

WG 1 Breakout Session Agendas

All times are in UTC

At any time, please submit notes or comments through the comment box form:

<https://forms.gle/5tHpEhHMD65Ng9rW7>

8:00 - 11:00 DAY 1 EAST (March 31, Tuesday)

Goal: Evaluate structured models
Chair: Roberta Pirazzini
Co-chairs: Alice Bradley, Hank Loescher
Note taker: Anna Gebruk

Session agenda:

1. Welcome from chair, brief description of WG1 goals, AOS, and ROADS process (25 minutes)
 1. System engineering approach (10 min)
2. Presentations from three observing system organizations:
 1. Tonghua Wu, Chinese Academy of Sciences - State Key Laboratory on Cryospheric Sciences - Frameworks for observations of cryospheric change in China & application for Arctic settings (5-7 min)
 2. Jun Inoue, National Institute of Polar Research, Japan - Observations for Asian extreme weather prediction and Arctic maritime transport (5-7 min)
3. Open invitation for additional contributions (30 minutes):
 1. Do any other groups have a system in place for organizing observations? This is where we might have short presentations (<5 minutes) on the topic of models for structuring observing systems.
4. *[10 minute break]*
5. Split into randomly assigned breakout groups (5-8/group)
6. Discussion (45 minutes) (people self-select as discussion leader and note taker):

Template for discussion is available here:
https://docs.google.com/document/d/1c0MilpSdTyhcbNE_RL3oLiWYORZAoMnfirImkevUgY/copy

 1. What particular challenges do you see in implementing a structured model like these in the Arctic region?
 2. From the presentations we've seen, which aspects of models would work well in the Arctic?
 3. Which aspects would not work well?

4. What solutions can you come up with for those challenges?
7. *[10 minute break]*
8. Whole group discussion [50 minutes]:
 1. Each group makes a brief report of what they discussed
 2. Can we agree on any recommendations for a structured model for the ROADS process?
9. Plan for day 2, slide(s), homework questions

14:30 - 17:30 DAY 1 WEST

Goal: Evaluate structured models
Chair: Alice Bradley
Co-chairs: Hajo Eicken, Hank Loescher
Note taker: Anna Gebruk
Zoom monitor: Olivia Lee

Session agenda:

1. Welcome from chair, brief description of WG1 goals, AOS, and ROADS process (20 minutes)
 1. System engineering approach (10 min)
2. Presentations from three observing system organizations:
 1. Jari Haapala, Finnish Meteorological Institute - Global Ocean Observing System framework and coordinated Arctic observations (5-7 min)
 2. Tom Christensen, Circumpolar Biodiversity Monitoring Program (CBMP) - Lessons from CBMP for more broadly coordinated observations of Arctic change (5-7 min)
 3. Olivia Lee, University of Alaska Fairbanks & Finn Danielsen, Nordeco - Community-based monitoring for living resource management (5-7 min)
3. Open invitation for additional contributions (15 minutes):
 1. Do any other groups have a system in place for organizing observations? This is where we might have short presentations (<5 minutes) on the topic of models for structuring observing systems.
4. *[10 minute break]*
5. Split into randomly assigned breakout groups (5-8/group)
6. Discussion (1 hour) (people self-select as discussion leader and note taker): Template for discussion is available here:
https://docs.google.com/document/d/1c0MilpSdTyhcbNE_RL3oLiWYORZAoMnfirImkeyUgY/copy

1. What particular challenges do you see in implementing a structured model like these in the Arctic region?
2. From the presentations we've seen, which aspects of models would work well in the Arctic?
3. Which aspects would not work well?
4. What solutions can you come up with for those challenges?
7. *[10 minute break]*
8. Whole group discussion [40 minutes]:
 1. Each group makes a brief report of what they discussed
 2. Can we agree on any recommendations for a structured model for the ROADS process?
9. Plan for day 2, slide(s), homework questions

9:30 - 12:00 DAY 2 EAST (April 1, Wednesday)

Goal: Linking SBAs to EAVs
 Chair: Roberta Pirazzini
 Co-chairs: Alice Bradley, Hank Loescher
 Note taker: Anna Gebruk

Session agenda:

1. Welcome from chair, brief description of session goals and ROADS process (10 minutes)
2. Short presentations (no more than 5 minutes) and open invitation for additional contributions (25 minutes):
 1. How do you evaluate the most important variables?
 2. How do you link these to areas of societal good?
3. Split into topically-assigned breakout groups (ideally 5-8/group)
 1. People self-select as discussion leader and note taker
4. *[10 minute break]*
5. Discussion: EAV selection (20 min): Template for discussion is available here:
<https://docs.google.com/document/d/1vXs7pWEWaQDrHW0psh9vhwub3MUXIJ3bWVDRMfHnMh0/copy>
 1. What makes an impactful variable/process?
 2. How do you make that decision?
6. Discussion: SBA and requirements (30 min)
 1. Work through the provided template
 2. Example available at:
https://docs.google.com/document/d/1eHt09Y_vrv1vr6-NpJmhKO5GhUyYFWDGHZHM1uvqo9c/edit?usp=sharing

7. [10 minute break]
8. Whole group discussion [40 minutes]:
 1. Each group makes a brief report of what they discussed
 2. Can we agree on any recommendations for linking SBAs to EAVs in the ROADS process?

14:30 - 16:00 DAY 2 Cross-cutting

1. Open discussion (Hajo and/or Hank) (60 min)
 - a. Identify [questions or issues that cut across AOS Working Group](#) themes and that would benefit from further joint discussion to bring AOS WGs together and develop input for the AOS Conference Statement and Recommendations. [25 min]
 - b. Rank the issues identified under 1a with a brief poll [5 min], and create a small number of breakout discussion groups to explore further [30 min]
 - Use this template to capture content of discussion:
https://docs.google.com/document/d/1YdnXj7aLVzrrySmDy5E66b_497hanyhKlopaysBXsfY/copy

[if not enough time during 60 min time slot, then top-voted group may stay on in the Zoom breakout room after activity 2 has ended and continue discussion until 16:25 when next session starts]

Reconvene after 30 min in breakout sessions for Part 2
2. Workflow activity (Lil) (30 min)
 - a. Template:
<https://docs.google.com/document/d/1E5uHILVIUhgam9CoADATU8aV1XCMv4BpraL9AIY6Qys/copy>

16:30 - 19:00 DAY 2 WEST

Goal: Linking SBAs to EAVs
Chair: Alice Bradley

Co-chairs: Hajo Eicken, Hank Loescher
Note taker: Anna Gebruk
Zoom monitor: Olivia Lee

Session agenda:

1. Welcome from chair, brief description of session goals and ROADS process (10 minutes)
2. Short presentations (no more than 5 minutes) and open invitation for additional contributions (15 minutes):
 1. How do you evaluate the most important variables?
 2. How do you link these to areas of societal good?
3. Split into topically-assigned breakout groups (ideally 5-8/group)
 1. People self-select as discussion leader and note taker
4. Discussion: EAV selection (20 min): Discussion: EAV selection (20 min): Template for discussion is available here:
<https://docs.google.com/document/d/1vXs7pWEWaQDrHW0psh9vhwub3MUXIJ3bWVDRMfHnMh0/copy>
 1. What makes an impactful variable/process?
 2. How do you make that decision?
5. *[10 minute break]*
6. Discussion: SBA and requirements (40 min)
 1. Work through the provided template
 2. Example available at:
https://docs.google.com/document/d/1eHt09Y_vrv1vr6-NpJmhKO5GhUyYFWDGHZHM1uvqo9c/edit?usp=sharing
7. Whole group discussion (50 minutes):
 1. Each group makes a brief report of what they discussed
 2. Can we agree on any recommendations for linking SBAs to EAVs in the ROADS process?

21:30 - 24:00 DAY 2 Alaska

Goal: Consolidating recommendations

Chair: Hajo Eicken
Note taker: Olivia Lee
Zoom monitor: Krista Heeringa

Session agenda:

1. Chair: Review AOS outcomes/reporting plan and what we're trying to produce
 - > Conference statement : ASM, prioritization
 - > Recommendations for ROADS
 - > Next steps
2. Recap highlights of previous discussions
 1. Existing observing system models (i.e., GOOS) do a lot of things well, and for discipline-specific products we probably don't need to reinvent anything.
 - 2. The value of the Arctic observing system (and key outcome of ROADS) would be in the cross-sector information and requirements sharing**
 3. So an Essential Arctic Variable would be a concept that is a) important to b) multiple sectors/stakeholder groups. The key part is that it would be broadly impactful, and perhaps EAVs would be better named Shared Arctic Variables
 - i. Predictive potential or forecasting ability as an indicator of candidate EAVs
 - ii. Local and regional information needs (impact on decision making and planning)
 - iii. Representative of key elements of Arctic social-environmental systems
 - iv. Others (in notes)
 4. One way that this shared variable concept would be useful is that different use communities could propose observable or measurement pairings, so that there are recommended additional measurements to make that would increase the potential utility of any one measurement campaign.
 5. A particularly important part of similar global efforts is standards on measurement procedures. That would have a lot of value in the Arctic, but also be hard to universally implement given the range of types of observations (and limited equipment market)
 6. Instead we could do 'types' of observations, so for a given variable there are sets of measurement standards AND supplemental measurements (across disciplines) that would guide what and how things are being measured.
 - i. Food security approach gives model for how different types and fields of observations should be integrates
 - 7. Expert panels would define these, and should be broadly inclusive and include rounds of community comment to best reflect a range of perspectives.**

8. Arctic indigenous community collaboration throughout the process including participation by and crossover with the food security working group is critical for success.
 9. Regionality and local focus is likely a key starting point for building out this model [Bering Sea as proposed starting place, Barents sea possible parallel]
 10. Existing groups (Circumpolar Biodiversity Monitoring Program, indigenous observers and users, Global program (GCW or GOOS), and one or two other groups) might be able fill in that level of detail
 11. Opportunity for and need for continued capacity building in communities (for data collection, field work, local management and direction of research programs). How do we fund additional jobs and training to make opportunities in the local communities?
 12. Language is a barrier in the process: we have opportunities to build shared vocabulary and also to take extra time to explain and ask for clarification
3. Discussion:
1. What are the key ideas that have come out of the WG1 discussion?
 2. What recommendations for actions can we make?
 3. What are the steps moving forward?

- > Maintain momentum with WG1, 3, 4, enable working together moving forward
- > How do we build inclusive and representative expert groups?
- > Regional group model (Bering would include international group, engage through PAG)

How can we work with Bering sea community in response to covid-19?

- RV need to get a research permit. Requests can be made during the permit review process
- This could be expanded with the right working group
- This is an opportunity to groups to be helpful and responsive, if they have help knowing what to do/ask

Off year ideas:

- Broad support
- Thematic or regional workshop

11:00 - 13:00 DAY 3 (April 2, Thursday)

Goal: Consolidating recommendations
 Chair: Alice Bradley
 Note taker: Anna Gebruk

Session agenda:

1. Chair: Review AOS outcomes/reporting plan and what we're trying to produce
 - > Conference statement : ASM, prioritization
 - > Recommendations for ROADS
 - > Next steps
2. Recap highlights of previous discussions
 1. Existing observing system models (i.e., GOOS) do a lot of things well, and for discipline-specific products we probably don't need to reinvent anything.
 - i. Global efforts should have Arctic components (i.e., Arctic-GOOS)
 2. **The value of the Arctic observing system (and key outcome of ROADS) would be in the cross-sector information and requirements sharing**
 3. So an Essential Arctic Variable would be a concept that is a) important to b) multiple sectors/stakeholder groups. The key part is that it would be broadly impactful, and perhaps EAVs would be better named Shared Arctic Variables
 - i. Predictive potential or forecasting ability as an indicator of candidate EAVs
 - ii. Local and regional information needs (impact on decision making and planning)
 - iii. Representative of key elements of Arctic social-environmental systems
 - iv. Others (in notes)
 4. One way that this shared variable concept would be useful is that different use communities could propose observable or measurement pairings, so that there are recommended additional measurements to make that would increase the potential utility of any one measurement campaign.
 - i. Supersites could be gold standard of cross-discipline and integrated observations.
 - ii. Major field campaigns fill in this roll in the central Arctic (funded data management infrastructure critical)
 5. A particularly important part of similar global efforts is standards on measurement procedures. That would have a lot of value in the Arctic, but also be hard to universally implement given the range of types of observations (and limited equipment market). We should still have recommendations for standard measurements.
 6. Instead we could do 'types' of observations, so for a given variable there are sets of measurement standards AND supplemental measurements (across disciplines) that would guide what and how things are being measured.
 - i. Food security approach gives model for how different types and fields of observations should be integrates
 7. Expert panels would define these, and should be broadly inclusive and include rounds of community comment to best reflect a range of perspectives.

8. Arctic Indigenous community collaboration throughout the process including participation by and crossover with the food security working group is critical for success.
 9. Regionality and local focus is likely a key starting point for building out this model [Bering Sea as proposed starting place, Barents sea possible parallel]
 - i. Possibly also a sector focus with (either shipping, tourism, energy/mineral extraction, military, fisheries/aquaculture, etc)
 10. Existing groups (Circumpolar Biodiversity Monitoring Program, Indigenous observers and users, Global program (GCW or GOOS), and one or two other groups) might be able fill in that level of detail. Also PAME, APECS, Ikaarvik, UArctic
 - i. This draws a lot of the same people, not necessarily advancing things as quickly as it could be with a more inclusive/expansive search
 11. Opportunity for and need for continued capacity building in communities (for data collection, field work, local management and direction of research programs). How do we fund additional jobs and training to make opportunities in the local communities? *The current covid-19 crisis emphasises the need for local expertise and capacity. This is an ongoing need for equity and financial reasons in the Arctic observing community*
 12. Language is a barrier in the process: we have opportunities to build shared vocabulary and also to take extra time to explain and ask for clarification
3. Discussion:
1. What are the key ideas that have come out of the WG1 discussion?
 2. What recommendations for actions can we make?
 3. What are the steps moving forward?

- > Maintain momentum with WG1, 3, 4, enable working together moving forward
- > How do we build inclusive and representative expert groups?
- > Regional group model (Bering would include international group, engage through PAG)

How can we work with Bering sea community in response to covid-19?

- RV need to get a research permit. Requests can be made during the permit review process
- This could be expanded with the right working group
- This is an opportunity to groups to be helpful and responsive, if they have help knowing what to do/ask

Off year ideas:

- Broad support for something happening
- Very specific thematic or regional workshop
 - Possible link to ongoing activities (direct participation and/or guidance from SAON)
 - Need to be clear on workshop goals and what it's trying to accomplish

- Probably do this as a virtual meeting
- Capacity building and community outreach

Early career engagement