

## Arctic Observing Summit

### “Stakeholder Perspectives” White Paper Synthesis

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#### Introduction

Eight white papers and three statements were submitted in the category identified by summit organizers as “stakeholder perspectives.” The submissions covered a wide range of topics and perspectives, from community-based monitoring (Knopp et al.) to health surveillance (Young et al.), from indigenous science (Alessa et al.) to psychology (Wensing), from specific efforts (Juniper et al.) to general principles (Johnson et al.). The common element is a tie to Arctic communities, defined in various ways. While some general principles emerge from the white papers and statements, the topics and findings are often complementary rather than overlapping or reinforcing. There are a few apparently contradictory messages, such as the promise (Murray et al.) or drawbacks (Alessa et al.) of electronic technology and social media, but the contexts for such judgments are different enough that the arguments are not actually in direct opposition.

This “synthesis” is thus less an integration of perspectives on a particular topic than it is a review of various perspectives on related but not identical topics. Its focus is on what can be done to advance observations and monitoring that involve, one way or another, people who live, work, or otherwise spend time in the Arctic. The key messages are that:

- the bulk of future efforts should be to put into practice the various ideas that have been put forward, to try them out and see what works;
- proponents of an Arctic observation network should recognize that “stakeholder perspectives” covers many important topics and thus cannot be distilled into a single activity that accomplishes everything; and
- effective, lasting monitoring and observations will not take place without strong and meaningful involvement by the “community” or “stakeholders” in question throughout the design, implementation, analysis, and application of the activities undertaken.

#### Key Findings

The white papers and statements provide various descriptions of “Arctic communities” or the target participants in proposed observations and monitoring. They agree that the capacity for making and documenting observations by Arctic communities is at present greatly underutilized, to the detriment of our collective understanding of the Arctic system and thus to the detriment of our collective ability to take appropriate actions in light of the range of changes taking place in the region today. Young et al. point out that not everything can or should be monitored, and that choices need to be made based on importance and resource limitations. Keskitalo et al. make the case that the choice of what to monitor is typically driven by the interests of one or more stakeholders, and can thus vary widely from one situation to another. Given the range of interests in the Arctic today, from indigenous peoples to extractive industries to military to tourists, it is not surprising that monitoring priorities may diverge greatly from one perspective to another.

The submissions propose a range of approaches, from the broad involvement of “citizen science” (Murray et al.) to efforts that target highly experienced individuals (Alessa et al.), from the deployment of specific monitoring devices (Juniper et al.) to broad enquiries across the entire social-ecological system (Alessa et al., Petrov et al.). Some are more heavily focused on the role of the community in designing the activities, whereas others propose consistent indicators to be tracked across many communities and regions (Petrov et al., Young et al.). One or more papers suggest a combination, with some locally identified topics along with common elements that allow one to place local observations in a broader context and to determine how broader trends affect variables of local significance (Knopp et al.). A consistent challenge is that many of the proposed approaches have not been put into practice enough times and in enough places in the Arctic to allow a full evaluation of whether they work and why. More experience is thus needed to assess how limited monitoring and observation resources—including funding but also the time and attention of community members—can best be deployed to achieve the goals of the communities in question as well as the larger Arctic observing community.

In addition to the ability to monitor much more of the Arctic and to do so throughout the year, proponents of local involvement in monitoring also point out that monitoring should lead to effective action (Russell, Reinhart). Monitoring for its own sake offers limited benefits. Monitoring in order to identify threats or problems (Alessa et al.), or to support effective resource management (Russell, Knopp et al.), is likely to appeal to a wider constituency and thus generate broader and longer-lasting support. Danielsen et al. (2010) found that higher levels of community involvement in monitoring lead to more rapid implementation of actions in response to problems that are identified. Not surprisingly, several of the white papers and statements emphasized how monitoring and observation can translate into actions that benefit the community in question.

### Challenges

Several submissions pointed out deficiencies in current monitoring efforts, baseline data, or even basic understanding of various aspects of the Arctic System (including humans). Many existing data collection efforts may be in part the result of years of adding on ideas and topics, or be based on what was important in the past. Since monitoring priorities will depend greatly on the interests of the individual, community, agency, institution, or other stakeholder; the broader the participation, the more likely there will be a number of monitoring topics all gathered together into one program. This is not necessarily a drawback, but may pose challenges for explaining why certain things need to be included, or for motivating monitors to pay due attention to tasks that are not obviously important from all points of view. This is an important consideration when assessing how local or other community-based monitoring connects with a pan-Arctic effort. What is coherent and consistent at one scale may not appear so at another scale. Communication, feedback, and the sharing of results and ideas may help overcome apparent disconnects.

Some submissions pointed out the difficulties of bridging conceptual gaps between (Western) science and traditional knowledge or indigenous and place-based science. Indeed, such terms were not used consistently from paper to paper, and some authors questioned terms that others used without hesitation. Resolving such differences should not, in my opinion, be a high priority. Terminology is important, but imposing consistency across very different efforts is likely to

produce a false conformity rather than clarity. In addition, specific terms may be appropriate to the context in which they are used, and applying certain terms too broadly can diminish their meaning.

This divergence also applies to the idea of identifying best practices or best methods. The ideas proposed in the white papers and statements cover such a vast range of topics and approaches that there can be no single method or approach that is optimal for every one of them. This is in part the result of lumping so many papers into the “stakeholder perspectives” category, and it may be useful to divide the ideas into groups such as “community-based monitoring” (a strong and in-depth role for the community), “citizen science” (engaging a broad constituency but likely with less involvement of participants in design and analysis), “expert engagement” (focusing on a few key individuals with deep understanding), “research assistance” (having local residents help carry out a program on behalf of researchers), or other such classes depending on what exactly is being sought from the community in question.

### Issues

The white papers and statements identified many issues to be observed or monitored, from health (Young et al.), socio-economic conditions (Petrov et al.), and sustainability (Wensing) to environmental change (Murray et al.), adaptation (Alessa et al.) and the effects of oil and gas development (Knopp et al.). All of these issues matter to Arctic communities of any kind, and all are aspects of the greater social-ecological system that comprises the Arctic. Monitoring all of them at the same time may be difficult logistically and financially, and different communities will have different priorities even within these categories.

Some degree of overall coordination may be appealing, but difficult to put into practice. At the same time, having monitoring proponents competing with one another for community attention seems an inappropriate way of setting priorities. Discussions about a suite of monitoring targets and objectives should take place at different scales, from an individual geographical community, to regions, nations, and the circumpolar North, and also across vocational or avocational communities. Planning, while important, should also not be allowed to strangle activity, innovation, and experimentation. As noted earlier, a major gap at present is the dearth of experience upon which to draw when assessing what can work and how. Getting more experience must remain a high priority for stakeholder engagement.

### Recommendations

The white papers and statements that make recommendations propose largely distinct courses of action. It is not my place to rank the recommendations by priority, and perhaps not the place of the Arctic Observing Summit to do so either. As noted above, and discussed in greater depth in Keskitalo et al., observing and monitoring priorities depend a great deal on perspective, and determining which perspective outweighs another is an exercise of questionable merit. A more practical limitation will be which ideas can gain support from the community or stakeholders in question, as well as funding to put the ideas into practice.

At least three recommendations apply broadly to the ideas suggested in the various submissions. First, reliable and sufficient funding is necessary for any observation or monitoring project, especially those that require coordination with and a strong participatory (if not leadership) role

for communities or other stakeholders. The goals of many of the projects or programs suggested in this category are aspirational, in that they reflect what proponents believe can happen. There is far less actual experience to draw on to determine if those aspirational goals are realistic, implausible, or timidly unambitious. It is important, therefore, to carry at least a few projects through in depth, rather than allowing many projects to start but none to reach full maturity. Testing a variety of approaches will tell us more than replicating the same model over and over.

Second, observations and monitoring at the community scale should not be done in isolation from one another or from other monitoring efforts. Instead, some degree of connection and coordination is appropriate, so long as it does not stifle local innovation, but instead allows local insights to be assessed in a wider context, and wider changes to be understood in terms of local impacts. This kind of multi-scale interaction will require careful attention and a commitment to communication, including participation by local observers in meetings and discussions that pertain to larger-than-local scales as well as their own sphere of activity. Applying Alessa et al.'s comments about face-to-face meetings in a different context, there is no substitute for direct interactions and building relationships among practitioners.

Third, data management is an essential component of a successful observation or monitoring effort, no less in the “stakeholder perspectives” category than for any other component of an Arctic Observing Network. Data management for traditional knowledge, indigenous science, and other topics is not entirely straightforward, however. The Exchange for Local Observations and Knowledge in the Arctic (ELOKA, [www.eloka-arctic.org](http://www.eloka-arctic.org)), a project funded by the U.S. National Science Foundation, is one effort to address some of the issues surrounding data management and community-based projects. These issues include control over data and access thereto, representation of non-quantitative data and information in formats outside standard data management techniques, making connections between community-generated data and information from other sources, and so on. A critical part of data management in this context is making sure the data can be readily applied to important problems, by the community itself as well as by others.

### Conclusions

The ideas proposed in the “stakeholder perspectives” category form a diverse and robust suite of activities, covering a range of important topics. Insofar as the ideas focus on methods for community engagement, they are relevant for most if not all observing and monitoring topics across the Arctic, and thus speak to all the themes being discussed at the Arctic Observing Summit. The common thread of all the papers is the importance of engaging people beyond the scientific community in gathering, interpreting, and acting on observational data from the Arctic. This last step, acting on the data, is particularly important, as it is rarely the scientific community that carries things through to this step. Involving more people in the earlier stages can only increase the number of people, in various roles in society, who can take that critical step of making a difference based on what has been learned.

The challenges in putting these ideas into practice are substantial and span local concerns (how to recruit and retain local coordinators), regional concerns (how to coordinate activities in many communities), and national and international ones (how to connect local concerns and observations with broader ones and vice versa). These challenges can only be overcome by

putting ideas into practice and learning from the experience of doing so. The range of ideas proposed in this category is too broad to be a useful starting point for a coordinated effort. Instead, smaller groupings with closer affinities of topics or methods will provide a better basis for sharing experiences and learning from one another. But the essential need now is to put ideas into practice: to engage fully with the communities and stakeholders relevant to specific topics, to see what works so that successes can be adapted by other communities or stakeholders, and to use the resulting information and insights to better look after the Arctic System and all those who are part of it.

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