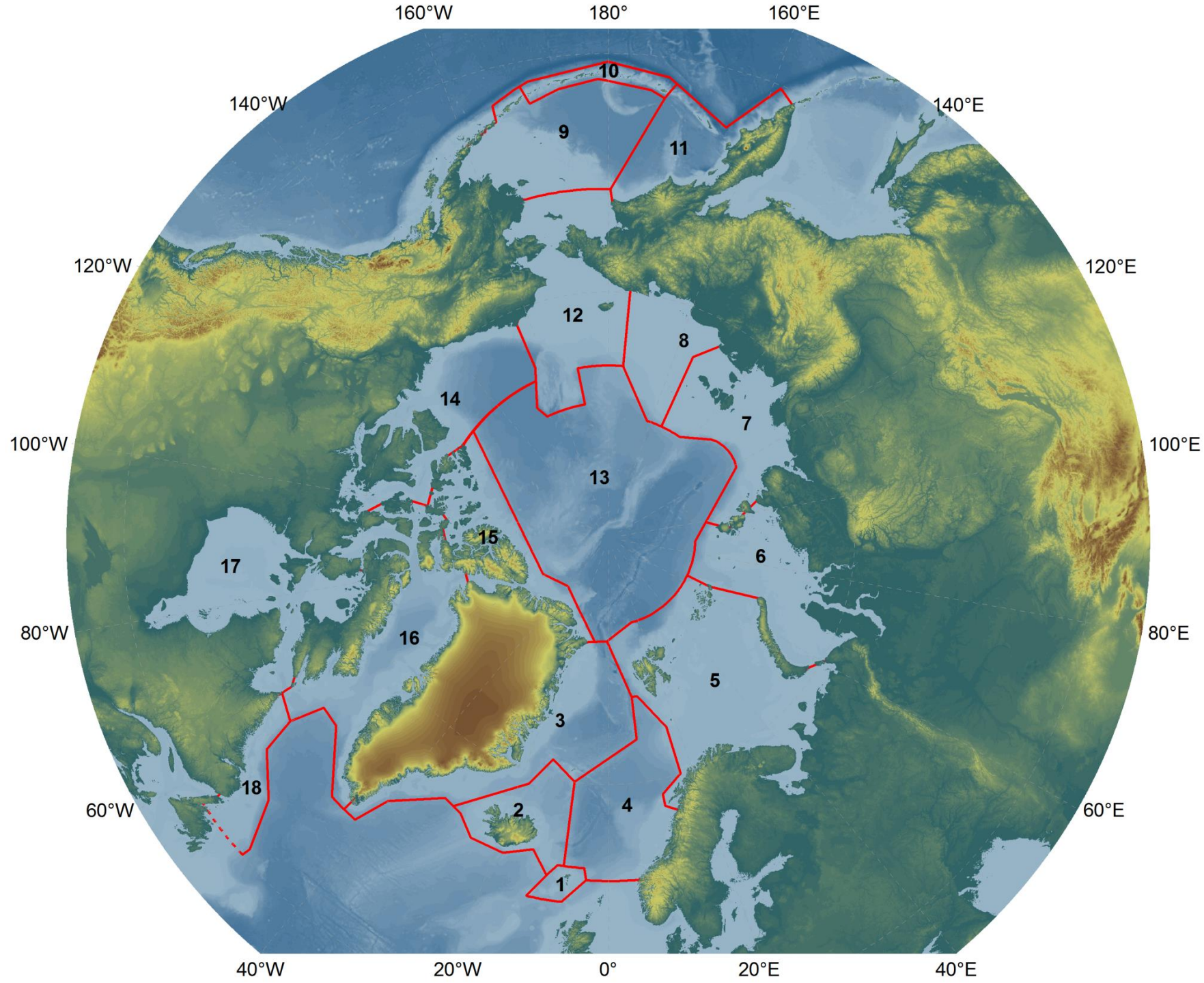


Description of Arctic species and
Arctic LMEs – integrating
information on species and habitats

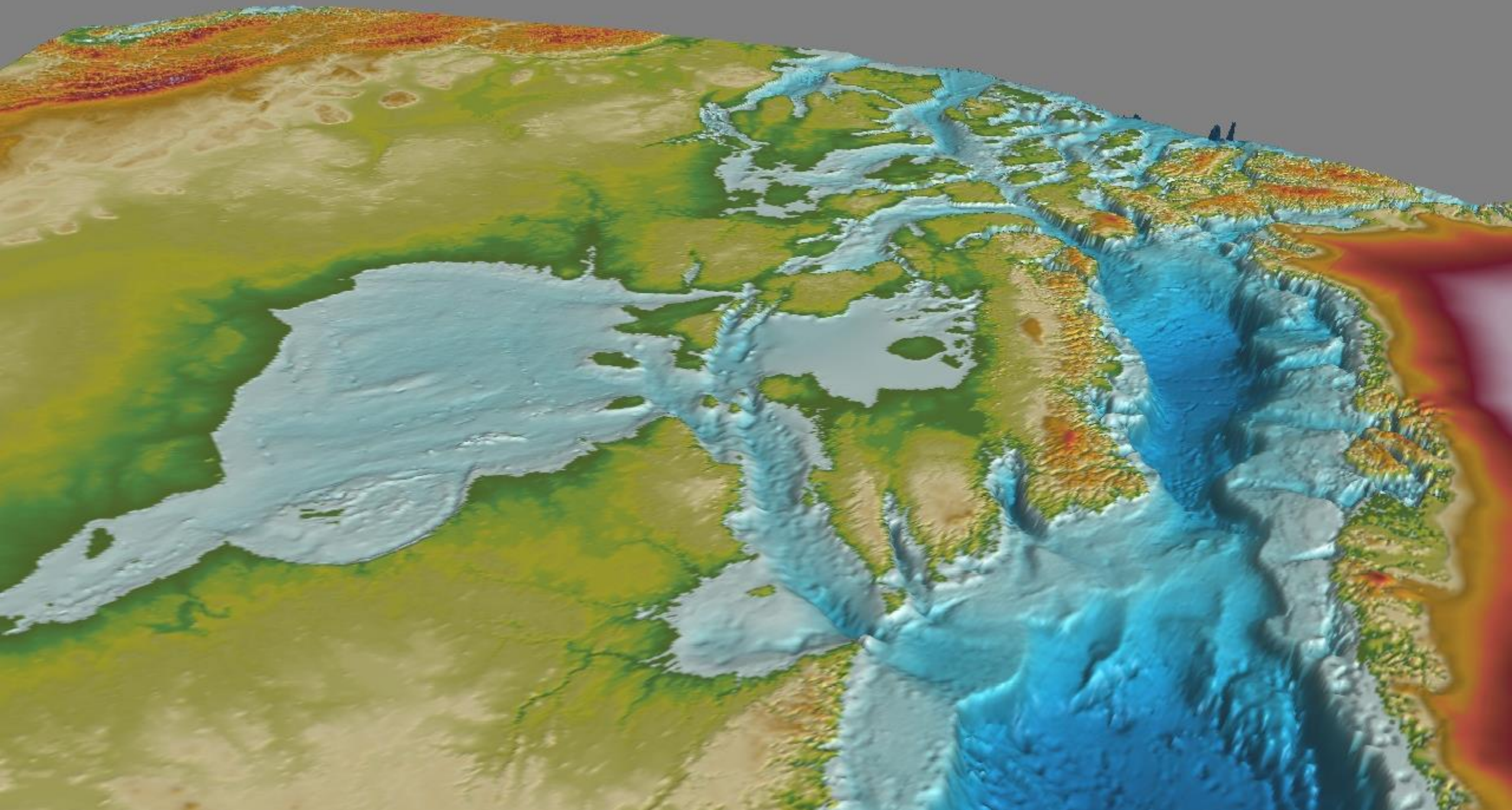
Hein Rune Skjoldal - IMR, Norway

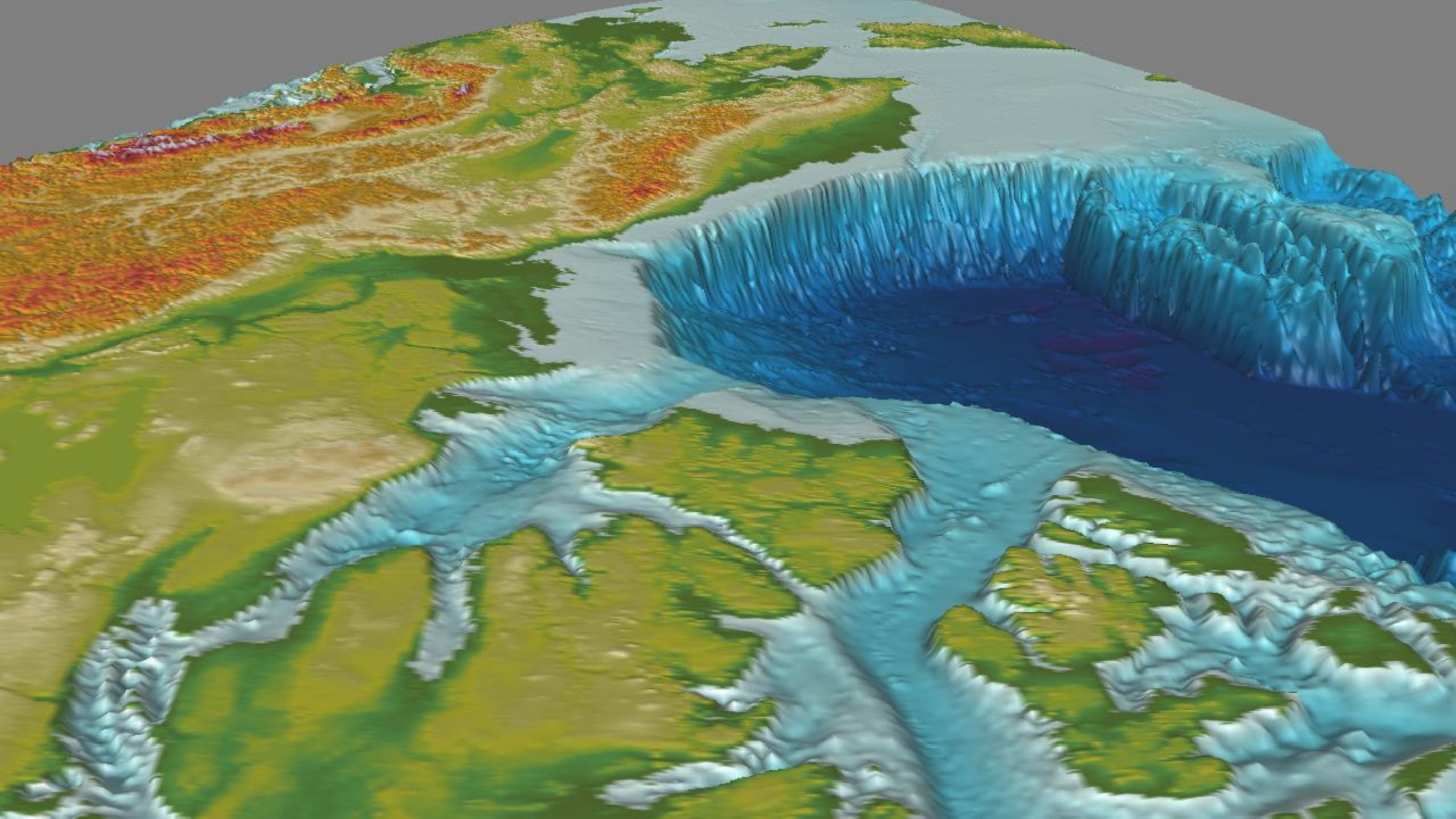
Editors: Janet Pawlak and Carolyn Symon - AMAP



Criteria:
Bathymetry
Oceanography
Productivity
Trophic linkages

18 Arctic
**Large Marine
Ecosystems -
LMEs**





Number of species in the Arctic

- 35 marine mammals – 21 whales, 11 pinnipeds, polar bear, sea otter
- Ca 200 birds – seabirds, waterfowl, shorebirds
- Ca 750 fishes
- Several thousand benthos species
- 100s-1000s plankton species

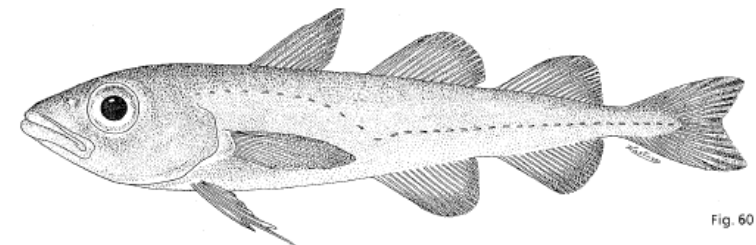
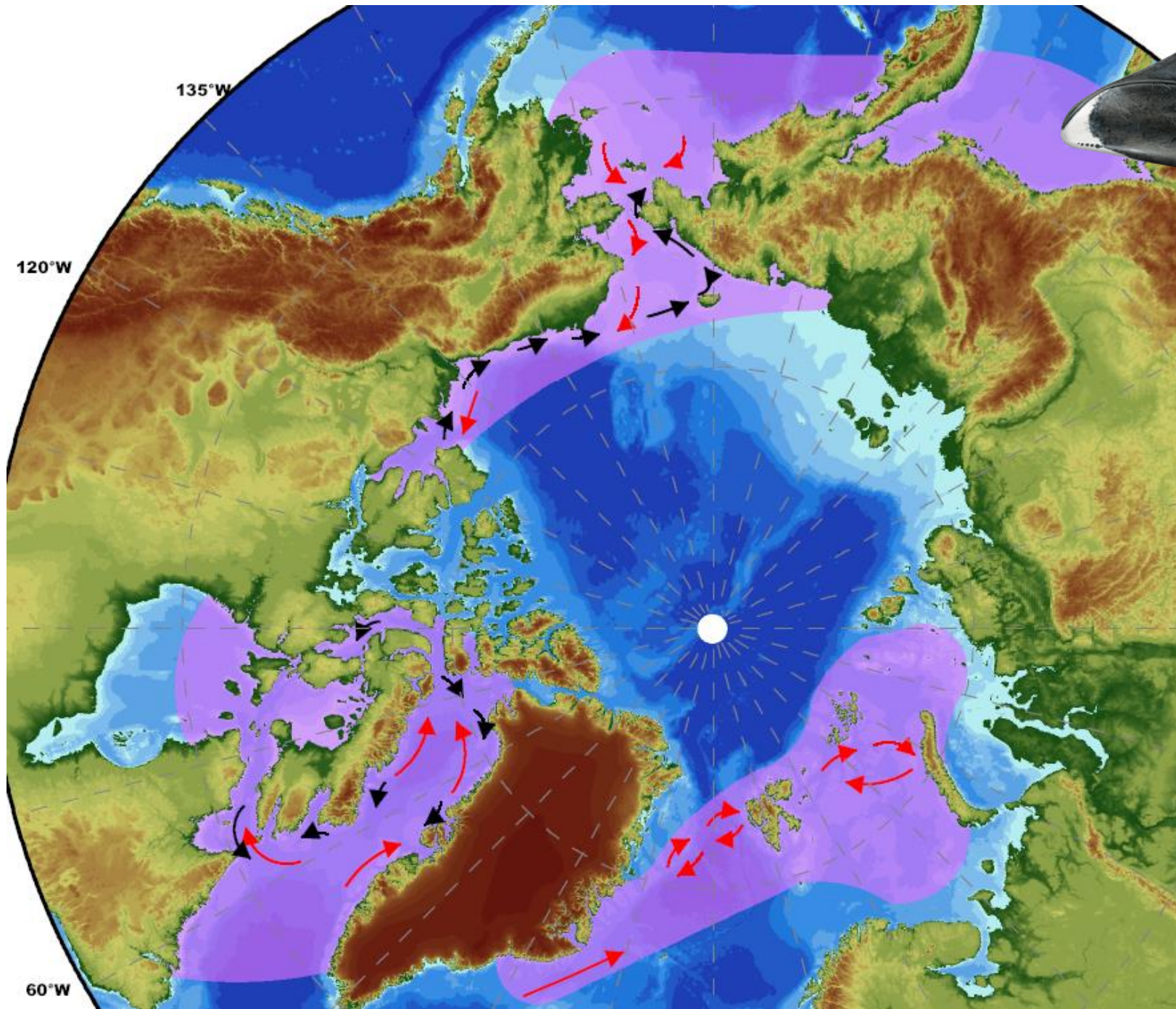


Fig. 60

Subspecies and populations

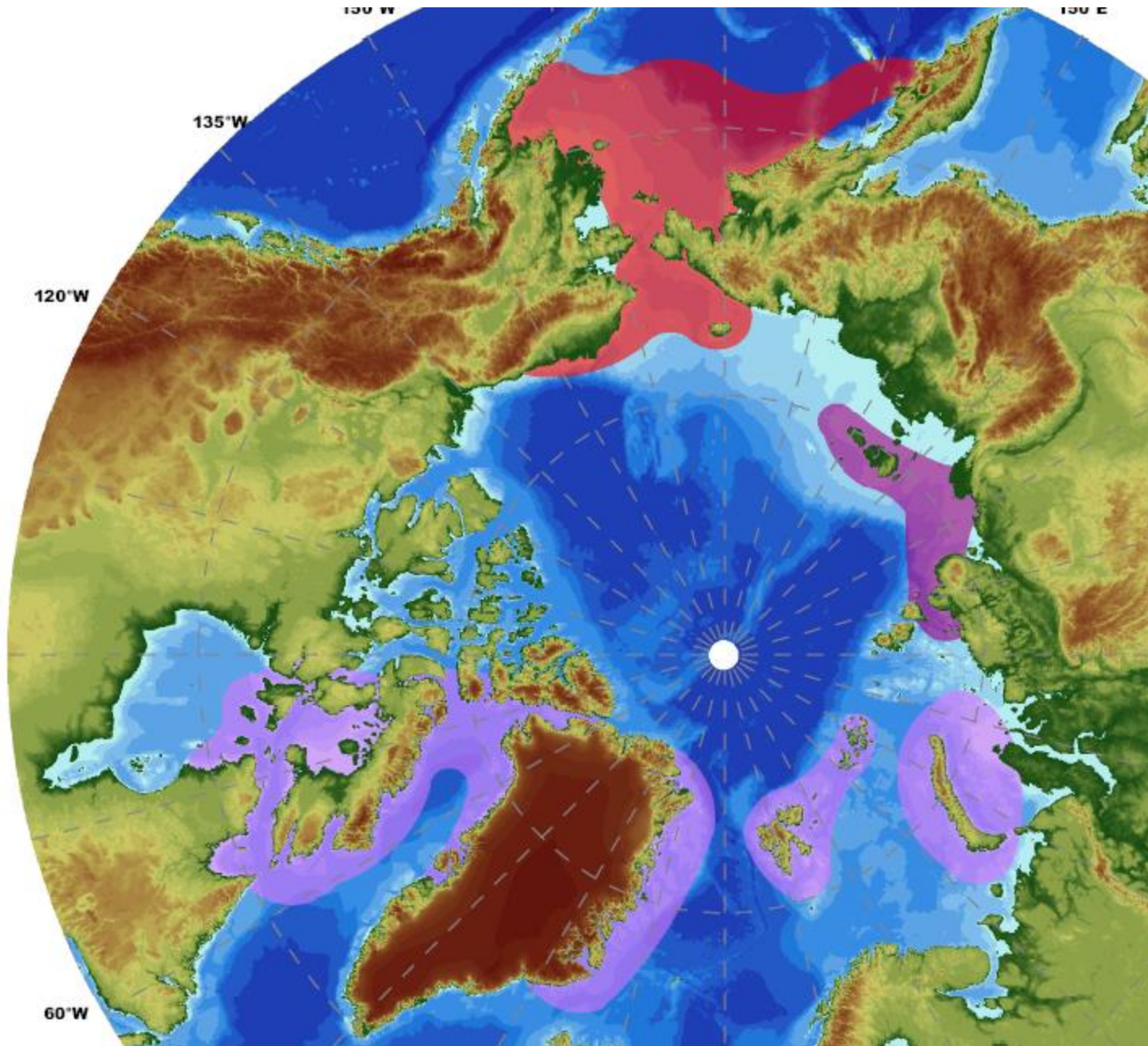
- Different forms or races of a species – species are not homogenous but have considerable variation, sometimes structured geographically into subspecies
- Examples:
- Ringed seal
 - Arctic subspecies
 - Baltic Sea, Sea of Okhotsk, Lake Ladoga, Lake Saimaa
- Polar bear – 19 subpopulations
- Brown bear and wolf – 20-30 subspecies each, some made extinct





Bowhead whale

- * Okhotsk Sea
- * Bering-Chukchi-Beaufort stock
- * Eastern Canada-West Greenland
- * Spitsbergen



Walrus

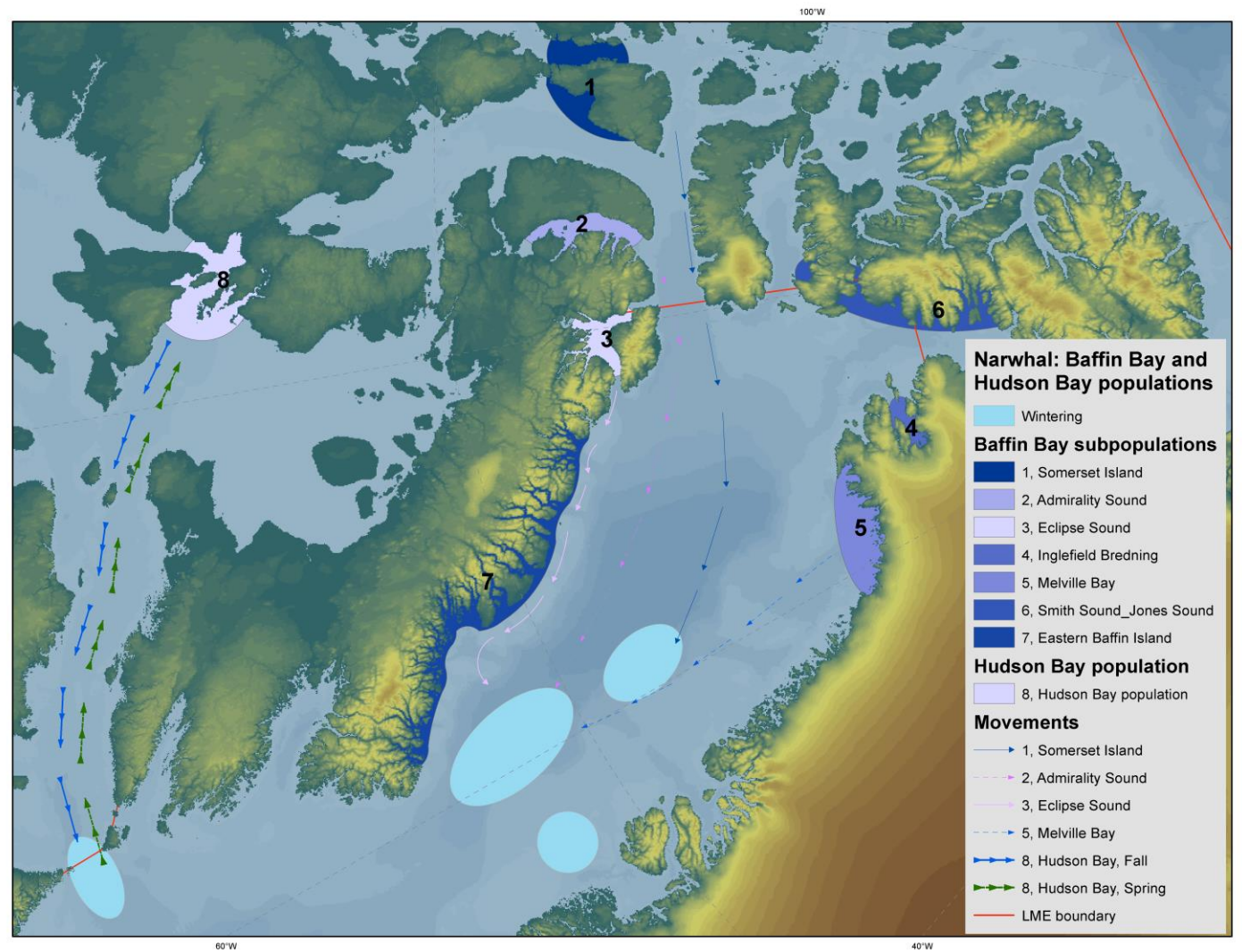
Atlantic – ca 8 stocks

Pacific

Laptev



Narwhal



Arctic Oil and Gas 2007



Arctic Council
**Arctic Marine Shipping
Assessment 2009 Report**



AMAP

ASSESSMENT 2007

*Oil and Gas Activities in the Arctic –
Effects and Potential Effects*

Volume One

1



Identification of Arctic marine areas of heightened ecological and cultural significance:

Arctic Marine Shipping Assessment (AMSA) IIc



AMSA IIC - Types and use of areas

Fish

- Spawning
- Nursery
- Wintering

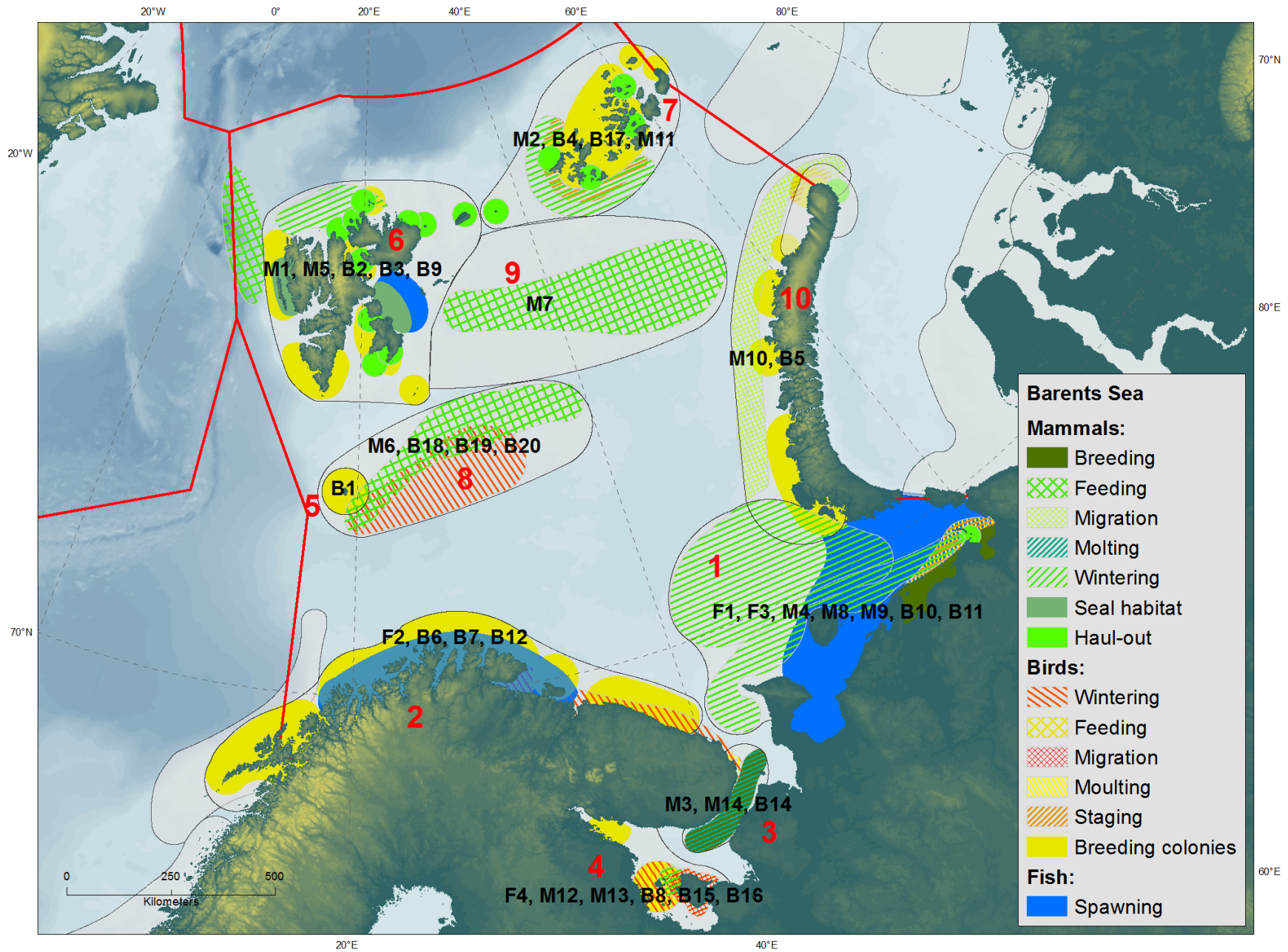
Birds

- Spring staging
- Breeding
- Feeding
- Moulting

- Fall staging
- Wintering

Marine mammals

- Migration
- Breeding
- Feeding
- Resting
- Wintering



Description of Arctic species and LMEs

- H.R. Skjoldal et al.
- Descriptions of Arctic marine species and ecosystems – baseline information for assessments of impacts of climate change and human activities. Arctic Monitoring and Assessment Programme (AMAP) and Institute of Marine Research, Norway.
- Part I – General, pan-Arctic
- Chapters on Oceanography, plankton, benthos, fish, birds, mammals
- Part II – Arctic LMEs
- Sections on geography/topography, oceanography, plankton, benthos, fish, birds, mammals
- All species of mammals and birds, most species of fish, main species of benthos and plankton

