



The Pan-Arctic Marine Protected Area Network initiative and its contribution to implementing the Ecosystem Approach to Management in the Arctic

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Why PAMPAN? Why now?

1. Urgency

- Mounting pressures and few MPAs

2. Opportunity

- Unique precautionary approach
- Political momentum in some countries

3. An agreed framework

- A compelling vision



Why PAMPAN? Why now?

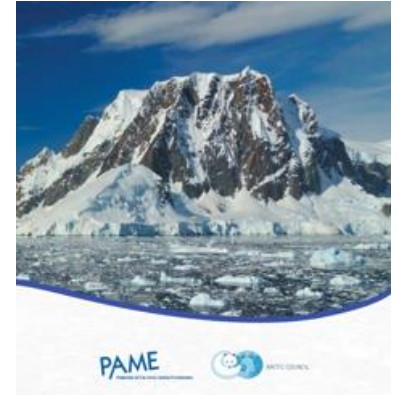
3. An agreed framework – a compelling vision

- Integrated part of EA
- Connected and representative
- Biodiversity and ecosystem services

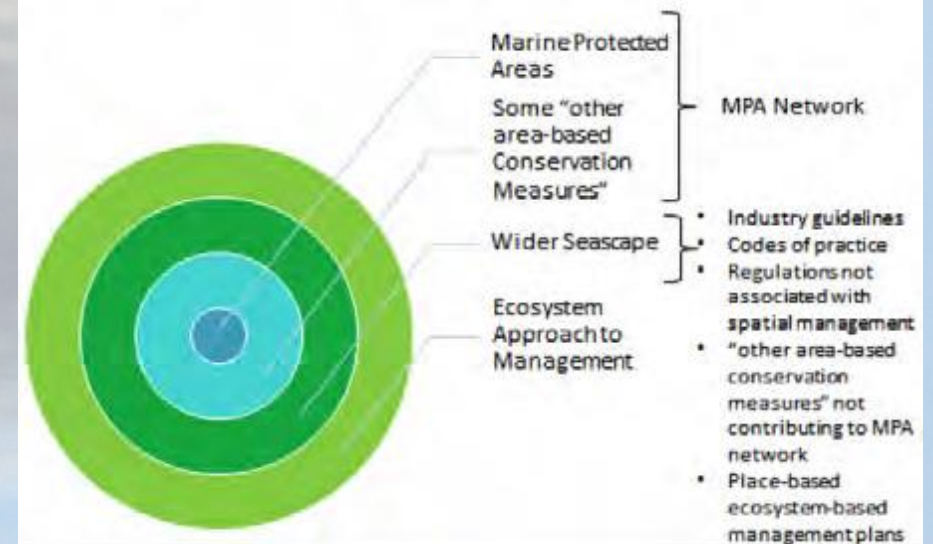
“An ecologically connected, representative and effectively-managed network of protected and specially managed areas that protects and promotes the resilience of the biological diversity, ecological processes and cultural heritage of the Arctic marine environment, and the social and economic benefits they provide to present and future generations.”

Framework for a Pan-Arctic Network of Marine Protected Areas

A Network of Places and Natural Features Specially-managed for the Conservation and Protection of the Arctic Marine Environment



MPA Networks as Part of an Ecosystem Approach to Management





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,
- to initiate and engage a community of practice in an open and inclusive process.



PAMPAN approach

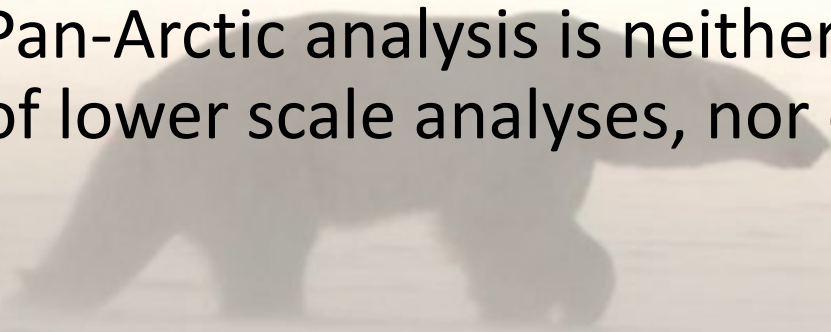
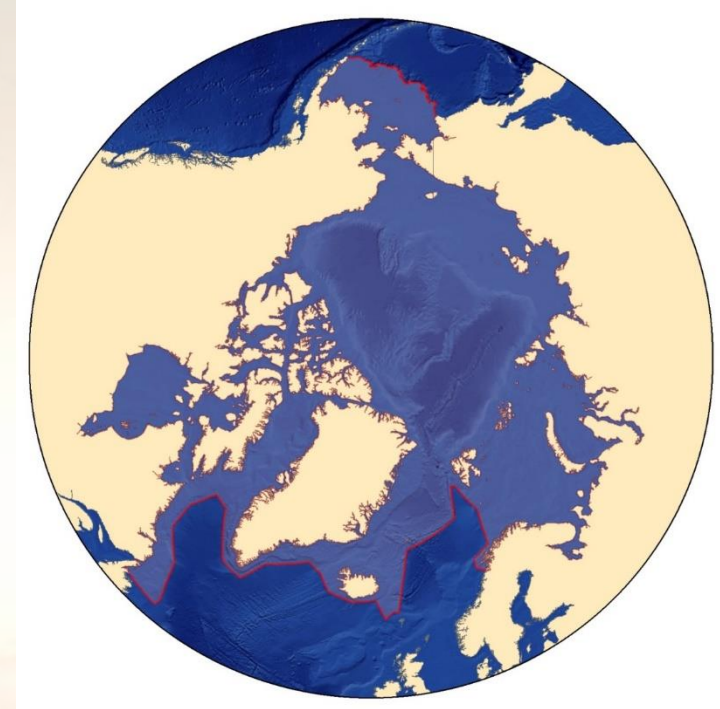
1. Pan-Arctic analysis scope
2. Systematic Conservation Planning
3. A continuing, participatory process





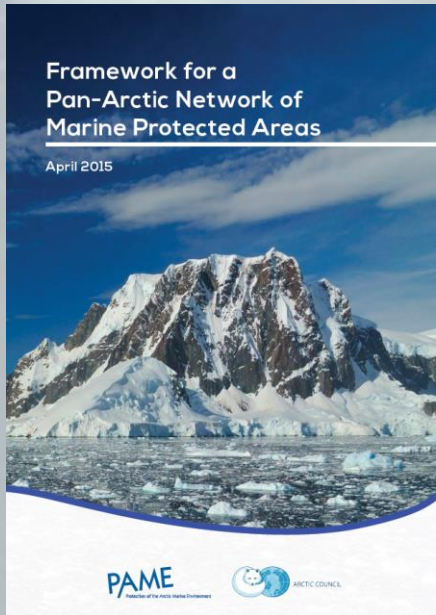
(1) Pan-Arctic analysis scope

- 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.





(2) PAMPAN and systematic conservation planning



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

Connected

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).



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

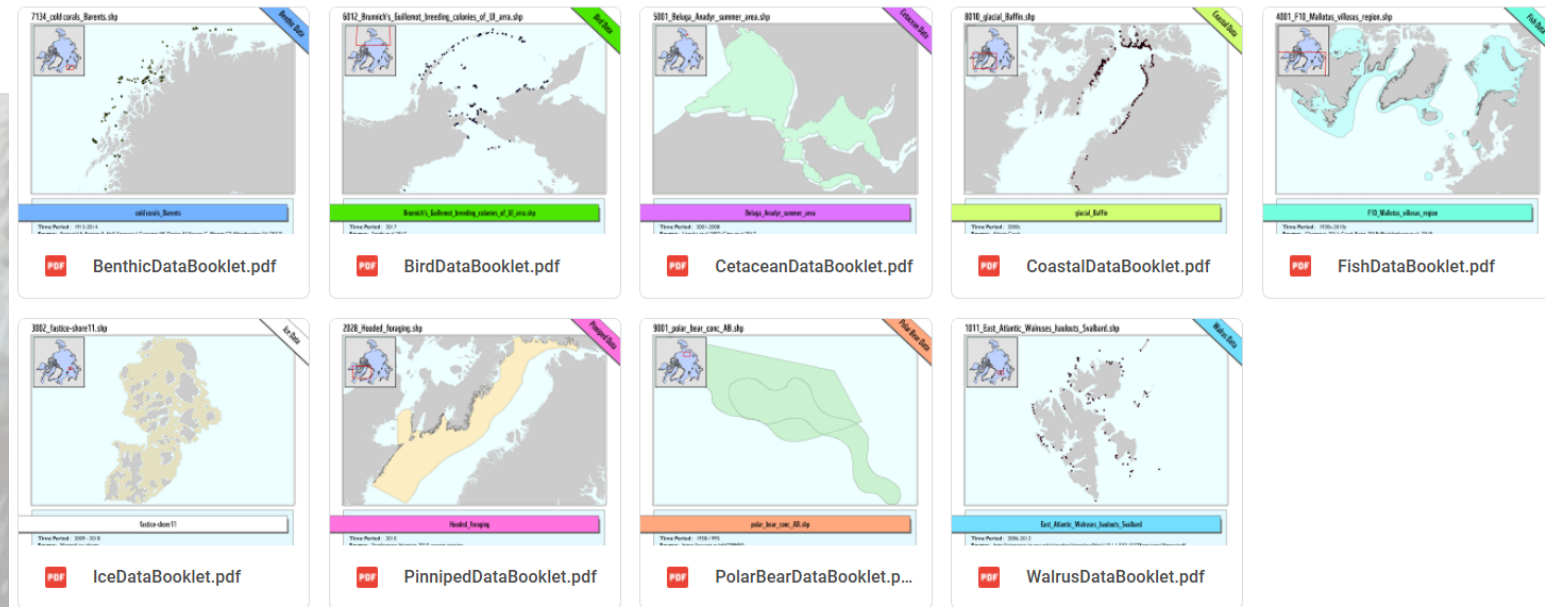


PAMPAN Themes, Data and Metadata

Six themes:

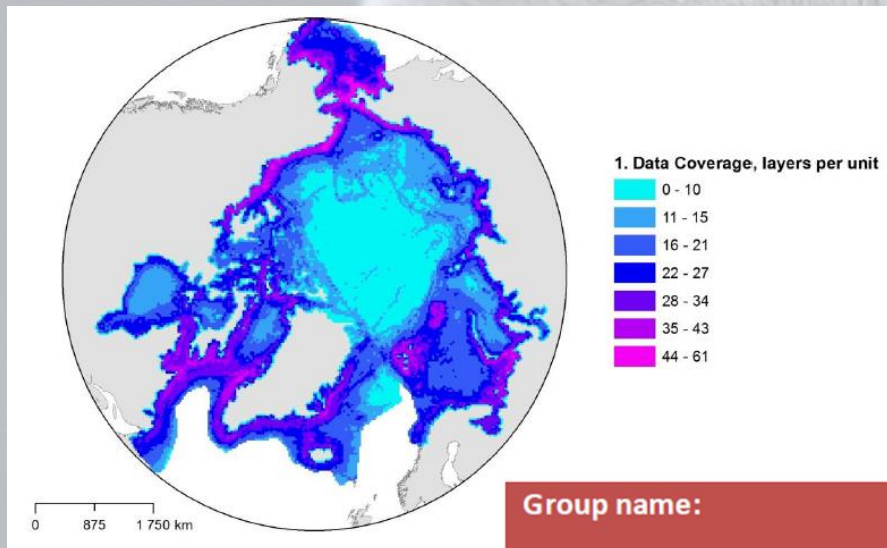
- Marine mammals (Olga Shpak / Kit Kovacs)
- Birds (Maria Gavrilov)
- Fish (Jørgen Schou Christiansen / Natalya Chernova)
- Ice habitats (Cecilie v. Quillfeldt)
- Benthos (Vassily Spiridonov)
- Coastal features (Boris Soloviev)

<https://drive.google.com/drive/folders/1aa9ciAyX7bnCg-Maljnxk4EuHJtydXcv?usp=sharing>

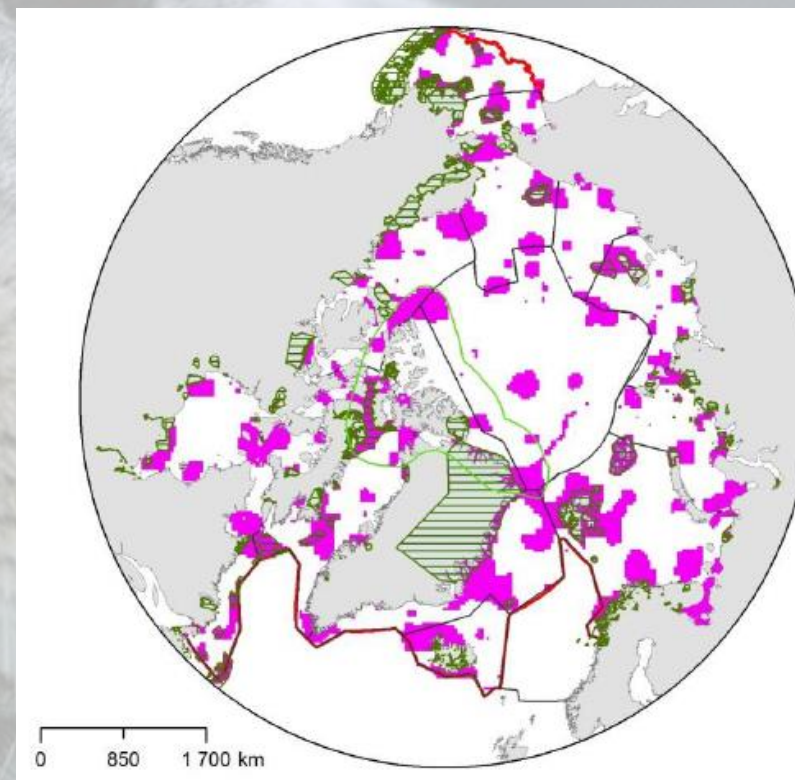




PAMPAN preliminary results



Group name:	Marxan 2.1 Num. of layers (CFs):
Marine mammal group	
• Walrus	20
• Pinnipeds	62
• Cetaceans	111
• Polar bear	38
Birds group	84
Fish group	95
Ice habitats group	77
Benthic group	250
Coastal and bottlenecks group	44
In Total:	781



Medium targets
(best solution)

- Existing protected areas
- LME borders
- PAMPAN Study Area
- 4. Best Solution**
- Example Output

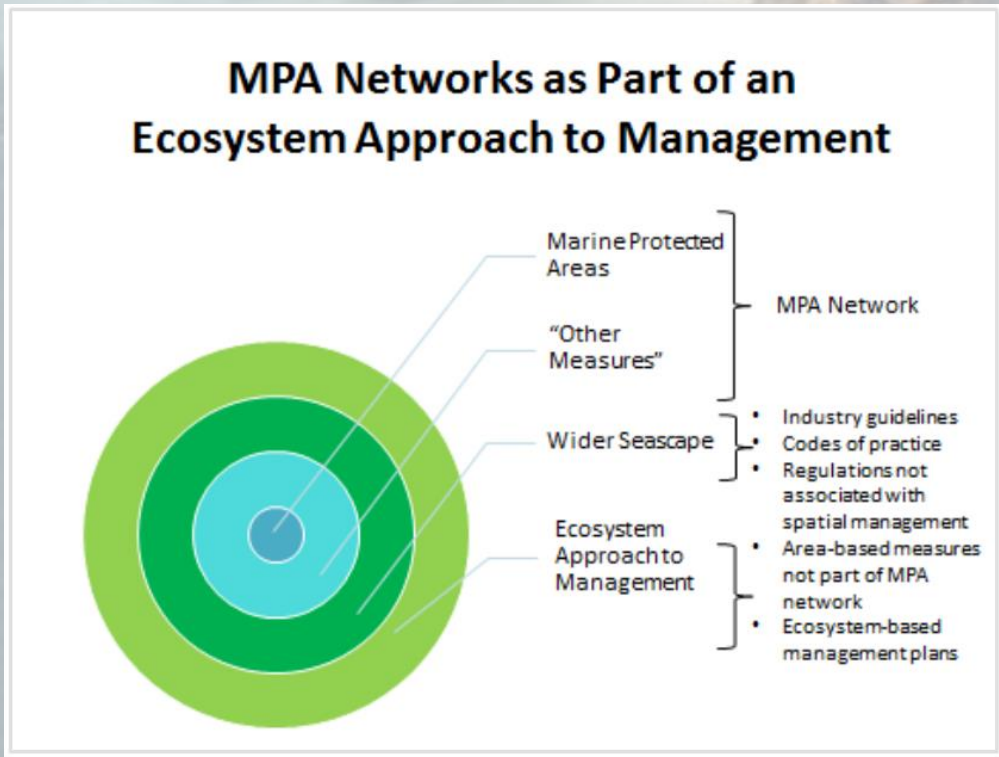
- >17 million Km²
- >18,000 planning units
- 30 x 30 km (900 km²) unit size



PAMPAN approach

1. Pan-Arctic analysis scope
2. Systematic Conservation Planning
3. **A continuing, participatory process**
 - New ground – for Arctic biodiversity and Arctic peoples
 - Participation to reflect subsistence use, cultural values, and other ecosystem services
 - Ecological connectivity
 - Feature persistence, biodiversity resilience and adaptation to climate change
 - Available (and novel) measures for efficient management of candidate sites

(3) Planning MPA networks as part of an Ecosystem Approach to Management is a continuing, participatory process



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 “specially-manage for conservation”?



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



PAMPAN – opportunities for cooperation to learn from Indigenous Knowledge

- Refine approach, data, and analyses with knowledge reflecting importance for Indigenous Peoples and communities, e.g.:
 - Indigenous knowledge to complement scientific datasets for conservation features important for subsistence and culture (e.g. spatial information of important hunting areas).
 - Create overlays between candidate sites and local uses areas to discuss synergies between indigenous management and conservation.
- Explore novel measures for effective management of candidate sites for conservation objectives



Thank you!