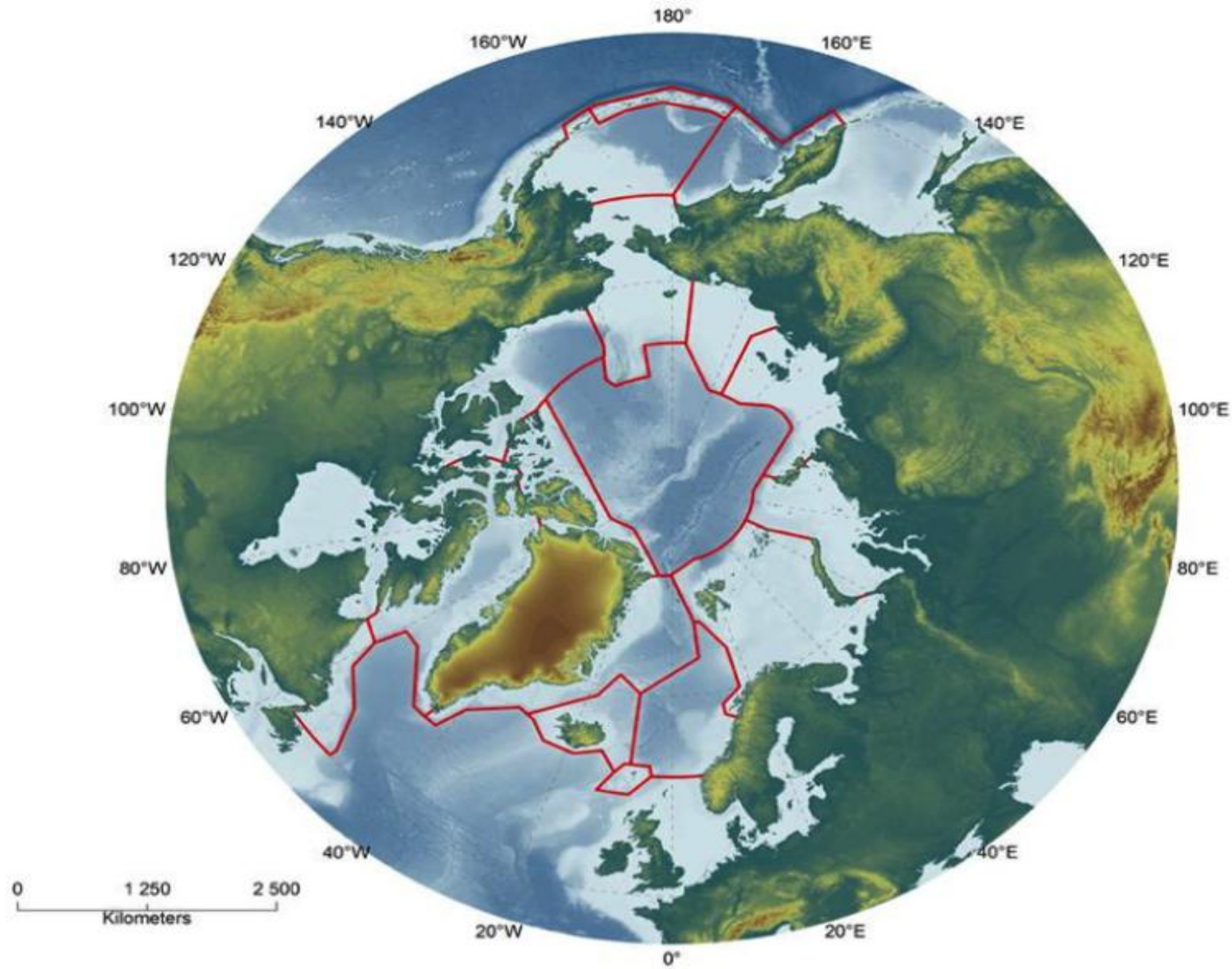


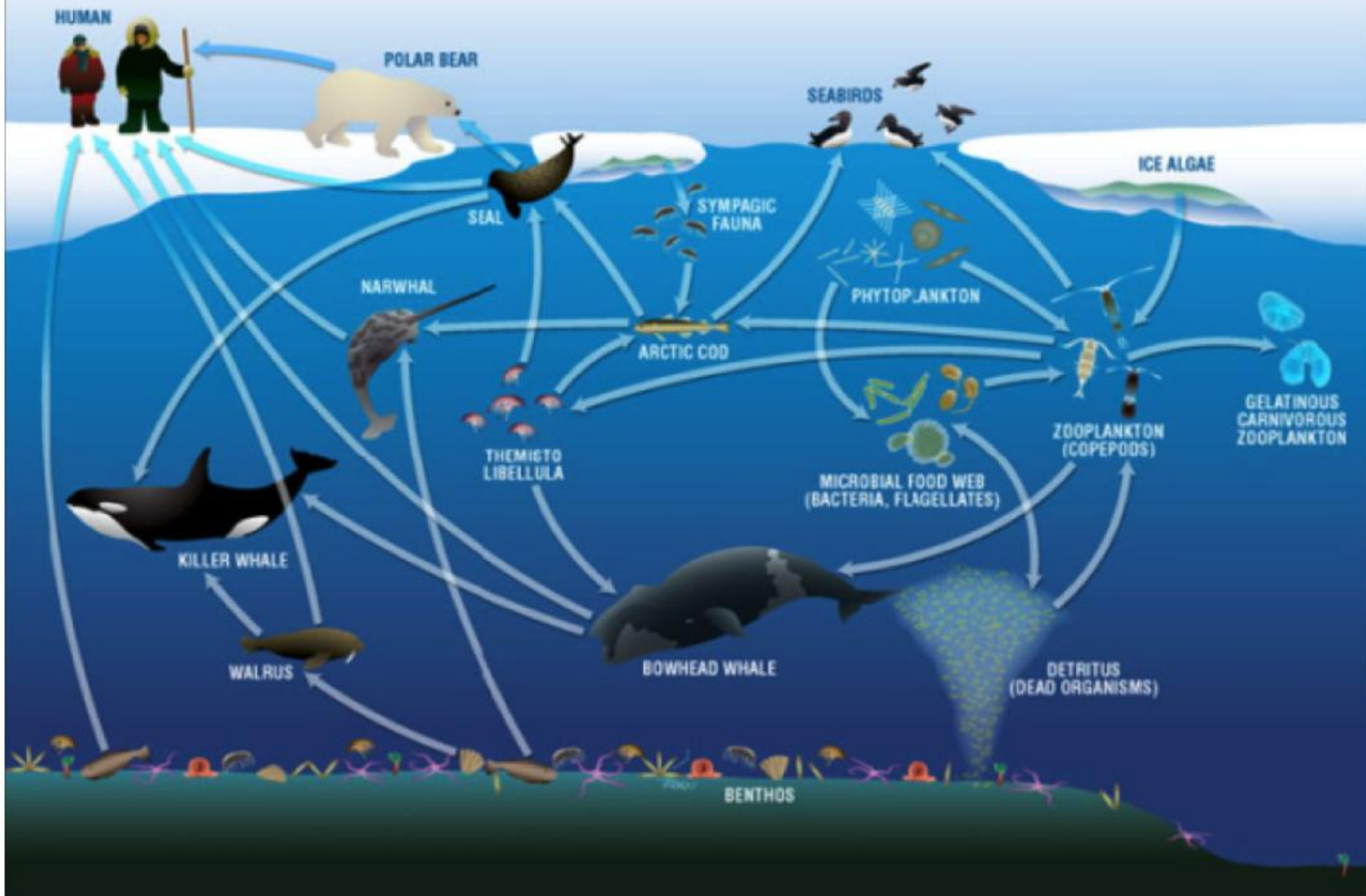


Examples of Adaptation actions in the Arctic

- Carole Martinez, IUCN, April 2016



Boundaries of Large Marine Ecosystems in the Arctic (PAME, 2013)



Example of an Arctic Marine Food Web (Adapted from Darnis et al. 2012).



Protecting biodiversity and creating multiple benefits for local communities in Greenland

Adapting the livelihoods of the indigenous hunter and fishing communities to the changed environment while at the same time ensuring protection and sustainable use of the goods and benefits provided by the Arctic ecosystems is a daunting challenge. This project aims to enhance the protection and sustainable management of marine and terrestrial resources on the part of local communities in Greenland; to strengthen the human and organisational capacity of Greenland's communities and the government to sustainably protect, manage, monitor and use natural resources; and to pilot innovative bottom-up approaches to natural resource management among local communities and the government. In addition the project encourages transboundary working on invasive species and on the impacts of climate change and it helps to lever resources, including payment for ecosystem services (PES).



Statistics and Figures

changing and the people in the Arctic are facing gas as many rely on natural resources for both and income. Successful adaptation to climate the sustainable use of resources requires observation ment.

nowledge of the environment is incomplete and scientific monitoring is logistically difficult. Local enters observe the environment all year round. Their and knowledge are, however, not consistently yzied or used for resource management.

overnment and European Commission are partners tive to pilot-test and institutionalize a simple, field- ne for monitoring and management of resources ecifically to enable Greenlandic fishers and hunters o follow trends in living resources and to propose ecisions.

ry experiences suggest that there is great interest hunters and fishers in participating in the scheme. leads to natural resource management actions ed on community members' own observations ge. There is correspondence between community eptions and professional scientists' assessments he abundance of several resources, suggesting ty-based monitoring can complement scientist- nitoring. Community-based monitoring can pin- ar species and areas that are in need of more d, at the same time, it can help link observed il changes to management action.

oted from: Danielsen, F., E. Topp-Jørgensen, M. øvermann, P. Lavstrøm, M. Schiøtz, P. Jakobsen. acounts: using local knowledge to improve Arctic agement. *Polar Geography*. In press, Dec. 2013.

of the Project

ment of Greenland is rapidly changing. The extent id snow cover is increasingly unpredictable. Many changing their distribution patterns and alien, vasive, species are turning up. Adapting the f the indigenous hunter and fisher communities ed environment while at the same time ensuring biodiversity and the sustainable use of the goods provided by the Arctic ecosystems is a daunting inoes 2009, the Government of Greenland has with communities in Disko Bay and Uummannaq Greenland to pilot the use of community-based roe monitoring as a tool for improving biodiversity and sustainable resource management. The results ising.



The government would like to scale up this initiative technically and organisationally so that community biodiversity monitoring goes beyond a critical point in terms of policy support, implementation standards, government capacity and number of communities involved, at which point this scheme will be able to continue across the country with minimal further external assistance.

The objectives of the project are (i) to enhance the protection and sustainable management of marine and terrestrial resources on the part of local communities in Greenland; (ii) to strengthen the human and organisational capacity of Greenland's communities and the government to sustainably protect, manage, monitor and use natural resources; and (iii) to pilot innovative bottom-up approaches to natural resource management among local communities and the government. The project will be carried out over a three-year period by the government, in collaboration with stakeholders at local, national and international level.

The project is well in line with the core objectives of 'BEST'. It could showcase many benefits that can be achieved through this funding scheme. The project promotes conservation and sustainable use of biodiversity and ecosystem services and focuses on coastal areas at the interface between terrestrial and marine ecosystems. The project balances conservation and development needs, takes existing conservation mechanisms and tools into account, and is based on local commitment among Greenland's communities and government.

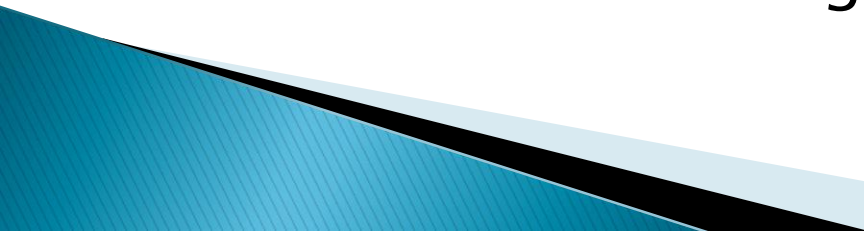
CONTACTS

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nmm@umannaq.gl



<http://youtu.be/jPg4nzQ8jI0>

BEST PISUNA project objectives

- ▶ (i) to **enhance** the protection and sustainable management of marine and terrestrial resources with local communities in Greenland;
 - ▶ (ii) to **strengthen** the human and organisational capacity of Greenland's communities and the government to sustainably protect, manage, monitor and use natural resources;
 - ▶ (iii) to **pilot** innovative bottom-up approaches to natural resource management among local communities and the government.
- 

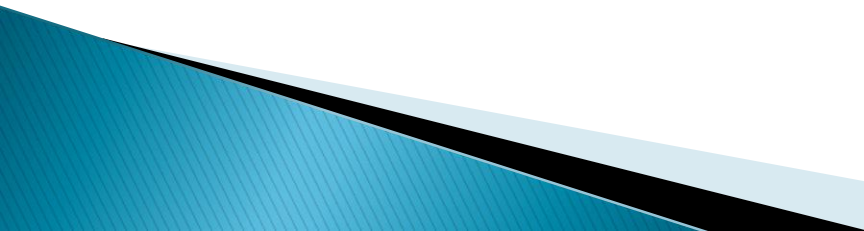


Participants to the kick-off workshop in Nuuk © Michael Køie Poulsen



In Greenland, knowledge about hunting and fisheries is transferred verbally from one generation to the next © Michael Køie Poulsen

BEST PISUNA project achievements

- ▶ Local nature resource committees (hunters, fishers, environment organisations);
 - ▶ Monitoring workshops
 - ▶ Strengthen incorporation of indigenous and local knowledge into decision-making;
 - ▶ Improved data collation by citizens and improved the species monitoring documentation and communication of findings;
 - ▶ 14 proposed management recommendations for 12 species: the setting of quotas (2), hunting seasons changes (5), regulation of fisheries through the establishment of (2) (ex: Atlantic cod fishing nets so as to reduce ship strikes and entanglement of whales in fishing gear – reduce shrimp trawling and seafloor degradation in breeding areas of spotted wolffish – and more;
 - ▶ The local municipal authorities reviewed and made decisions on these proposals.
- 

Framework for a Pan-Arctic Network of Marine Protected Areas

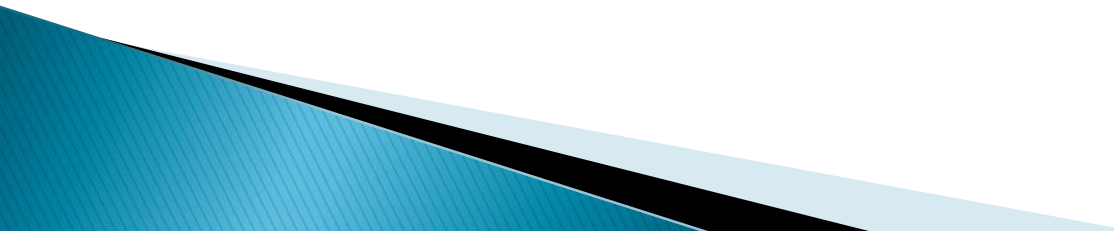
April 2015



Principles of a Pan–Arctic MPA Network (PAME, 2015)

- ▶ 5. Focus on **resilience and adaptation** to change.

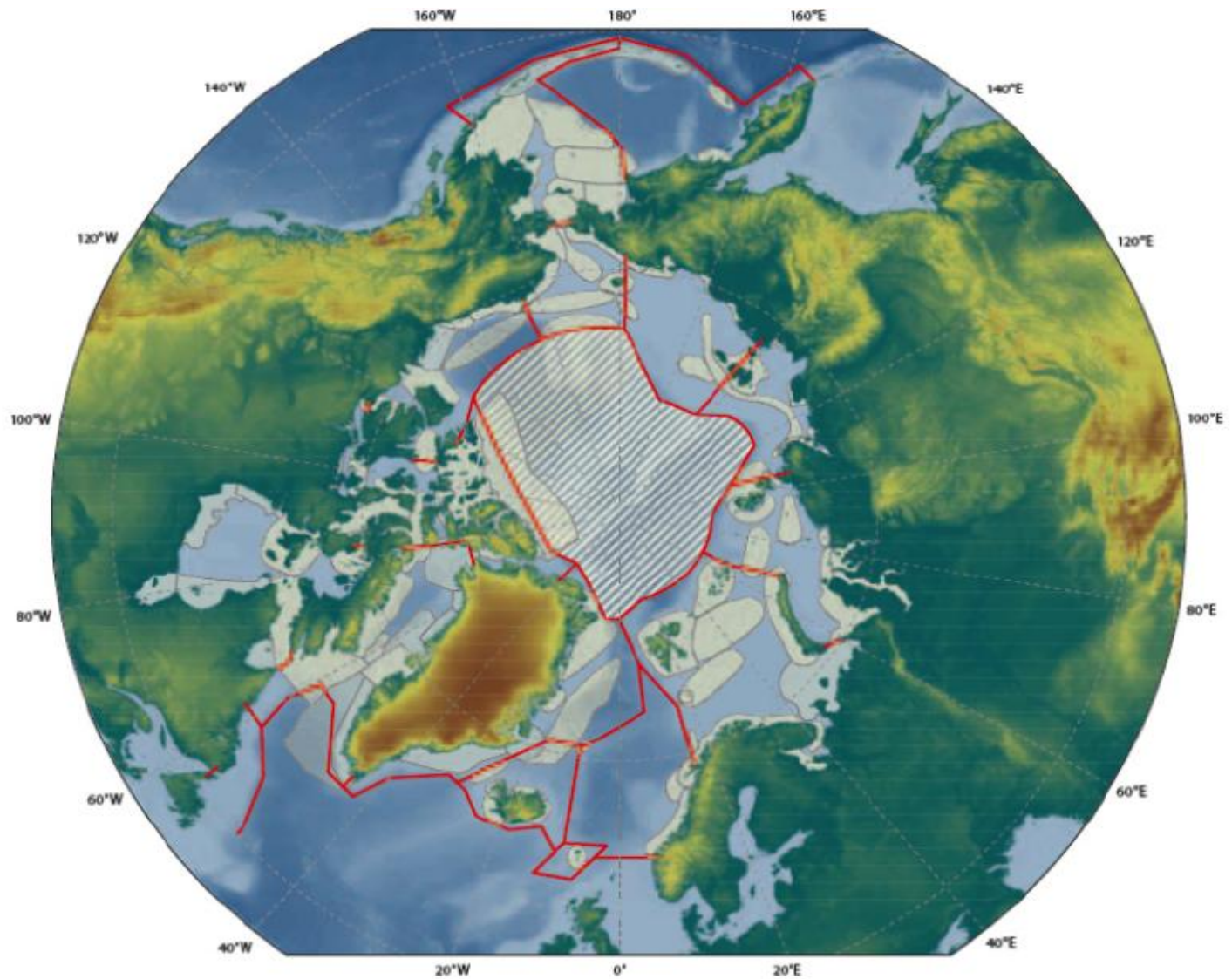
Design and strive to implement the pan–Arctic MPA network for ecological conservation and the protection of marine biodiversity in the context of actual and projected climate and other CO₂ related changes given the accelerating nature of associated impacts.



Goals of a Pan-Arctic MPA Network (PAME, 2015)

A pan-Arctic MPA network has four inter-related goals:

- ▶ 1. To **strengthen ecological resilience** to direct human pressures and to climate change impacts, to promote the **long-term protection** of marine biodiversity, ecosystem function and special natural and cultural features in the Arctic.
- ▶ 2. To support integrated stewardship, conservation and management of living Arctic marine resources and species and their habitats, and the cultural and **socioeconomic values and ecosystem services** they provide.
- ▶ 3. To enhance public awareness and appreciation of the Arctic marine environment and rich maritime history and culture.
- ▶ 4. To foster **coordination and collaboration** among Arctic States to achieve more effective MPA planning and management in the Arctic.



Map of areas of heightened ecological significance (such as areas with aggregations of fish, birds and mammals for purposes of migration, staging, breeding, feeding and resting) and boundaries of Arctic Large Marine Ecosystems (AMAP/CAFF/SDWG, 2013)

BEST

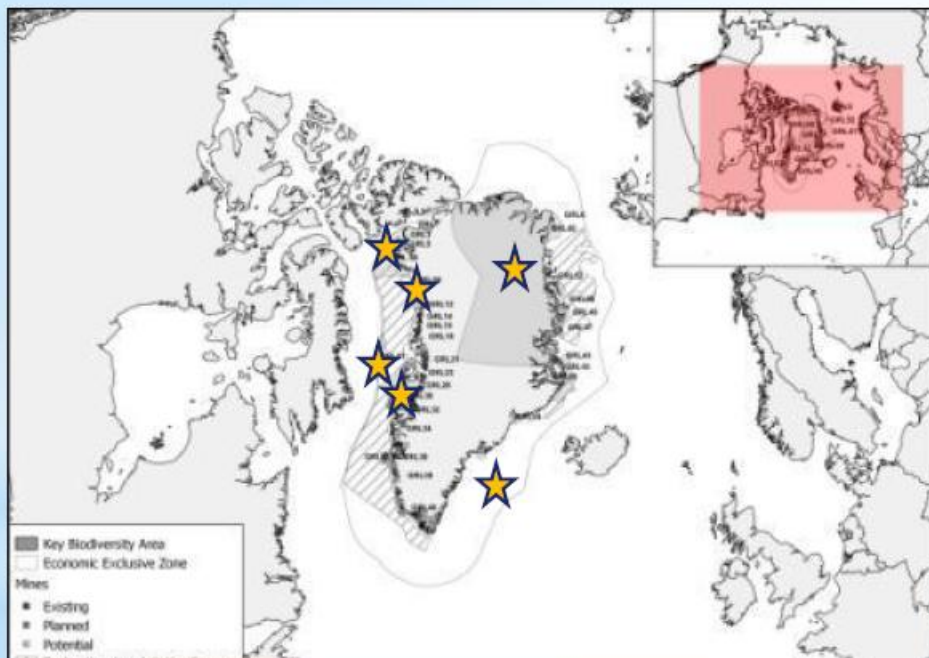
VOLUNTARY SCHEME
FOR BIODIVERSITY AND
ECOSYSTEM SERVICES
IN TERRITORIES OF
EUROPEAN OVERSEAS

Arctic / Sub-Arctic

Key biodiversity areas (KBAs)

Greenland

	Identified KBAs	Priority KBAs
Terrestrial	56	1
Marine	11	6
Total	67	7



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VOLUNTARY SCHEME
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Critical areas for action & investment needs

- Investigation of long term effects of climate change
 - in key exploited **fisheries**
 - on the **breakdown of natural barriers** (e.g. glaciers) in terrestrial systems;
- **Knowledge on invasive alien species** and eradication/control programmes
- Establishment/extension of marine protected areas (MPAs) and **protected areas** as appropriate



Greenland

Edited :

2016-04



Legend

 Greenland Exclusive Economic Zone

Data sources :

- GEBCO : Bathymetry
- VLIZ : EEZ
- FAO : Coastline

Coordinate system :
World Mercator



*Thank you for
Your kind attention*

