



Meeting of Committee on Observations and Networks (CON)

**14th March 2016 9:00-3:00 PM, Fairbanks, Alaska, USA
Minutes**

Welcome

Lisa Loseto (CON chair, Canada) welcomed the participants and explained that the purpose of the meeting would be to report on and review existing efforts to create inventories of Arctic observational activities. The participants introduced themselves, and the agenda was approved. The agenda is found in appendix 1, and the list of participants is found in appendix 2.

Lisa Loseto gave a brief introduction to CON (1), making reference to CON's implementation document, stating that one of the goals of CON is to "develop and implement a plan for the establishment of an inventory and related gap analysis of circum-Arctic observational and monitoring assets". She also made reference to the implementation plan, which outlined three themes:

- 1) "State of" National Inventories and reporting of information about Arctic programs, networks, projects and platforms
- 2) Thematic Inventories for Inventory Development
- 3) Templates/Parameters

Review of nation and network inventories

Round Table discussion and updates regarding inventories

Finalize a plan for submission to EU PolarNet

Ulf Jonsell (Sweden) explained about national inventory efforts, which had mainly been driven by the EU INSPIRE program. He believed that inventories works best when they address specific questions, like CON's thematic approach. He said that a list of contacts exists and that these could be provided.

Susan File (Canada) provided an update on the State of National Inventories in Canada. The Canadian Polar Commission (or Polar Knowledge Canada or POLAR) released the report *State of Environmental Monitoring in Northern Canada* and accompanying dataset in 2015. The report provides a snapshot of what parameters are being measured and where. The metadata set captures monitoring projects, programs and networks for

atmosphere, cryosphere, freshwater, marine, terrestrial, and human health monitoring from 2000 to 2014. The report and dataset are available for download¹

On monitoring platforms, Susan File explained about the Canadian Network of Northern Research Operators (CNNRO), which is a network of research support facilities in Canada's North, ranging from research vessels and observatories to seasonal field stations and un-staffed remote monitoring installations. The CNNRO maintains information about its member facilities on its website².

Agnieszka Beszczynska-Möller (Poland) explained that information is mainly available from Svalbard, where the Polish activity is large, and Poland is associated with SIOS. Information also exists from Greenland and Iceland. Governmental resources are usually spent on infrastructure, but only for the technical part. On platforms, Agnieszka Beszczynska-Möller mentioned the vessel Oceania that is doing monitoring in the Greenland area.

Sergei Priamakov (Russia) explained that Russia has a well-established information system where metadata is available. He offered to contact Igor Ashik, the Russian member of the SAON Board on this. He finally mentioned that the work is done in the context of the World Data Centres.

Hannele Savela (Finland) made a presentation (2) on 'The International Network for Terrestrial Research and Monitoring in the Arctic' (INTERACT) with emphasis on these products:

- Station Catalogue, providing an overview of research stations, including descriptions of the physical setting, facilities and services offered at the stations,
- Report on Research and Monitoring at INTERACT stations, which includes an overview of scientific disciplines and monitored parameter groups covered by the stations,
- Metadata Database: Contains information on the different research and monitoring projects at the INTERACT stations.

Reidar Hindrum (Norway, CAFF chair) explained that there is no overall national coordination in Norway to compile this information, but that there are several networks and several national inventories. Prior to the meeting, he had provided a table of the most relevant sources. He noted that the inventories are at very different levels, and that universities are probably not covered by these.

Tom Christensen (Denmark, CBMP chair) explained that he would be able to provide information from Denmark, but that it would most likely be biased. In Denmark, there is no coordinating body, and the information is maintained within the universities, but also under formal programmes, like the Greenland Ecosystem Monitoring (GEM). For CBMP, the Arctic Biodiversity Data Service is the source (abds.is). The contents is based on existing monitoring programmes and is organised to support CBMP assessment work, like the ongoing State of the Arctic Marine Biodiversity Report (SAMBR).

Mirosław Ondras (WMO) had provided an introduction to the Global Cryosphere Watch (GCW). The core component of the GCW surface observation network is called CryoNet. The GCW network builds on existing

¹ <http://arcticobservingcanada.ca/state-of-monitoring.html>

² <http://cnro.ca/our-facilities/>

cryosphere observing programmes and promotes the addition of standardized cryospheric observations to existing facilities in order to create more robust environmental observatories. The GCW network distinguishes between *stations* and *sites*. In order for a surface station or site to be included in the CryoNet, it must meet certain criteria.

In a presentation (3), Vito Vitale (Italy) gave an overview of Italian inventory activities in the Arctic. The work will collect information not only from the Italian scientific community interested to/operating in the Arctic, but also from the public and private sectors. It will contribute at the national level to the SAON CON inventory plan and be able to support Italian representatives in the Arctic Council with the more complete information about activities. The inventory system will have this characteristics/functionality:

1. Activities connected to national/international networks
2. Projects
3. Long-term activities (programmes)
4. Infrastructures at disposal for Arctic research (Arctic/Italy)
5. Publications and other results connected to research activities
6. People involved

The principles of the inventory work were discussed, and Ulf Jonsell believed that the exercise could be used to provide an analysis of where the gaps are in the monitoring and observational activities. He added that the effort to build inventories could be justified if AMAP saw a need for it.

Reidar Hindrum said that from a CAFF/CBMP perspective, it had been noted that there are many ongoing observational programs, and these are frequently reporting gaps. He saw a value for CON in establishing such inventories, pointing to existing monitoring.

Hannela Savela (Finland) explained that the GEO's Global Earth Observation System of Systems (GEOSS) would be the place to organise this information. Vito Vitale (Italy) had knowledge about the concept and saw some challenges with the system.

Lars-Otto (AMAP Secretariat) said that AMAP is a big consumer of data and that AMAP had originally seen the need for SAON as a mechanism to meet this need. He saw a need for financial support to SAON, noting that until now, only Norway had provided financial resources. He finally mentioned the AMAP/SAON project directory, asking the participants to review the information held therein.

Updates on Community Based Observing (CBO)

Lillian Alessa (USA) gave a presentation (4) on Community Based Observing (CBO). CBO is a process where local teams work with academia or governmental scientists to obtain systematic, long term (series) of observations using reproducible, standardized collection methods. There has been a USA call, and there is a wish to establish a permanent group. This would allow the creation of a pan-Arctic CBO group with a harmonised approach.

Lisa Loseto responded that she saw this as an interesting opportunity and that CON could establish a CBO subgroup to support this. She noted that CBO would also be on the agenda for the coming SAON Board and that a formal response should come from the Board.

Updates on Arctic Data Group (ADC)

Peter L. Pulsifer (USA, ADC chair) gave a presentation (5) on International Arctic Data Coordination Activities. He informed that the ADC had held its second in conjunction with the Polar Data Forum in October 2015. The key activities of the ADC are

- Documenting and understanding the Arctic data management ecosystem
- Identifying and promoting common metadata elements
- Engaging in data citation and publication movement
- Communications, outreach and partnership

In addition, the Committee had developed a new Executive structure, worked on the revision of its Terms of Reference and established a new web site.

CBM atlas – updates and review

Eva Kruemmel (ICC) reported from a review of community-based monitoring (CBM) in the Arctic. The report highlights these good practises: 1) Build capacity, 2) Co-produce observations and utilize IK, 3) Recognize and engage diversity within communities, 4) Adapt technologies to respond to community information needs and infrastructure inequities, 5) Scale observations and support network building, 6) Use CBM to inform decision-making and natural resource management, 7) Develop data management protocols for CBM and IK, and 8) Sustain CBM Programs.

She emphasised that SAON can support the further development of CBM, and saw a particular role for SAON within 1) Supporting identification of best practices and standards for community involvement, 2) Promoting data and methods standardization, 3) Disseminating ethics frameworks for CBM and observing programs based on IK, 4) Supporting the development of platforms that facilitate connection and network building among CBM initiatives, and 5) Ensuring involvement of CBM practitioner perspectives in SAON working groups and processes.

Atmospheric theme – updates and review

Vito Vitale presented (6) the scope and coverage of this initiative:

- Picture of spatial distribution of atmospheric observations in the Arctic at different levels of accuracy:
 - any related activity,
 - grouped/sub-divided by topics, atmospheric region
 - grouped by networks
 - grouped in categories (level of co-located measurements)
 - level of continuity/historical record

- Identify status of observations with respect scientific questions, users, stakeholder needs (including modellers, space Agencies, ...)
- Cover Arctic as well sub-Arctic region (flexible - no need to be precise and exclusive)

The next steps should include using the EU H2020 call on 'Integrated Arctic Observing System', but he would also like to see a closer dialogue with national meteorological Institutes. He finally wanted SAON CON and specifically the International Arctic Systems for Observing the Atmosphere (IASOA) to play a role.

Fisheries theme – updates and review

In his presentation (7) Phil Mundy explained about the “Joint Program of Scientific Research and Monitoring Central Arctic Ocean and Adjacent Seas” (JPSRM), which is an international cooperation to collect the information necessary to support international fisheries negotiations in the central Arctic Ocean. The background is that no one nation has the capabilities to conduct quantitative Arctic fish stock biomass estimation. He believed that SAON CON could serve a role in identifying this information and mentioned specifically the work of Peter Pulsifer: ‘Mapping the Arctic Ocean Fisheries Ecosystem: using network science and linked data to enhance data access’.

GTN-P – updates and review

Vladimir Romanovsky (USA) gave a presentation (8) on ‘Advances and Challenges in Development of a Permafrost Observing System’. He made reference to the UNEP report ‘Policy Implications of Warming Permafrost’ that had recommended to ‘create national permafrost monitoring networks’, and this had led to establishing the ‘Global Terrestrial Network on Permafrost (GTN-P)³. The purpose is to operate a monitoring network, in order to provide consistent long-term data series of selected permafrost parameters and to assess their state and changes based on field measurements over time.

A database system had been designed and developed to organise observational data, and the database had been launched in 2015. The database had been funded through an EU project (PAGE21), but this funding had terminated and currently the system was without funding.

Wrap up and next steps

Lisa Loseto closed the meeting and encouraged the participants to provide input to CON’s inventory activities.

³ www.gtnp.org

Appendix 1: Agenda

SAON Committee on Observations and Networks (CON)
Second Face-to-Face Meeting
Location: Room 303, Guening
Monday, March 14th, 2016, 9:00 – 3:00pm

Draft AGENDA

Meeting Objective: Review state of Inventories for nations, networks, and themes as they pertain to deliverables under SAON CON as well as support external interests such as EU PolarNet

Chairs: Lisa Loseto, SAON CON Chair, Jan Rene Larsen, SAON Secretariat

Morning: Nation and network focused inventories

09:00 – 9:30	Welcome <ul style="list-style-type: none">• Introductions• Approve agenda and meeting objective
9:30 – 10:00	Review of nation and network inventories
10:00 – 10:15	Health Break
10:15 – 11:00	Round Table discussion and updates regarding inventories
11:00 – 11:30	Finalize a plan for submission to EU PolarNet

Afternoon: Themed inventories

11:30 – 12:00	Updates from ADC and/or CBO
12:00 – 1:00	Lunch Break
1:00 – 1:30	CBM atlas – updates and review
1:30 – 2:00	Atmospheric theme – updates and review
2:00 – 2:15	Fisheries theme – updates and review
2:15 – 2:30	GTNP – updates and review
2:30 – 3:00	Wrap up and next steps

Appendix 2: List of Participants

Affiliation	First name	Last name	Institute name	Mailing address	Phone	e-mail
Countries						
Canada	Susan	File	Polar Knowledge Canada	2464 Sheffield Road Ottawa, Ontario, K1B 4E5	+1 613 222 6117	susan.file@polar-polaire.gc.ca
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USA	Lillian	Alessa	University of Alaska, Anchorage			
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USA	Philip R	Mundy	NOAA, Alaska Fisheries Science Center Auke Bay Laboratories Juneau, Alaska			phil.mundy@noaa.gov
USA, ADC chair	Peter L.	Pulsifer	National Snow and Ice Data Center Cooperative Institute for Research in Environmental Science (CIRES) University of Colorado	449 UCB University of Colorado Boulder CO 80309	+1 303 619 4560 (Boulder) +1 613 620 7195 (Ottawa)	pulsifer@nsidc.org
USA	Vladimir	Romanovsky				
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Appendix 3: List of meeting documents and presentations

Agenda item	Document title
Review of nation and network inventories	<ul style="list-style-type: none">• Mail from Susan File (Canada), dated 03FEB2016• Mail from Susan File (Canada), dated 09MAR2016• Mail from Reidar Hindrum (Norway), dated 29FEB2016 (Attachment)• Mail from Miroslav Ondras (WMO), dated 02MAR2016• Link to CON Inventory Work Plan• Link to EU PolarNet - Inventory of existing monitoring activities
Themed inventories	Eva Kruemmel: CBM Review Executive Summary and link to CBM web atlas (www.arcticcbm.org)

List of presentations:

1. SAON CON (Committee on Observing Networks) by Lisa L Loseto (CON Chair) and Jan Rene Larsen (SAON Secretariat)
2. The International Network for Terrestrial Research and Monitoring in the Arctic by Hannele Savela (Finland)
3. Inventory of Italian activities in the Arctic by Vito Vitale (Italy)
4. Community Based Observing (CBO) by Lillian Alessa (USA)
5. An Overview of International Data Coordination Activities by Peter Pulsifer (ADC Chair)
6. Atmospheric Observation in the Arctic by Vito Vitale (Italy)
7. Joint Program of Scientific Research and Monitoring Central Arctic Ocean and Adjacent Seas JPSRM by Phillip R. Mundy (USA)
8. Advances and Challenges in Development of a Permafrost Observing System by Vladimir Romanovsky (USA)

The documents and presentations can be found at <http://www.arcticobserving.org/committees/con>

Appendix 4: Actions

Action No	Action	Who	When
1	Provide information on Arctic observational assets (networks, platforms, programs, projects) according to the CON inventory plan	Nations and organisations	1 st May