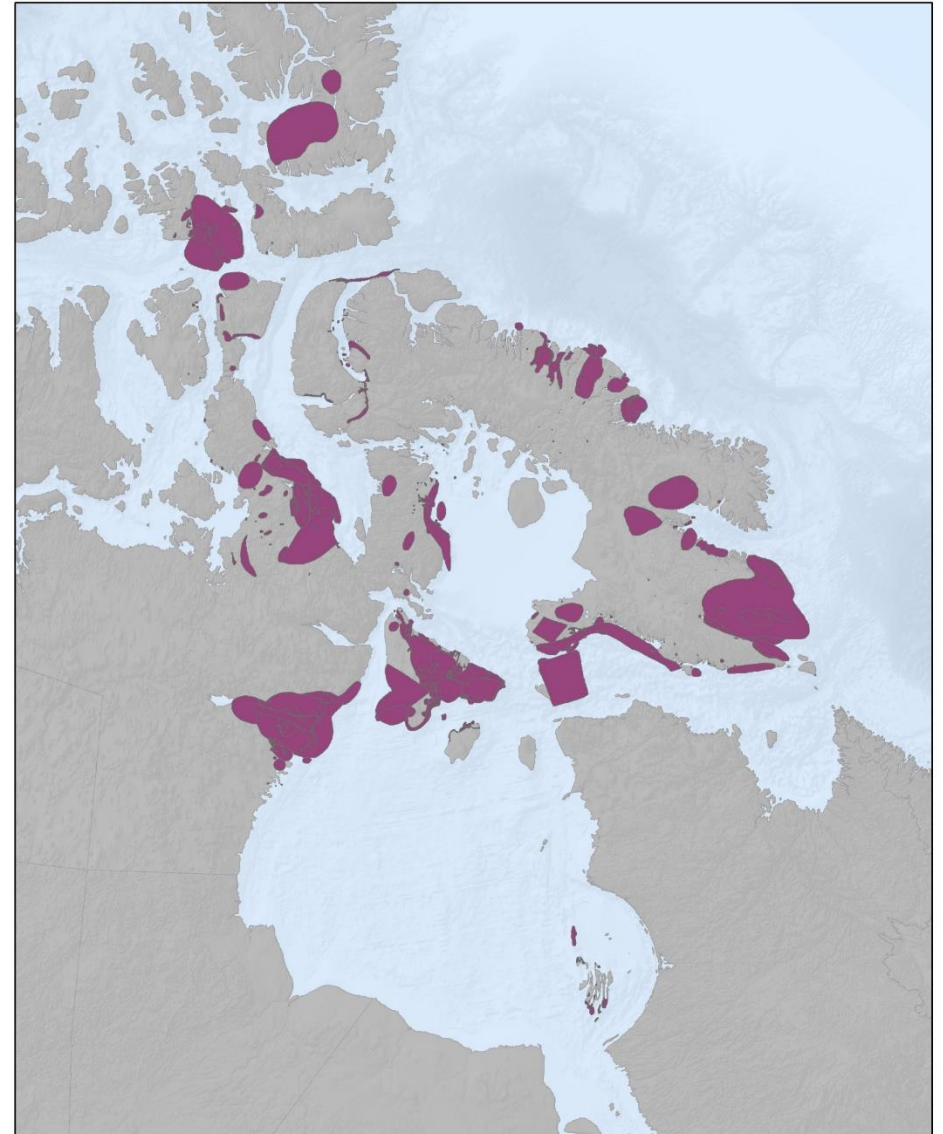**Nunavut Coastal Resources Inventory**

Post-Marxan Analysis – Ecological knowledge and local uses information

- Areas currently used by Inuit from Nunavut including hunting areas, camps, cabins, and travel routes

- Historical and archaeological sites (e.g. sod houses, historical camps, tent rings)

Local Use Areas

Nunavut Coastal Resources Inventory

Challenges/lessons learned/opportunities

Opportunities

- Engagement, participation and results from MPA network planning can help communities and Indigenous organizations plan for coastal/marine stewardship, spatial planning and conservation economies

Challenges

- Indigenous involvement throughout the process
- Data gaps
- Speaking the same language
- Complexity of MPA network planning and design
- Lack of regional and local capacity

Lessons learned and Recommendation

- Start looking for data earlier
- Share information on the project as often as possible
- Provide dedicated resources to Indigenous organizations from multiple sources