Arctic biodiversity, climate and food security

POLICY BRIEFING

EU Polar Cluster

ECOTIP

FACE-IT Arctic Biodiversity & Livelihoods

CHARTER

Welcome

John Bell

Director Healthy Planet, DG for Research & Innovation

Life on land, in the ocean and in the fjords: Climate services and food security

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Shifting social-ecological systems and biodiversity in a warming Arctic

CHARTER: Drivers and Feedbacks of Changes in Arctic Terrestrial Biodiversity

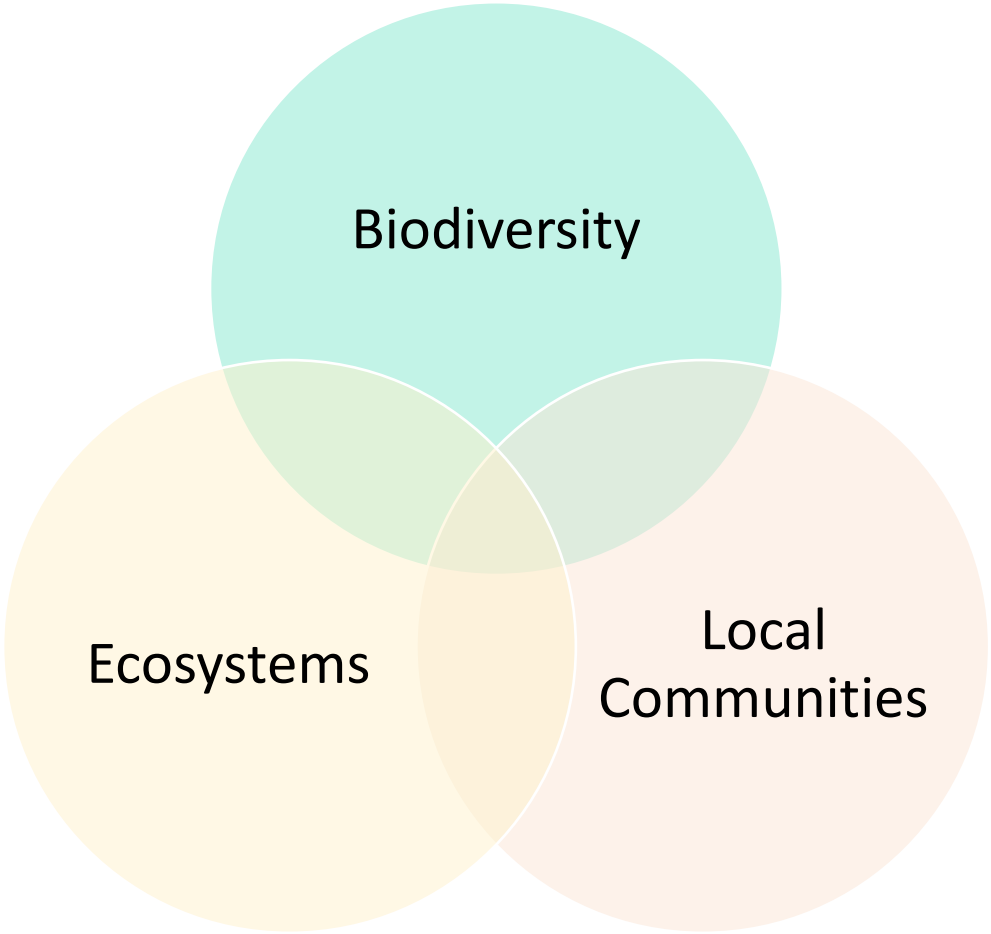
Dr Mariana García Criado, University of Edinburgh

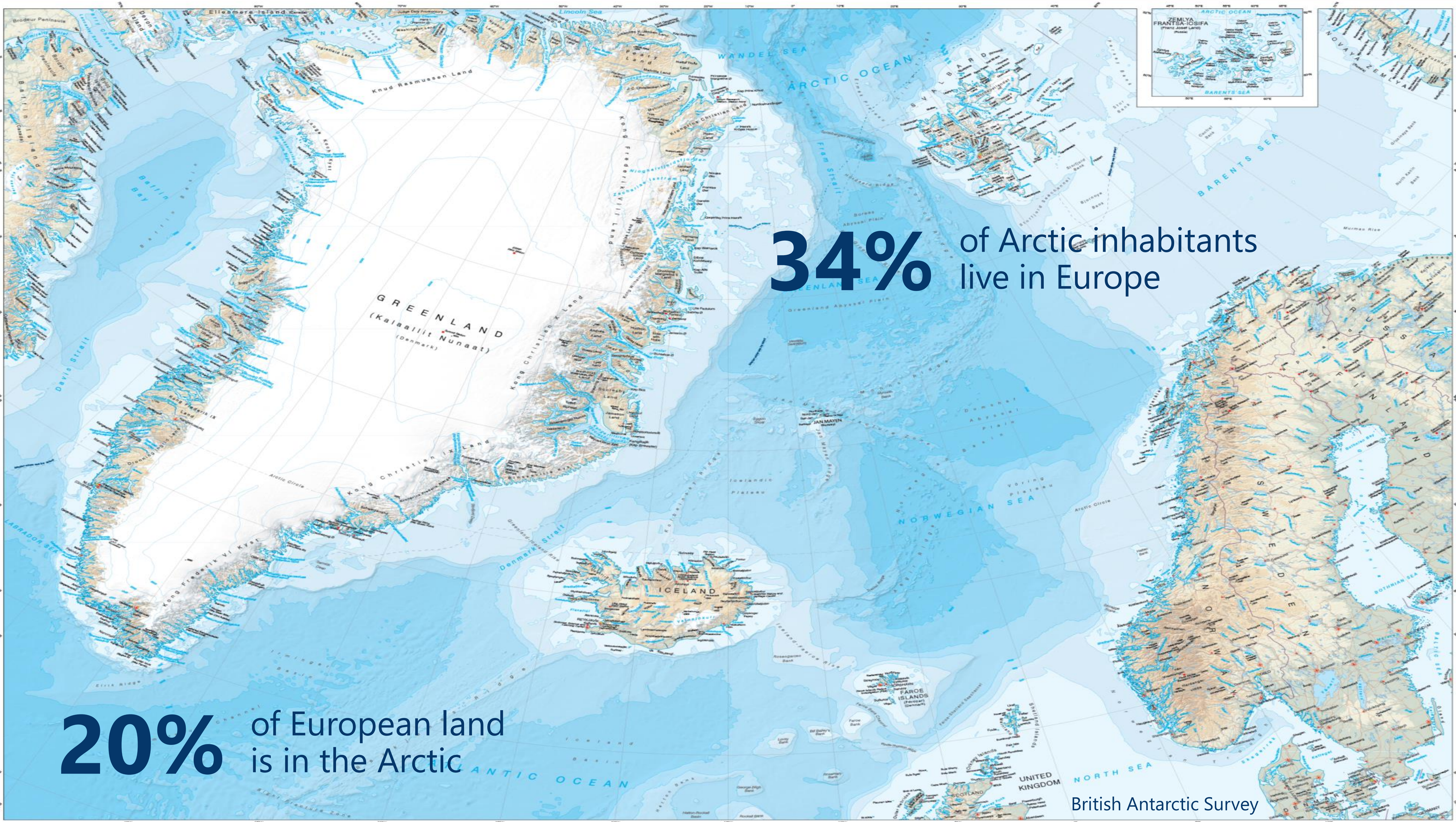
Arctic Policy Briefing

Brussels, 15th March 2023

Jeff Kerby

CHARTER advances the adaptive capacity of Arctic ecosystems and communities



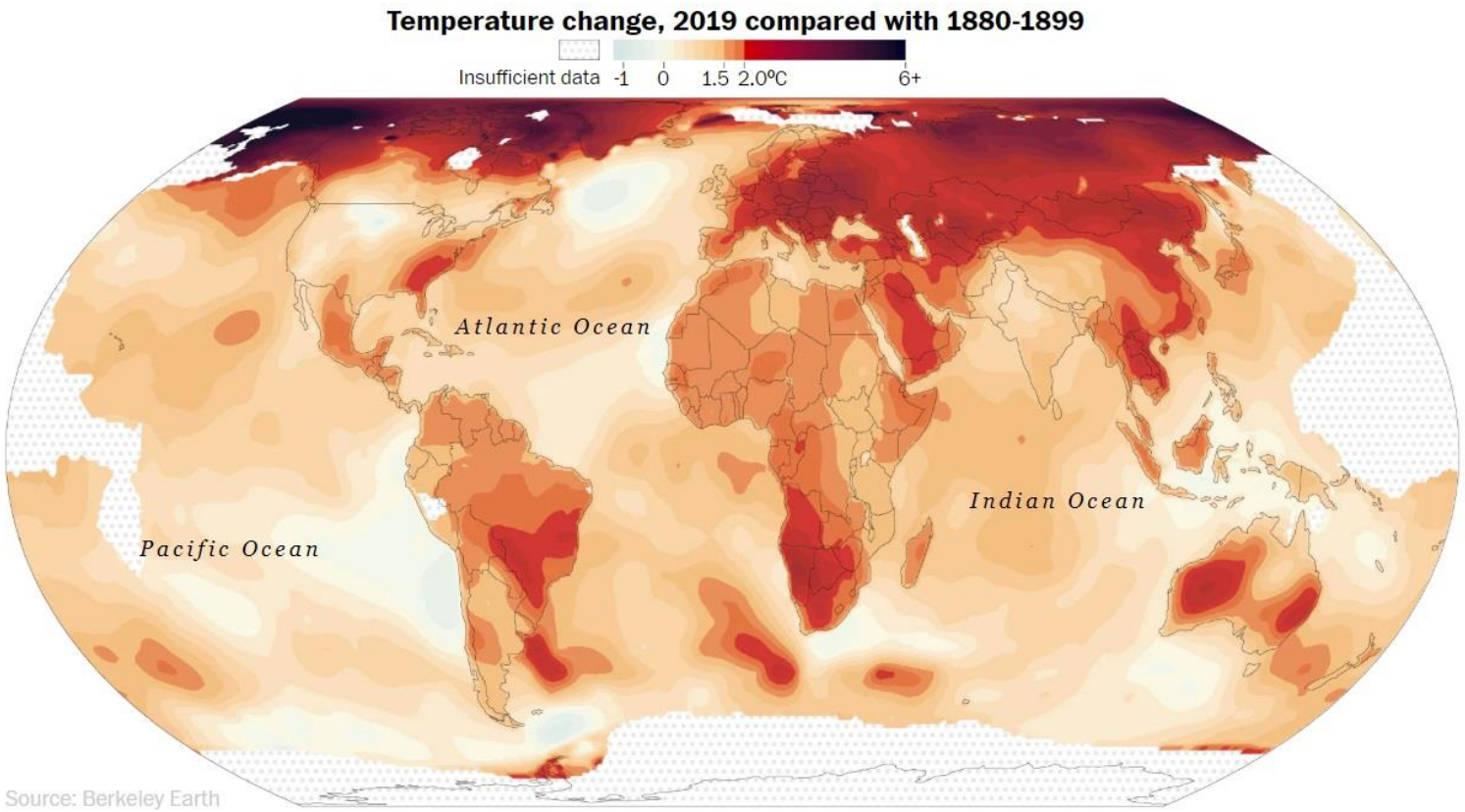


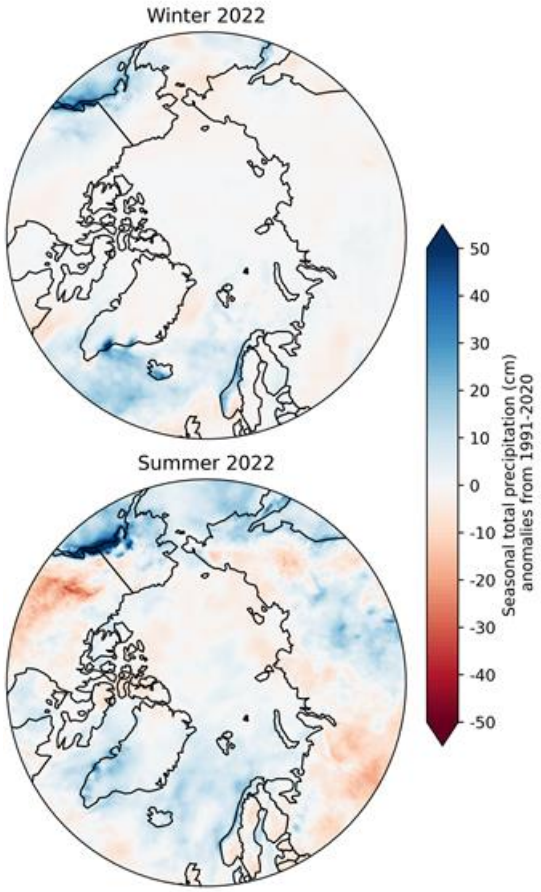
34% of Arctic inhabitants live in Europe

20% of European land is in the Arctic

British Antarctic Survey

The Arctic is becoming warmer and wetter



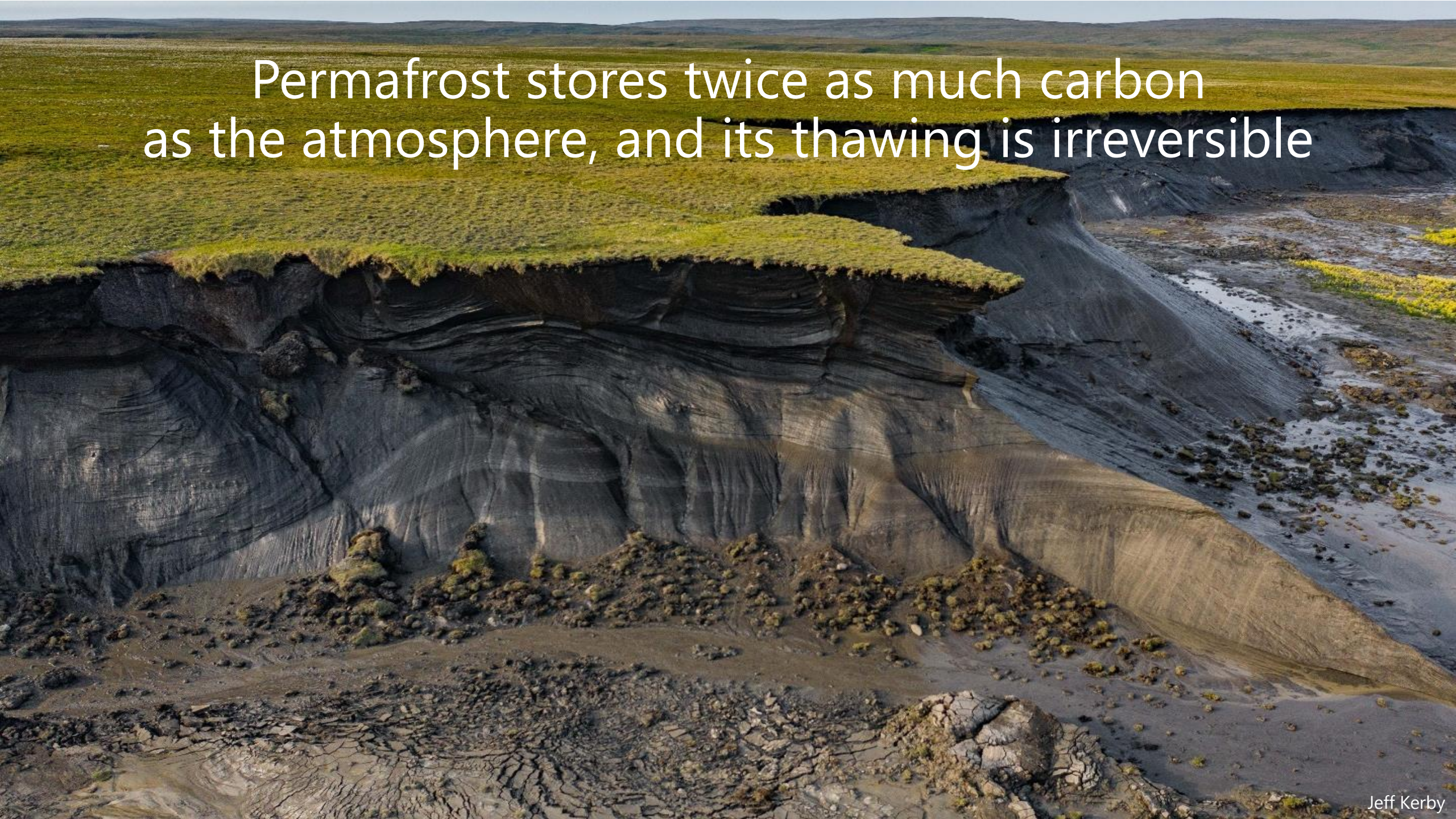


Berkeley Earth, NOAA Arctic Card 2022

Extreme climate events are affecting wildlife

Florian Stammler, Roma Serotetto

Permafrost stores twice as much carbon as the atmosphere, and its thawing is irreversible



Jeff Kerby

Shrubs have expanded into new areas

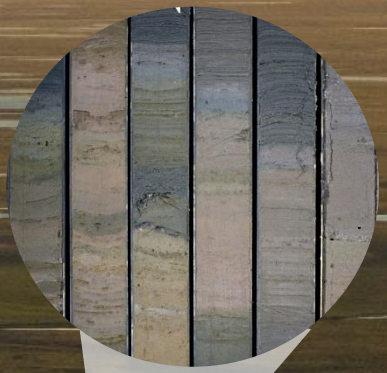
Plant species are responding differently, which can impact animals and food security

Mariana García Criado

Diverse data collection across scales

Sandra Angers-Blondin, Jeff Kerby

Palaeoecological records help us understand past centuries/millennia to inform future projections



Jeff Kerby, Hannes Grobe, Angela Prendin

Herbivores shape ecosystems (and so our management strategies)

Laura Barbero-Palacios, Isla Myers-Smith, Mariana García Criado

Reindeer herding can mitigate climate change

Jeff Kerby

Reindeer herding is a vital livelihood

Jeff Kerby

Policy-making must consider the perspectives of local and Indigenous stakeholders

Take-away messages

Physical & biotic changes
are amplified in the Arctic.

What happens in the Arctic
doesn't stay in the Arctic.

What happens in Europe
has repercussions in the Arctic.

Governance and legislation need direct and meaningful participation of local and Indigenous Peoples.

www.charter-arctic.org

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Jeff Kerby

ARCTIC CENTRE
University of Lapland

EU Polar Cluster

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 869471

TOURISM IN ARCTIC FJORDS – OPPORTUNITIES AND THREATS

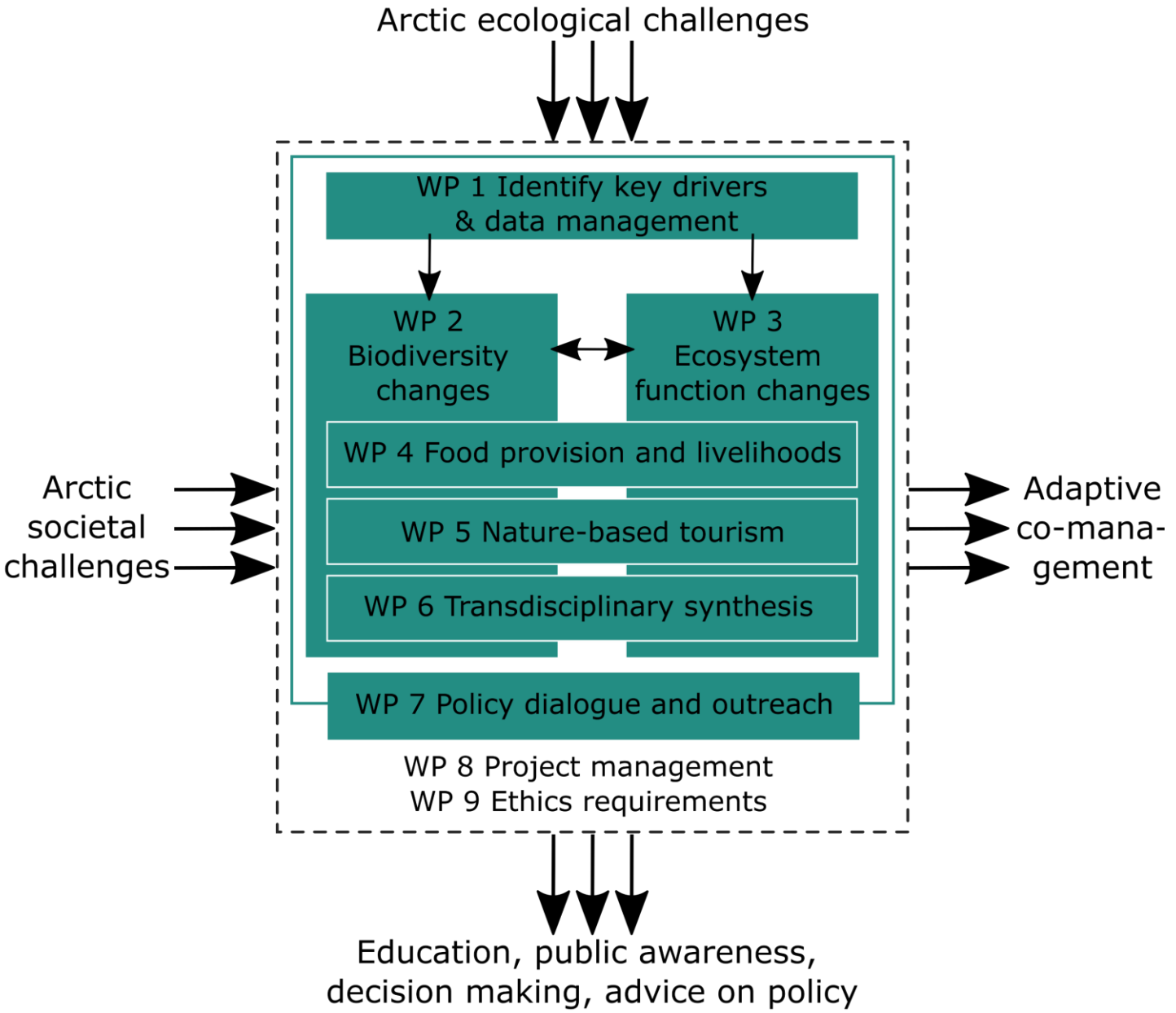
CARINA REN, AALBORG UNIVERSITY/AAU ARCTIC

AALBORG UNIVERSITY

FACE-IT Arctic Biodiversity & Livelihoods

Researching a changing Arctic

- Localizing change in Arctic societies: delicate process, changes in the social drivers difficult to project
- Societal drivers are crucial in shaping policies and personal decisions.
- Fieldwork in Arctic societies: Disco Bay /Nuup Kangerlua + Svalbard
- Tourism as example



Greenland

- Growing awareness and concern to develop tourism sustainably – *balance* a fragile ecosystem, a need for economic diversification and the interest and well-being of locals.
- '*Better*' rather than *'more*' tourism: targeting adventure tourists and focusing on local purpose and value-creation.
- *Resources* lack to develop and enforce regulation, monitoring, codes of conduct and guidelines.
- Crucial as two airports open in 2024 paving most probably the way for *increasing tourism*.

Svalbard

- Rapid and cascading *climate change effects*
- Nature based tourism actors have high *capacity to adapt* to climate and environmental changes
- Actors agree that pre-pandemic tourism growth was *unsustainable*, and that prioritizing *quality over quantity* is needed.
- The tourism industry tries to *balance* being a crucial provider of jobs and livelihoods and operating in a fragile natural environment, where nature conservation and the precautionary principle take *priority* over industry.

Participatory scenario workshop GREENLAND

- The most engaged issue is how *tourism and changing local leisure practices* will shape life around Nuup Kangerlua in the coming 20-30 years through increasing number of people, buildings and activity.
- *Crowding* could affect quality-of-life, access to hunting (and accompanying cultural values), tranquility and beauty of fjord environment.
- Concerns related to infrastructure, new airport, demography, land-use pressure and potential spatial conflicts *intersect* with the expected increase in tourism.

Participatory scenario workshop SVALBARD

- Most engaging issue for participant is the *tightening of regulation* of tourism and the environment, enacted to curb the rapid growth in tourist arrivals.
- Future development of tourism hinge on *global demand* for Arctic tourism as well as on tourism and environmental *policies* – creating *uncertainty* for future development.
- Climate, cryosphere and ecosystem change issues are *overarching*. Diminishing fjord ice has enabled a new cruise season, summer season has extended to the autumn, while avalanche risk has increased in winter.

Arctic tourism governance: Contrasts and similarities

- Opportunities and threats faced by Arctic tourism destinations and actors are embedded within **distinct place-based contexts**, which must be assessed when policies and strategies are planned and implemented.
- Successful tourism governance must **balance** climate efforts and environmental requirements with regional and local development.
- Successful tourism governance is **collaborative, flexible over time, and context sensitive**

- AND *SO WHAT?* BROADER IMPLICATIONS

- Intersections and entanglements of **societal, environmental and climatic dynamics** and concerns
- **Adaptive co-management** to better prepare for speeding societal & environmental processes and subsequent policy responces
- **Tourism beyond industry** – justice (access to land, QoL, wellbeing), democracy (local involvement & participation), culture and nature (Arctic indigenous and local ways of life)
- **Arctic futures** – knowledge-building within and across smaller, dispersed communities.

THANK YOU!

- FACE-IT: www.face-it-project.eu/
- Centre for Innovation and Research in Culture and Living in the Arctic: www.en.culture.aau.dk/research/research-groups/circla
- AAU Arctic: www.arctic.aau.dk
- Carina Ren: ren@ikl.aau.dk

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Arctic Biodiversity & Livelihoods

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Adaptation capacity in Greenlandic fisheries – local perspectives

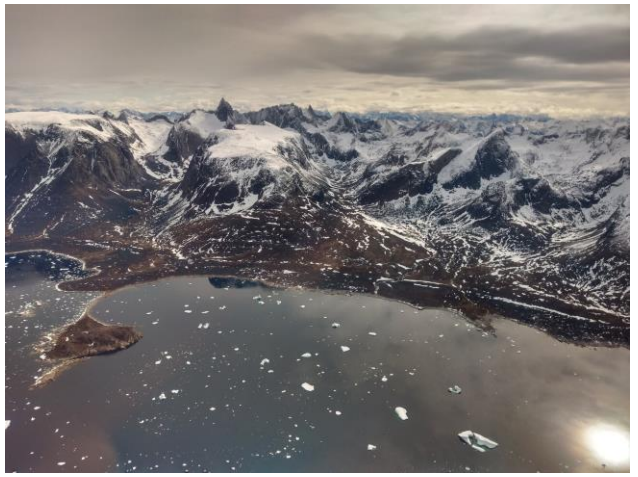
Rikke Becker Jacobsen, Ph.d.
Centre for Blue Governance, Aalborg University

Photo: Elsbeth Bembom/AAU Arctic

EU & Greenlandic fisheries: Mutual dependencies

- EU/Greenland Fishery Agreement (2021-2024/2026)
  - 3rd most important agreement in financial terms: 99 million €
  - Gives access to 12 large scale industrial trawlers from EU
  - Includes a focus on the development of the Greenlandic fishery sector

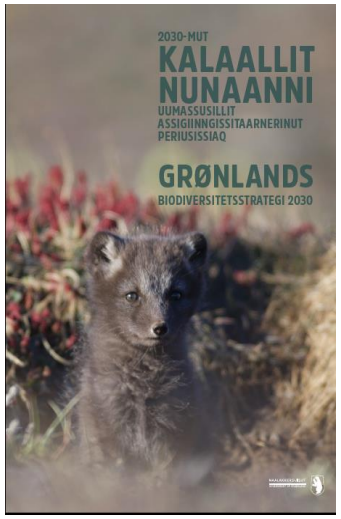
- Fish and shellfish: 90-95% of Greenland's export
- Photo example: 'Bacalao factory' main employer in small town Nanortalik, South Greenland



Understanding biodiversity change and adaptation from a local perspective

In line with recommendations, ECOTIP consults local knowledge about:

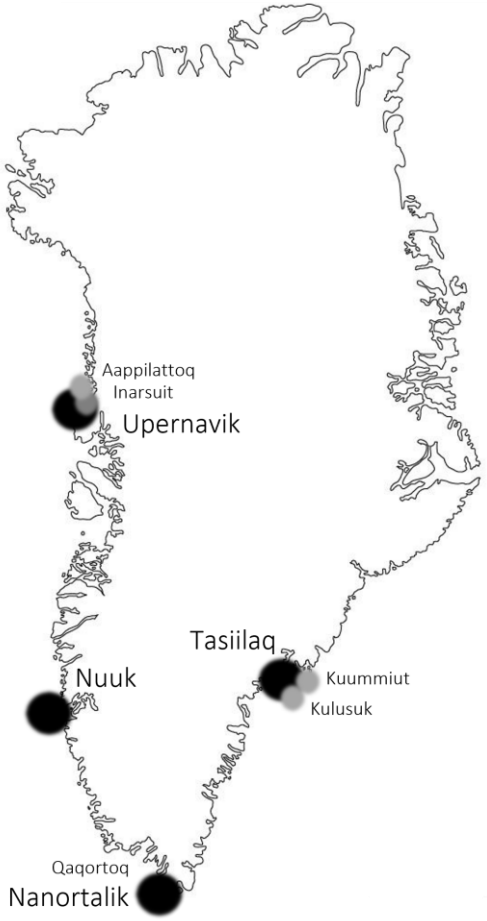
- Biodiversity changes
- Fishery practice and adaptation
- Community development



Greenland's Biodiversity Strategy 2021

ICC protocol 2022 p. 16: Understanding a holistic world view and indigenous knowledge

ECOTIP fishery stakeholder workshop no. 1. 2021



ECOTIP interviews & ethnographic fieldwork (2021 – 2023)

What is the offshore fishery adapting to?

- Incremental re-location of the shrimp stock
- Mackarel/pelagic opportunity.
- New or more by-catches
- Improved physical access (East Greenland and North Greenland)

Nuuk harbour

What is the coastal fishery adapting to?

- Variability in access to hunt from Ice (North and South; Sea and land)
- Increased run-off/algae/mud in fiords
- Re-location of fish in the water column (cod, Greenland halibut)
- ‘Missing arrival’ in the fiord systems: e.g. capelin and cod
- Increased opportunities north-wards (known species)
- Change in seal skin quality

Adaptation focus points:

- To make better use of existing resources
  - More landing opportunities (factory port-folio)
  - Product innovation in Greenland
- Adaptive by-catch regulation
  - e.g. allow for the use by-catch as bait
- Management of acces to quota in coastal fisheries
  - Could consider regional access, food security and hunter safety
- Entrepreneurship and diversification:
  - Need for investments in the ‘peripheries of the periphery’

Thank you – and do reach out!

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ECOTIP project

www.ecotip-arctic.eu

Centre for Blue Governance,

www.en.plan.aau.dk/research+centers/cbg

AAU Arctic

www.arctic.aau.dk

Panel discussion

Moderation: Annika E. Nilsson

Panelists

- Josephine Nymand (Greenland Research Council)
- Inuuteq Holm Olsen (Greenland Mission to EU)
- Gabriela Schaepman Strub (University of Zurich, Switzerland)
- Aslak Holmberg (Saami Council)
- Miguel Roncero-Martin (DG Maritime Affairs and Fisheries)

Reflection on implications

Karin Zaunberger (DG Environment)

Project Exhibitions

- CHARTER: Philip Burgess (University of Lapland, Rovaniemi, Finland)
- FACE-IT: Simon Jungblut (University of Bremen, Germany)
- ECOTIP: Sabrina Heerema (GRID-Arendal, Norway)

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Arktikum Science Centre

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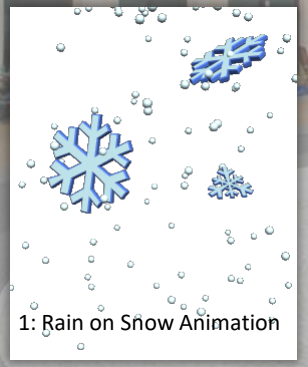
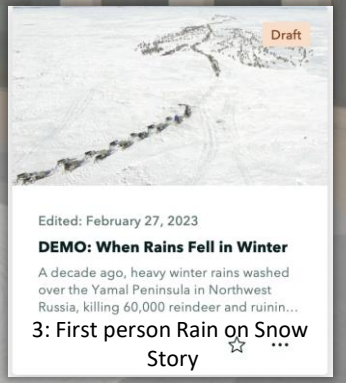
Snow Science & Stories

- Unit of the Arctic Centre, Uni of Lapland
- Permanent exhibition called “The Arctic in Change” about 1700 m²
- Shares building with Provincial Museum of Lapland
- About 2 to 4 temporary exhibitions per year
- Major goal is to engage young peoples interest in science



1: Rain on Snow Animation

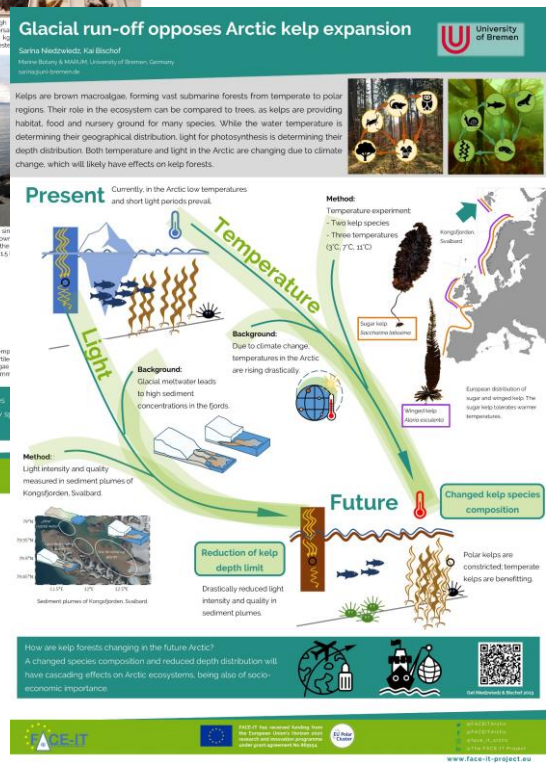
2: Interactive snow research map



3: First person Rain on Snow Story

Arctic Fjords Without Ice

Consequences of Melting Glaciers



Creating an easy-to-understand Science Output

Transations:

- Kalaallisut (Greenlandic)
- Saami
- Norwegian
- Danish
- German
- ...

Making Research Available

...and more

TIPPING POINTS

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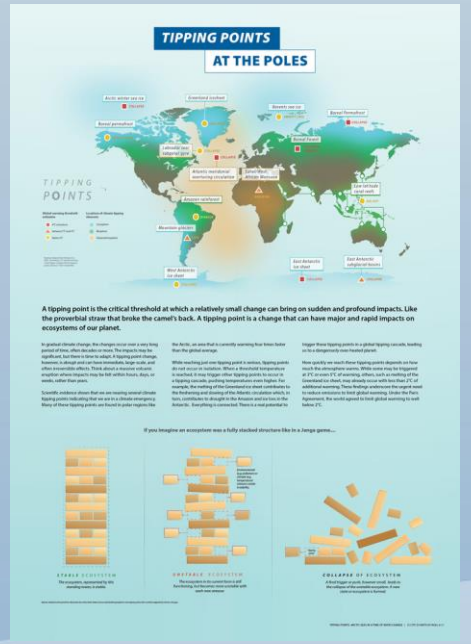
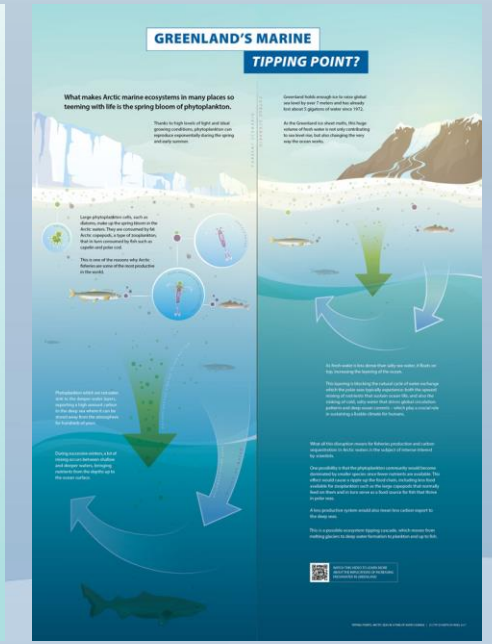
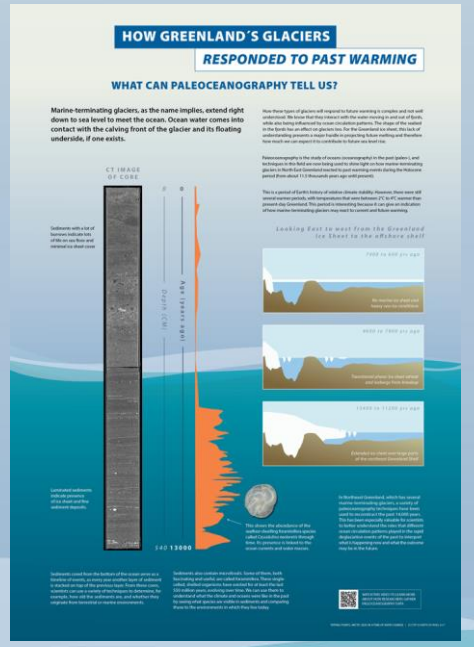
HOKKAIDO UNIVERSITY

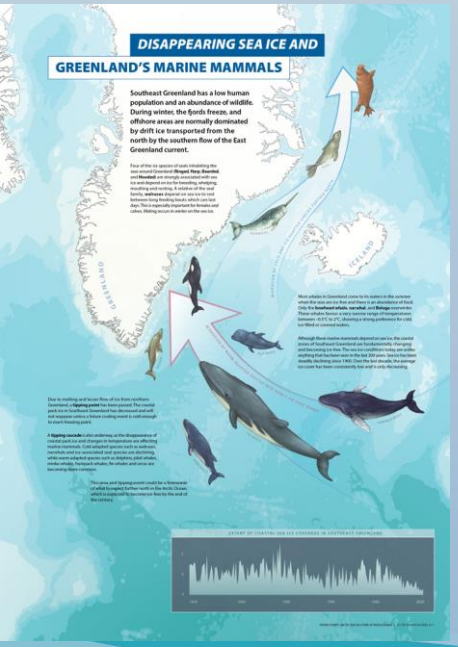
東京大学 THE UNIVERSITY OF TOKYO

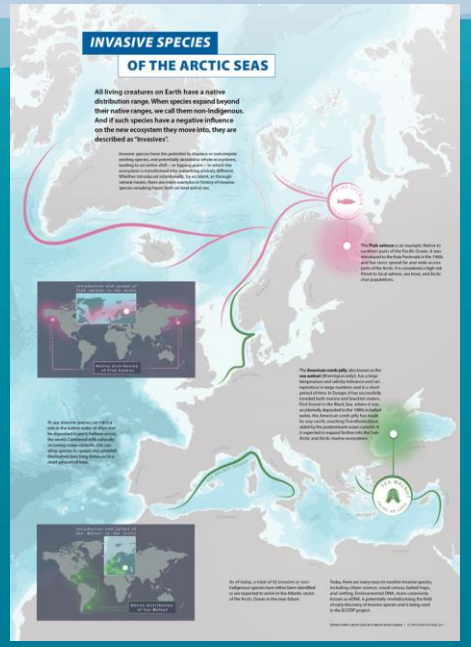
BIO BEDFORD INSTITUTE OF OCEANOGRAPHY L'INSTITUT OCÉANOGRAPHIQUE DE BEDFORD

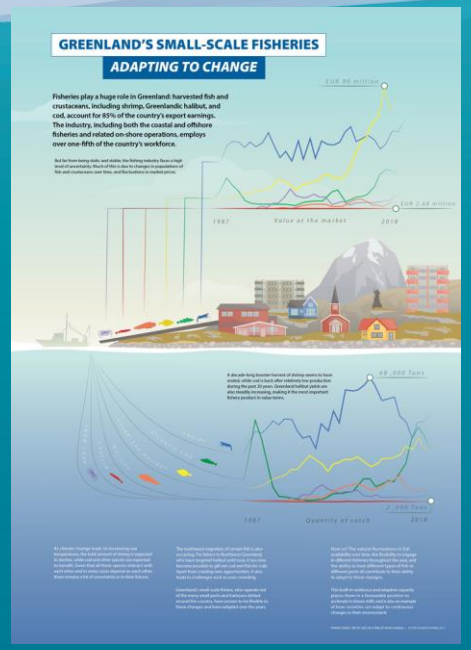


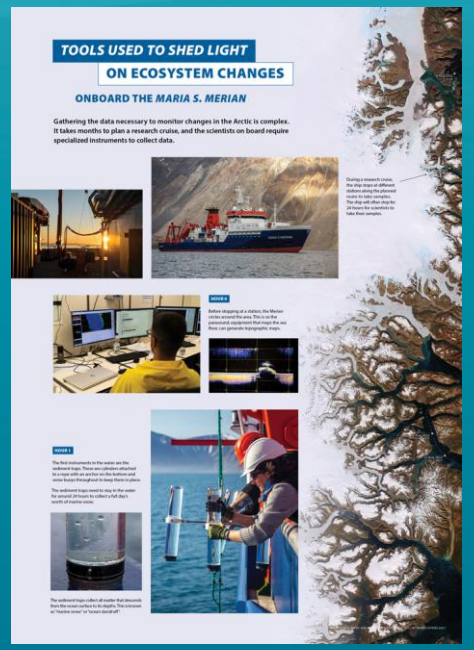












Coffee & Cookies

Join us in the exhibitions!

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