

Memorandum 2/11/2018

CC5: Resilience and management of Arctic wetlands: a social-ecological systems approach

This memo provides a summary of reports submitted on the session CC5 organized at the Arctic Biodiversity Session in Rovaniemi, Finland, October 9-12 organized by the Swedish Environment Protection Agency and the Stockholm Environmental Institute.

Attendance: 30

Arctic Biodiversity Assessment recommendation themes most prominently addressed in the session:

- Climate change
- Improving knowledge and public awareness
- Ecosystem-based Management

Key points raised in the session that were important to note:

- One can debate the definition of wetlands. Depending on the definition used the total size of Arctic wetlands is less than 60%.
- One could also argue against using linear approach to feeding evidence into policy i.e. involving stakeholders at the earliest stage as possible in the review process so you are answering the questions that are really relevant/needed
- Not all the relevant data on wetlands should come from summarizing (existing) evidence but also from e.g. satellite images, although satellites may not be able to detect subtle differences between wetland types.
- Noted that Ramsar is in the process of adopting (although not decided yet) two new resolutions - one on Arctic wetlands and one on participation/role of Indigenous Peoples.
- Little is known about the status of Arctic wetlands, despite their socio-ecological importance, and the fact that 60% of the Arctic surface consists of wetlands. Wetlands are critical for carbon sequestration, hydrological function, ecosystem services, and global connectivity. The Swedish Ministry of the Environment leads a three-stage CAFF-supported project "Resilience and Management of Arctic Wetlands" whose goal is to enhance the state of knowledge and produce policy recommendations.
- Phase 1 of this project analysed wetland inventories and completed a scoping study of scientific and grey literature and identified knowledge gaps/needs for developing policy recommendations. Results indicate that most Arctic countries have conducted wetland inventories, or have on-going projects; however, country-specific project criteria and language create challenges to Arctic-wide comparison of data sets. A scoping literature study (Nov 2017) yielded the conclusion that there is little research on effects of management interventions, restoration efforts, and establishment of protected areas. The Sami Council directed a related second literature review on socio-ecological aspects of Arctic wetlands in Sápmi, identifying gaps including effects of restoration efforts, differences in remote vs densely populated areas, the effectiveness of protected areas networks, and interactions between legal frameworks.

- Phase 2 of the project addresses critical knowledge needs. Among scientists, the ecological component of socio-ecological systems often overshadows the social component, with implications for the kinds of questions that are addressed through research. Phase 2 uses case studies as one tool to evaluate how well human regulation and management of wetlands have been assessed in Phase 1.
- The Canadian High Arctic Research Station (CHARS) evaluated its approach to long term wetland monitoring experiments. A paired watershed approach is planned for long-term monitoring. Standardised Arctic wetland classification makes comparative analysis possible across multiple monitoring sites. Wetland monitoring will also be linked to arthropod, shorebird and mammal monitoring to produce a comprehensive ecosystem view.
- The recently published Global Wetland Outlook indicates wetlands are disappearing faster than forests, and that their ecosystem services exceed terrestrial services in value. Monitoring programs are critical to managing wetlands, yet we must also collectively think further about new opportunities for investing in wetlands and improving communication between partners.

Recommendations/actions identified for how to deal with the issues raised in the session:

- Management of wetlands must adapt to changing climate to build long-term resilience.
- Interviews with Sami knowledge holders clearly identify knowledge gaps in scientific and grey literature about importance of wetlands to Sami. It is important to connect TEK with academic science to recognise importance of wetlands to Indigenous peoples.
- Literature reviews towards providing management recommendations contain inherent bias, which highlights the need for systematic reviews.
- Look for new opportunities to build partnerships around sustainable development in Arctic wetlands, and new sustainable trade initiatives with Arctic wetland products.

Take home message from the session:

- Wetlands are of great importance to the Arctic, as well as globally, and adaptation to a changing climate is key in order to manage them properly so as not to lose important functions. By combining socio-ecological disciplines with those of natural sciences this goal will be more effectively reached.
- Wetlands provide critical ecosystem services in global processes but are under some of the greatest threats to any ecosystem in the Arctic, as well as globally. Basic understanding of wetland responses to restoration and management efforts is still lacking, highlighting gaps to policy makers. Gaps clearly include recognition of cultural services and the knowledge of Indigenous peoples regarding the importance of wetlands to livelihoods and culture. Multiphase projects focused on addressing knowledge needs will help track wetland trends and map responses in a changing climate to build long-term resilience.