Circumpolar Biodiversity Monitoring Programme
Coastal Expert Workshop Meeting Summary

Ottawa, Canada: February 29-March 3, 2016
Acknowledgements

CAFF Designated Agencies:
- Norwegian Environment Agency, Trondheim, Norway
- Environment and Climate Change Canada, Ottawa, Canada
- Faroese Museum of Natural History, Tórshavn, Faroe Islands (Kingdom of Denmark)
- Finnish Ministry of the Environment, Helsinki, Finland
- Icelandic Institute of Natural History, Reykjavik, Iceland
- Ministry of Foreign Affairs, Greenland
- Russian Federation Ministry of Natural Resources, Moscow, Russia
- Swedish Environmental Protection Agency, Stockholm, Sweden
- United States Department of the Interior, Fish and Wildlife Service, Anchorage, Alaska

CAFF Permanent Participant Organizations:
- Aleut International Association (AIA)
- Arctic Athabaskan Council (AAC)
- Gwich'in Council International (GCI)
- Inuit Circumpolar Council (ICC)
- Russian Indigenous Peoples of the North (RAIPON)
- Saami Council


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SUMMARY

The Coastal Expert Workshop brought together a diverse group of coastal experts with the common goal of developing a biodiversity monitoring program for coastal ecosystems across the circumpolar Arctic. Meeting participants, including northern residents, industry and Non-Governmental Organization (NGO) representatives, scientists, and government regulators from across the circumpolar Arctic, gathered at the Lord Elgin Hotel in Ottawa from March 1 to 3, 2016, to discuss current biodiversity monitoring efforts, understand key issues facing biodiversity in the Arctic coastal areas and suggest monitoring indicators, or Focal Ecosystem Components, for the program. A Traditional Knowledge Holders meeting was held on February 29, 2016 in conjunction with the workshop.

The following document provides a summary of the workshop activities and outcomes, and will be followed by a more complete Workshop Report.

WORKSHOP GOALS

1. Continue to develop an inventory of ongoing coastal biodiversity monitoring across circumpolar countries.
2. From a range of Northern perspectives, develop a comprehensive understanding of the major questions and issues facing Arctic coastal biodiversity that need to be answered into the future to meet the needs of the Arctic Coastal Biodiversity Monitoring Plan, or Coastal Plan, users.
3. From the inventory and understanding, develop and begin to prioritize a list of the most important coastal biodiversity and ecosystems components, known as Focal Ecosystem Components (FECs).
4. Consider a series of conceptual ecological models that link FECs to the drivers and stressors that are or may impact Arctic coastal biodiversity.
5. Begin to develop a process for inclusion of Traditional Knowledge of the Arctic coast in the design and delivery of the Coastal Plan.

WORKSHOP OUTCOMES

1. National inventories of ongoing coastal biodiversity monitoring were presented from each of the contributing nations (Canada, Denmark and Greenland, Norway, Russia, and the United States – Iceland was not represented). A compilation of these inventories will be presented in the final Meeting Report.

2. A comprehensive list of the major questions and issues was developed during breakout sessions and discussions during the meeting, as well as contributions from the Coastal Expert Monitoring Group (CEMG) online questionnaire. These will be compiled in the final Meeting Report.

3. A list of key FECs is now in development following suggestions from CEMG questionnaire; the results of the meeting breakout sessions using conceptual ecological models (see below).

4. Meaningful discussions throughout the meeting indicate a collective will and intent to work towards a system that builds trust through equitable engagement incorporating Traditional Knowledge and science.
PARTICIPANTS

Traditional Knowledge (TK), northern community representatives, and Permanent Participants
Quitsak Tarriasuk – Nunavik Elder/RNUK/Makivik
Henry Alayco – Nunavik Marine Region PC
Roy Ashenfelter – Bering Straits Native Corp.
Carolina Behe* – Inuit Circumpolar Council
John Cheechoo – Inuit Tapiriit Kanatami
Patrick Gruben – Joint Secretariat, Inuvialuit
Qaiyaan Harcharek – IK holder, Hunter, Anthropologist
Cyrus Harris – IK holder, Hunter
Jimmy Johannes – RNUK/NHFTA/Nunavik Hunters, Fishermen and Trappers Association
Eva Kruemmel – Inuit Circumpolar Council
Pitsey Moss-Davies – Inuit Circumpolar Council
Scot Nickels – Inuit Tapiriit Kanatami
Baba Pedersen – Canadian Rangers & INAC
James Simonee – Pond Inlet ARCTICconnex

National representatives
Canada
Trevor Bell – Memorial Univ. of Newfoundland
Nicole Couture – Geological Survey of Canada
Donald Forbes – CACCON/ Future Earth Coasts
Les Harris – Department of Fisheries and Oceans
Trish Hayes* – Environment and Climate Change Canada
Kimberly Howland – Dept. of Fisheries and Oceans
Audrey Lapenna – Eeyou Marine Region PC/IRB
Donald McLennan* – Polar Knowledge Canada
Mishal Naseer – Nunavik Marine Reg. IRB
Alan Penn – Eeyou Marine Region PC/IRB
Jonathan Pierce – Environmental IRB - Inuvialuit
Laura Thomson – University of Ottawa; APECS
Bill Williams – Dept. of Fisheries and Oceans
Katherine Wilson – Canadian Ice Service
Angela Young – Government of Nunavut

Norway
Maria Pettersvik Arvnas* – Norwegian Env. Agency
Paul Renaud – Akvaplan-niva

Denmark and Greenland
Tom Christensen* – Aarhus University
Ole Geertz-Hansen – Greenland Inst. of Natural Res
Susse Wegeberg* – Aarhus University

Russia
Liudmila Sergienko* – Petrozavodsk State University

United States
Becci Anderson* – U.S. Geological Survey
Gilbert Castellanos* – U.S. Fish and Wildlife Service
Stacey Fritz* – Bureau of Land Management
Tahzay Jones – National Park Service
Vanessa von Biela – U.S. Geological Survey

CAFF Secretariat
Courtney Price – Conservation of Arctic Flora and Fauna

Industry representatives
Jennifer St Paul Butler – Baffinland Iron Mine

Non-governmental Organizations (NGOs)
Jeff Ball – Ducks Unlimited Canada
Jennie Knopp – Oceans North Canada
Louie Porta – Oceans North Canada
Alexander Shestakov – WWF Global Arctic Programme
Tiina Kurvits – GRID-Arendal

PC = Planning Commission  *CAFF board representative IRB = Impact review board  *Coastal Expert Monitoring Group member
BACKGROUND

The Coastal Expert Monitoring Group (CEMG) is organized under the Circumpolar Biodiversity Monitoring Program (CBMP), an international network of scientists, governments, Indigenous organizations, and conservation groups working to harmonize and integrate efforts to monitor the Arctic’s living resources under the Conservation of Arctic Flora and Fauna (CAFF) Working Group of the Arctic Council.

For more information visit [http://www.caff.is/monitoring](http://www.caff.is/monitoring)

KEY TERMS

Focal Ecosystem Components (FECs) are key ecosystem indicators that are, or will become, the targets of the monitoring effort, as well as their related attributes (characteristics). As an example, shorebirds may be selected as FECs, and the associated attributes that may be monitored could include: diversity, composition, phenology, demographics, spatial structure, temporal cycles, health, productivity, and ecosystem functions and processes.

Conceptual ecosystem models, symbolic representations of the key indicators of ecosystems and the relationships between them, were used throughout the meeting and served as a useful approach for identifying key species in an ecosystem (e.g. a tidal lagoon) and the relationship of these species with each other, the physical environment, human activities, and climate change.
TRADITIONAL KNOWLEDGE (TK) HOLDERS ONE DAY MEETING
MONDAY FEBRUARY 29, 2016

There are many questions that Traditional Knowledge holders must address and many decisions that coastal communities face. In working with scientists and international programs, some of the questions and decisions include how to share TK information, how information from TK should be categorized when used with science, how to safeguard information documented from TK holders, and how to ensure that TK holders are involved in analysis and interpretation of their information.

This one-day meeting allowed for Traditional Knowledge holders and Arctic Council Permanent Participant representatives to become familiar with the CEMG and to openly discuss the use of TK within the Coastal Expert Monitoring Group.

The meeting objectives were:

1. Obtain a general understanding of CEMG intentions and goals

2. Discuss challenges and opportunities for the inclusion of TK within CEMG

3. Discuss processes needed to establish a co-production of knowledge platform within the CEMG

4. Discuss how TK information can be stored and made available for the assessment of coastal biodiversity
COASTAL EXPERT WORKSHOP: DAY 1
TUESDAY MARCH 1, 2016

Opening prayer from Quitsak Tarriasuk

Introduction of CBMP coastal experts and participants

Opening remarks (Donald McLennan)

Circumpolar Biodiversity Monitoring Program tracking change in Arctic ecosystems: Tom Christensen
Presentation outlined the working structure of the groups and sub-groups within the Arctic Council, specifically CAFF and CBMP, and the results of these initiatives (e.g. Arctic Biodiversity Assessment).

CEMG – Coastal Plan overview: Donald McLennan & Becci Anderson
Outline of the planned approach for the CEMG including discussion on how coastal regions are defined, incorporation of existing monitoring activities, the integration of Traditional Knowledge and community-based monitoring initiatives, and how to identify and fill gaps in current monitoring programs.

National reports on coastal monitoring
National reports summarizing monitoring initiatives in Canada (Jennie Knopp), Denmark and Greenland (Ole Geertz-Hansen), Norway (Paul Renaud), Russia (Liudmila Sergienko), and the United States (Stacey Fritz). Iceland was not able to attend.

Introduction to Traditional Knowledge, co-production of knowledge, challenges and opportunities: Carolina Behe & Pitseolalaq Moss-Davies
Introduced the position and important role of the Permanent Participants (e.g., ICC) in the Arctic Council, the historical nature of TK as it relates to environmental monitoring, and summarized the questionnaire responses from the Inuit community. Followed by a group discussion with testaments from TK holders.

A marine monitoring plan for the southern Canadian Arctic Archipelago: Bill Williams
Overview of coastal-marine studies taking place in the vicinity of Cambridge Bay and Bathurst Inlet, with specific reference to circulation patterns, nutrient supplies, mixing throughout the year.

Baffinland Iron Mines marine biodiversity monitoring: Jennifer St Paul Butler
Introduction to the Mary River Project’s intended plans for transport of resources and the monitoring projects undertaken by the company to assess the potential impact of shipping activities on the marine ecosystem near the community of Pond Inlet, Canada.

Conceptual ecosystem models: Donald McLennan
Using ecosystem models as a way to visualize coastal ecosystems and develop key questions for determining FECs.

Summary of key coastal issues identified from questionnaire: Becci Anderson
Overview of key concerns listed by northern residents and scientists in the questionnaire, which include climate change, bad decision-making, invasive species, food security, infrastructure/development and associated pollution.

Breakout session: Identifying key questions (group action)
Participants circulate between poster-boards and identify key questions related to: Food Security; Climate Change; Pollution; Infrastructure, Development, and Shipping; Other.
COASTAL EXPERT WORKSHOP: DAY 2

WEDNESDAY MARCH 2, 2016

Opening prayer from Quitsak Tarriasuk

Opening remarks (Becci Anderson & Donald McLennan)

Inuit game led by Carolina Behe

Selecting Arctic Coastal FECs (indicators) that meet clients’ needs: Tom Christensen
Introduces a question-driven approach to deciding upon FECs, with the interests of Arctic communities, governments, scientists, and industry in mind, followed by lengthy group discussion on the topic.

Presentation of recommended FECs from questionnaire results: Donald McLennan
Posters of FECs suggested from questionnaire results provided, group invited to add to list.

Breakout session: FEC selection for specific sites (group action)
Groups formed to focus on a holistic view or specific aspects of the coastal ecosystem subsystems (e.g. rocky coastal shores, soft coastal shores, coastal wetlands and freshwater systems, roles of industry and NGOs, food security) to generate suggested lists of FECs. In many cases, groups used key questions developed during the breakout session of day 1, and may have integrated the structure provided by other monitoring programs (e.g. from the CBMP’s Marine program).

FEC reporting from groups
Individual groups summarize their process and their suggested FECs, followed by group discussion and particular note of the overlapping FECs (which emphasizes that they are clearly “focal”).

Monitoring introduced and native biodiversity of coastal invertebrates in the Canadian Arctic: Kimberly Howland
Overview of invasive species and the potential means of their introduction (e.g. ship hulls, ballast water, change in migration patterns). Strategies for prevention and mitigation, including methods for management, early detection, and the development of a community-based monitoring network.

Arctic char monitoring activities and other initiatives in the central Canadian Arctic: Les Harris
Presentation of Arctic char monitoring projects in the area of Cambridge Bay, Paulatuk, and Darnley Bay (Canada) that have a significant emphasis on community involvement, awareness, and training/capacity building followed by group discussion.
Opening prayer from Quitsak Tarriasuk

Opening remarks (Becci Anderson & Donald McLennan)

**Arctic Biodiversity Data Service (ABDS): Courtney Price**
Overview of how CAFF manages scientific data, with particular note on the promotion of free and open access to data when possible. The Arctic Biodiversity Data Service (ABDS) GeoNetwork online hosts data and metadata (context for data) where people can both submit their own data and access other datasets and facilitating links to other data portals (e.g. the Polar Data Catalogue).

**Management of CEMG TK information: Caroline Behe**
Discussion of the use and treatment of TK, particularly as it travels further from the community. Specifically noted is the need to involve TK holders in the analysis of information from TK. Additionally, it is important to return products to the community to show how it has been used for evidence in the realms of science and policy making – these actions show respect and build trust.

**Circumpolar Arctic Coastal Communities Observatory Network (CACCON –“Catch On”): Donald Forbes**
Introduction to CACCON, a pan-Arctic network of community-engaged and integrated coastal observatories, with local and regional knowledge hubs. Projects are co-designed and co-produced with community members and aim to create adaptable and resilient communities. The network enables connections between Arctic communities to build collaborations on projects (e.g. land-fast sea ice monitoring).

**Ongoing engagement and next steps (Becci Anderson and Donald McLennan)**
Emphasize that this workshop is the first step to developing a useful plan for monitoring across the Arctic, and being useful is the key to a sustainable program and relationship between this community of coastal experts (this means you!). Therefore, we encourage continued contributions and communication from participants (including feedback on summaries and reports) in the coming months. It is important to recognize that implementation might look different between countries, but the overall goals will be common.

Closing thoughts (group comments)

Adjourn Coastal Expert Workshop
SUGGESTED FOCAL ECOSYSTEM COMPONENTS

The diagram below incorporates FECs recommended during breakout sessions and group discussion during CEMG meeting, as well as FEC recommendations given in the CEMG questionnaire:

The above represents some FECs suggested at the workshop, and will be further reviewed and refined (see Next Steps section). In particular, it was noted during the meeting that several of these species may already fall under the monitoring activities of the Circumpolar Biodiversity Monitoring Program’s Marine, Terrestrial, or Freshwater plans and that it will be important to maintain clear communication with the other steering committees of the CBMP to ensure monitoring is comprehensive and coordinated. In addition to the FECs identified in this figure, additional FECs identified by both TK holders and scientists included abiotic and human community FECs that will be summarized in the forthcoming Coastal Expert Workshop Meeting Report.
NEXT STEPS

1) Distribution of this Meeting Summary

2) Completion and distribution of the Workshop Report – an extended version of this document incorporating specifics of presentations and summaries of group discussions, FEC development documentation (key issues and questions), and a more thorough list of recommended FECs.

3) Development of the Arctic Coastal Biodiversity Monitoring Plan –
   - Goal is to complete in 2017
   - Writers meeting planned for June 1-3, 2016
   - Development of national plans and implementation

4) Ongoing engagement is key! There are a number of ways participants can remain involved. First we encourage further questionnaire responses, which can be submitted through the following:

   Questionnaire: https://form.jotform.com/60272016921952

You can also stay up-to-date with CAFF and CBMP activities here:

   CAFF website: http://www.caff.is/monitoring
   Coastal monitoring page: http://www.caff.is/coastal
   Twitter: @CAFFSecretariat
   Facebook: www.facebook.com/CAFFS
   Or Email: caff@caff.is

THANK YOU!

The CEMG would like to thank all the attendees for taking the time to participate in the meeting and for everyone’s contributions during the presentations, discussions, and breakout sessions. Working together, we will build an integrative coastal monitoring plan that will help the detection, assessment, and adaptation to changes in our coastal regions and communities.

Koana! Tak! Qijannamiik! Спасибо! Quyanainni! þakka þér! Quyana!