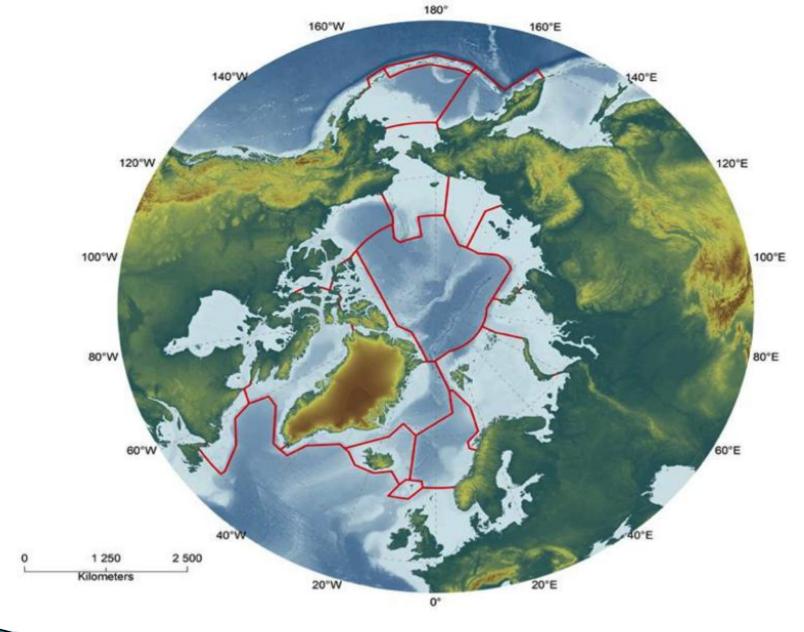
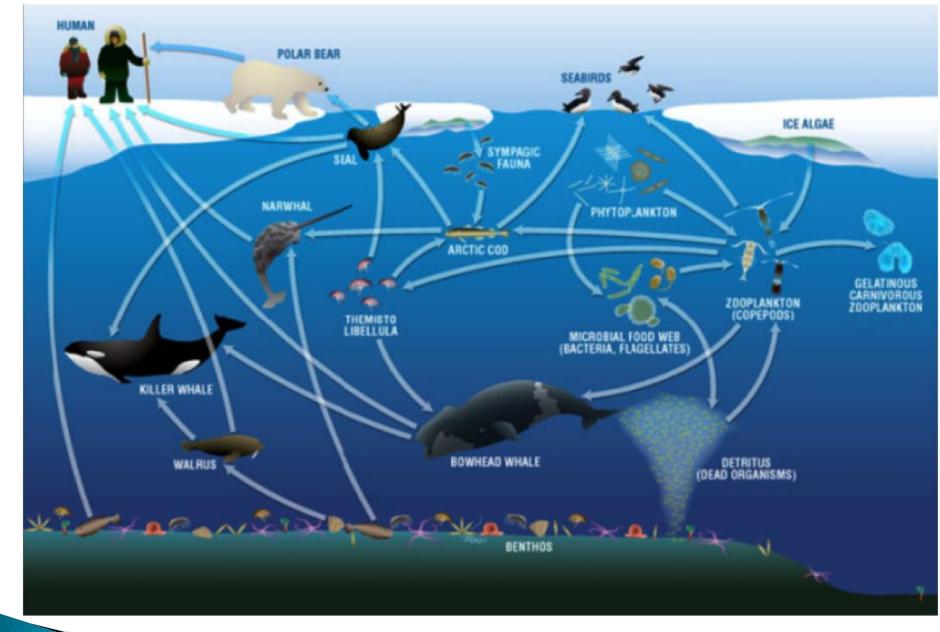


# Examples of Adaptation actions in the Arctic - Carole Martinez, IUCN, April 2016



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



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

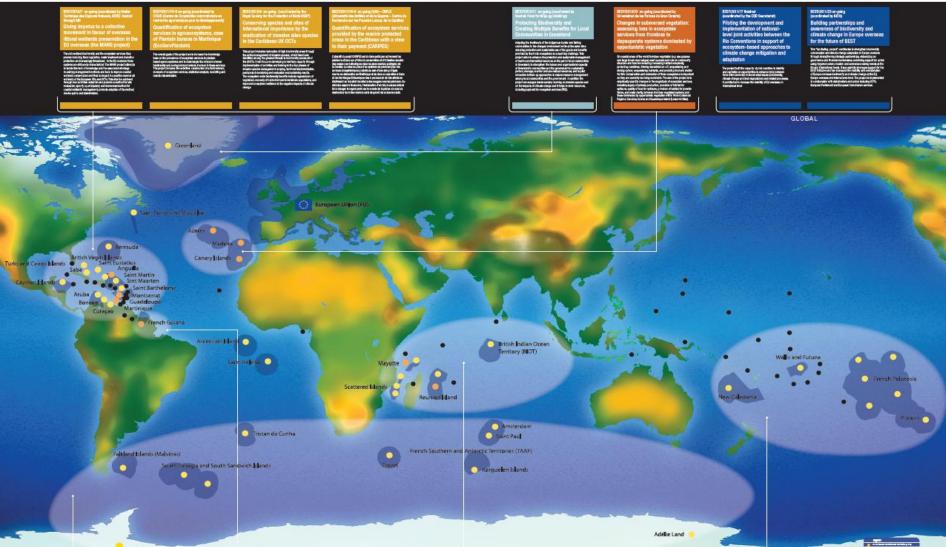


### EU BEST Initiative

Projects funded through the BEST Preparatory Action and AfD partnership in 2011 and 2012







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## 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 ecceystems is a daurning 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 pict innovative bottom-up approaches to natural resource management among local communities and the government. In addition the project emocurages transboundary working on invasive species and on the impacts of climate change and it helps to lever resources, including payment for coosystem services (PES).



#### Statistics and Figures

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

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

overnment and European Commission are partners stive to pilot-test and institutionatize a simple, fieldne for mornisting and management of resources ecitically to enable Greenlandic fahers and hunters o follow trends in fiving resources and to propose t decisions.

by experiences suggest that there is great interest bursters and fishers in participating in the scheme. leads to natural resource management actions sed on community members' own observations get. There is correspondence between community receptions and professional scientists' assessments the abundance of several resources, suggesting hity-based monitoring can complement scientist-professional community-based monitoring can pinture appears and areas that are in need of more 1, at the same time, it can help link observed all changes to management action.

cted from: Danielsen, F., E. Topp-Jargensen, M. Levermann, P. Lavstram, M. Schiatz, P. Jakobsen. at counts: using local knowledge to improve Arctic lagement. Polar Geography In press, Dec. 2013.

#### f the Project

sent of Greenland is repidly changing. The extent of snow cover is increasingly unpredictable. Many changing their distribution patterns and alien, wasive, species are turning up. Adepting the fifth indigenous hunter and fisher communities get environment while at the same time ensuring biodiversity and the sustainable use of the goods provided by the Arctic ecosystems is a disurring ince 2009, the Government of Greenland has with communities in Disko Bay and Ummannaq Greenland to plot the use of community-based one monitoring as a tool for improving biodiversity and sustainable resource management. The results vising.



The government would like to scale up this initiative technically and organisationally so that community biodiversity moritoring 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 presistance.

The objectives of the project are (i) to enhance the protection and sustainable management of matine and terrestrial resources on the part of local communities in Greenland; (ii) to strengthen the human and organisational capacity of Greenlands communities and the government to sustainably protect, manage, moritor and use natural resources; and (ii) to plot 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 stak-holders 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 autosinable use of biodiversity and ecosystem services and an marine ecosystems. The project belances 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

Nette Levermann and Nuka Meller Lund aprinthnance, gi



## 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

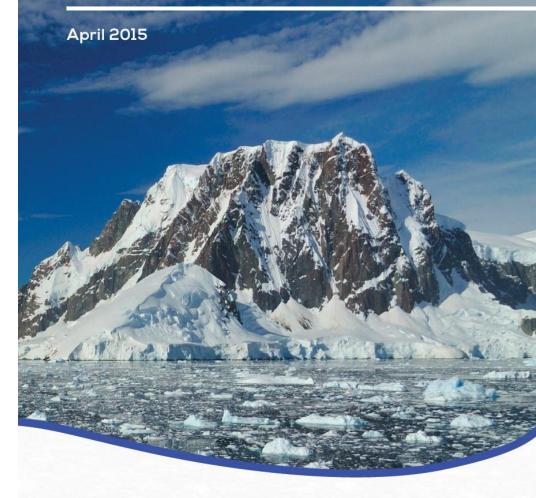


In Greenland, knowledge about hunting and fisheries is transferred verbally from one generation to the next © Michael Køle Poulsen

### BEST PISUNA project achievements

- Local nature resource committees (hunters, fishers, environment organisations);
- Monitoring workshops
- Strengthen incorporation of indigenous and local knowledge into decisionmaking;
- 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







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

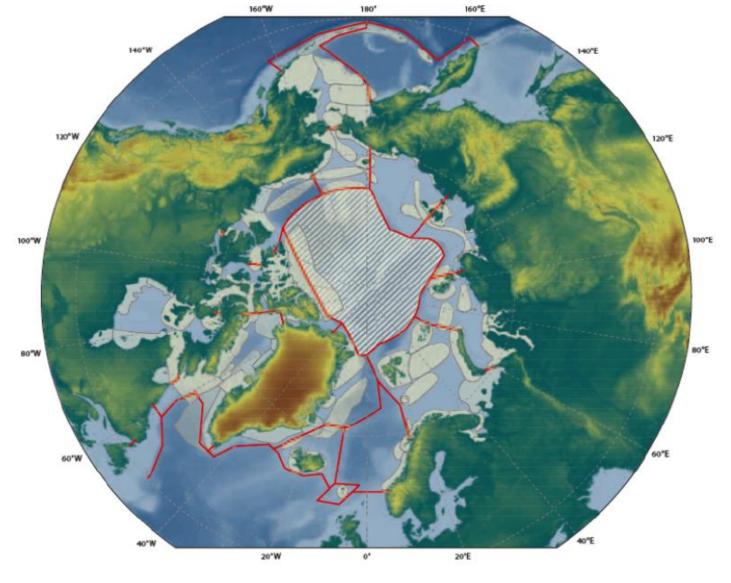
5. Focus on resilience and adaptation to change.

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)

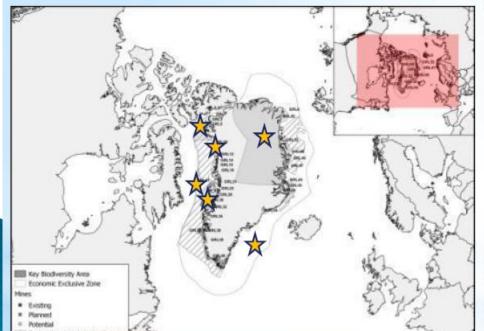


## **Arctic / Sub-Arctic**

### Key biodiversity areas (KBAs)

Greenland

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







### **Arctic / Sub-Arctic**

#### 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 <u>invasive alien species</u> and eradication/control programmes
- Establishment/extension of <u>marine protected areas</u>
   (MPAs) and protected areas as appropriate

#### Legend

Greenland Exclusive Economic Zone

Data sources:

- GEBCO : Bathymetry

- VLIZ : EEZ - FAO : Coastline

Coordinate system : World Mercator

