ARCTIC

The Arctic Ocean plays a critical role in the global climate system — absorbing, storing and circulating carbon, and providing biological services such as carbon sequestration through its coastal blue carbon ecosystems. Seagrass meadows, salt marshes and kelp forests provide important habitat for many species, including fish, invertebrates, birds and marine mammals. The shallow, broad, continental shelves unique to the Arctic are also critical for the long-term storage of blue carbon — the high biological productivity and cool, dense waters of the shelf promote carbon sinking and storage.

© Clive Tesar / WWF

Inuit-led conservation offers insights into how to care for blue carbon coastal ecosystems in the Arctic in ways that honour the interconnections of land and sea and the people who live there.

KNOWLEDGE GAPS

As the Arctic Ocean and its coastal environments continue to change, mapping and monitoring of blue carbon ecosystems is becoming increasingly important. There are many knowledge gaps for Arctic blue carbon because long-term scientific monitoring of ocean conditions, biodiversity and carbon dynamics in this region is lacking. Part of the challenge is that season-dependent work in this remote region can be difficult and expensive. These data gaps make it challenging to determine the best ways to protect and manage blue carbon ecosystems.

CLIMATE CHANGE

The global Arctic is warming at rates four times faster than the global average and has experienced large reductions in sea-ice cover duration and concentration. These losses affect all aspects of Arctic coastal ecosystems, including the persistence and abundance of biodiversity, and the region's ability to sequester carbon. These changes also impact the Inuit communities that rely on these regions for food security, travel and cultural practices. Inuit-led conservation offers insights into how to care for blue carbon coastal ecosystems in the Arctic in ways that honour the interconnections of land and sea and the people who live there. Inuit leadership and representation of their priorities in both research and management are absolutely vital in ensuring the health of Arctic blue carbon ecosystems, which are disproportionately affected by climate change.

Chapter summary prepared by WWF-Canada
Full chapter by *Stephanie Meakin, Maya Gold* and *Alex Kerr* available in *Coastal Blue Carbon in Canada: State of Knowledge*

RECOMMENDATIONS

- Prioritize Inuit-led and co-managed initiatives to improve the understanding of Arctic blue carbon (e.g., mapping and monitoring) and outline Inuit-led opportunities to support the long-term management of these important and remote ecosystems.
- Ensure that all current and new research, policy and management measures that take place within or affect the Arctic are co-developed with Indigenous rights holders, and centre Indigenous Peoples, priorities, governance structures, knowledge and values.
- In collaboration with Inuit governments and organizations, organize a knowledge co-production workshop on the high-latitude carbon cycle — including Arctic blue carbon discussions — to share existing knowledge and identify gaps in knowledge from both the scientific and Inuit knowledge bases.

To the Inuit who have inhabited the region for millennia, the Arctic region is known as Inuit Nunangat and includes the Inuvialuit Settlement Region, the territory of Nunavut, Nunavik in northern Québec and Nunatsiavut of Newfoundland and Labrador.

Chapter summary prepared by WWF-Canada

Full chapter by *Stephanie Meakin, Maya Gold* and *Alex Kerr* available in *Coastal Blue Carbon in Canada: State of Knowledge*