

A Call for a Research Clearinghouse in Alaska

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Three recent working groups sponsored by the state of Alaska have all called for coordinated clearinghouse functions to ensure scientific research and monitoring in Alaska meets the needs of Alaskans. These include the most recent Alaska Arctic Policy Commission report and implementation plan (January 2015); the Northern Waters Task Force report (January 2012); and the Research Needs Work Group report to the Alaska Climate Change Sub-Cabinet (June 2009). They are reinforced by recommendations from Alaska Governor Bill Walker's Transition Team on Climate Change and the Arctic (November 2014).

The recommendations are taken directly from the entities' final reports. They highlight the need identified by multiple groups of Alaskans for a more coordinated research and monitoring agenda for Alaska, especially in light of a rapidly changing Arctic. Given that these recommendations have maintained their currency since 2009, they should be considered a high priority for discussion by the Arctic research community.

Alaska Climate Change Sub-cabinet's Research Needs Work Group

<http://climatechange.alaska.gov/>

Through Administrative Order 238 then-Governor Sarah Palin established, a Sub-cabinet on Climate Change in 2007 to advise her on the preparation and implementation of an Alaska climate change strategy. The Sub-cabinet established four advisory groups:

- Immediate Action Working Group (IAWG) focusing on near term actions needed in Alaska;
- Mitigation Advisory Group (MAG) to identify and propose measures to mitigate Alaska's greenhouse gas emissions;
- Adaptation Advisory Group (AAG) to identify and propose methods to adapt to the impacts of climate change on Alaska; and
- Research Needs Work Group (RNWG) to recommend research strategies for mitigating greenhouse gases and adapting to the impacts of climate change.

The RNWG was established to assist the Sub-cabinet in identifying needed research to implement mitigation and adaptation strategies identified by the Advisory Groups, and ultimately, the Sub-cabinet. Research needs were broadly defined and included measures to implement or encourage: data collection and management; monitoring; addressing workforce needs; scientific research; the development of engineering standards, practices and other support tools; infrastructure needs and improvements; technology development; the assembly of traditional knowledge; and, modeling.

In describing climatic changes in Alaska and acknowledging that the impacts could be both potentially negative as well as beneficial, nearly everyone unanimously laments the

paucity of data, analyses, information infrastructure, and decision-support and sharing tools necessary for effective assessment and response to such changes. They also acknowledge that there is no single agency, organization, or collaborative association within Alaska that is tasked with systematically coordinating the identification, collection, compilation, analysis, and publishing of climate change data and research. This important task is required to ensure the quality necessary to effectively support decision-making and evaluate and manage multifaceted risks and threats such as those associated with climate change in Alaska. However, there are many scientific agencies and organizations collecting and interpreting natural and economic data in Alaska that can be used in an overall climate change response strategy. The challenge is to coordinate the many different data sets, identify the information and data gaps for climate related policy and mitigation/adaptation efforts, and make sure sufficient funding is available and distributed to do the work.

As part of its vision, the RNWG envisioned an integrated research and knowledge management infrastructure supporting multi-disciplinary systematic analyses and decision-making as an integral part of the climate change strategy that will allow Alaska to effectively, economically, and sustainably adapt to and mitigate the consequences of climate change.

As a general strategy, the RNWG members recognized that addressing the impacts to Alaska from climate change and the value of efforts to mitigate greenhouse gases will be most effective through a systematic approach. That approach includes establishing mechanisms to ensure communication and coordination among State agencies and with federal agencies and with stakeholders to provide research-derived information to address multi-jurisdictional needs in mitigating greenhouse gas emissions and adapting to climate change.

In its report, the RNWG encourages the leaders of the Executive Branch, the Legislature, and the University to assume a more proactive and collaborative role in planning, developing, and clarifying a strategic vision, goals, and performance measures for State government in promoting sustainable communities and addressing climate change in Alaska. The strength and effectiveness of this integrated strategic planning will be a function of the specificity of the state's roles, focus on long-term sustainability, and extent of collaboration with stakeholders. The RNWG believes that this strategic planning is necessary for, and will be the most effective way to prioritize the research needs identified herein. There is a general consensus that a systematic approach within a multi-disciplinary research strategy will provide the best science-based decision making tools for proactive solutions. It takes time, however, to transform research data to useful information. Identifying research today, with particular attention to the cross cutting needs, will support better decisions in a shorter time frame and ensure that Alaska leads the nation in successfully adapting to the impacts of climate change, while mitigating the greenhouse gas emissions as part of our national role.

Alaska Northern Waters Task Force

http://housemajority.org/coms/anw/pdfs/27/NWTF_Full_Report_Color.pdf

In 2010, the Alaska State Legislature established the Alaska Northern Waters Task Force (ANWTF) to identify opportunities to increase the state's engagement with these issues. On both the state and federal level, the task force has found many urgent needs. The following are its topmost recommendations:

1. Statewide public testimony gathered by the task force made it clear that the state and federal governments must provide Alaskans with meaningful opportunities to participate in Arctic policy and Outer Continental Shelf development decisions. Many local government officials, tribal government representatives, and individuals expressed a need for timelier, more frank, and more thorough information from state and federal authorities regarding policies and activities off Alaska's coasts. The task force believes that consistent, structured communication and consultation—particularly with those Alaskans likely to be most impacted by evolving conditions—is the best way to build consensus, advance responsible policies, and stimulate broadly beneficial economic development.

2. The state of Alaska has only just begun to grapple with the challenges and opportunities developing in the far north. It is imperative the state be strategically involved and in a leadership role in the development of policies affecting the state, its communities, and citizens. It is therefore among the task force's highest priorities to press for the creation of a commission to develop a comprehensive state strategy for the Arctic. As the Arctic changes, the decisions Alaska faces will continue to evolve and grow in complexity. An Alaskan Arctic Commission will enable Alaska to more effectively respond to unfolding developments and will jumpstart Alaska's preparations to ensure that the interests of the state and its people are protected.

Research

Worldwide climate change is already having an impact on the Arctic, where temperatures are rising twice as quickly as those in more southern latitudes. Profound transformations are underway in its complex ecosystems. These changes are expected to trigger unprecedented degrees of human activity in the region. As a consequence, transformation in the far north will accelerate all the more, not just environmentally, but also on socioeconomic levels. Under these circumstances, the need for wide-ranging scientific research and monitoring in the Arctic has never been more pressing. We must continue to gather essential baseline information about the environment and its dynamics in order to become better able to discern shifting conditions. In turn, our understanding of the implications of changes there will increase, and we will improve our ability to prepare for and mitigate impacts.

1. The ANWTF recommends that the state of Alaska and the federal government identify priorities for Arctic research. By ranking priorities funding can be targeted more effectively and research can be better coordinated. Major knowledge gaps will be closed far more quickly.

2. The ANWTF recommends improving the exchange of research information and

integration of data management. Faster and more extensive integration of data collected by state and federal agencies, academics, and industry would yield enormous benefits for all stakeholders.

3. The ANWTF recommends increased long-term monitoring of the Arctic, including routine surveys of key chemical, physical, and biological parameters of the Beaufort and Chukchi Seas and associated coastal plains. In order to better understand, quantify, and predict the effects of changes in both marine and terrestrial Arctic ecosystems, Alaska must increase our long-term monitoring of a wide range of environmental characteristics.

Alaska Arctic Policy Commission Final Report & Implementation Plan

http://www.akarctic.com/wp-content/uploads/2015/01/AAPC_Exec_Summary_lowres.pdf

Policy Statement #4: Value and strengthen the resilience of communities, including efforts to:

- Recognize Arctic indigenous peoples' cultures and unique relationship to the environment, including traditional reliance on a subsistence way of life for food security, which provides a spiritual connection to the land and the sea;
- Build capacity to conduct science and research and advance innovation and technology in part by providing support to the University of Alaska for Arctic research consistent with state priorities;
- Employ integrated, strategic planning that considers scientific, local and traditional knowledge;
- Safeguard the fish, wildlife and environment of the Arctic for the benefit of residents of the state;
- Encourage more effective integration of local and traditional knowledge into conventional science, research and resource management decision making.

Arctic Policy Implementation Plan: Strengthen Science and Research

Alaska should pursue strategies to broaden and strengthen the influence of its agencies, its academic experts and its local governments and associations. Alaska's future prosperity largely depends on the scientific, technological, cultural and socioeconomic research it promotes in the Arctic in the coming years and its ability to integrate science into decision-making. Ongoing and new research in the Arctic must be designed to help monitor, assess and improve the health and well-being of communities and ecosystems; anticipate impacts associated with a changing climate and potential development activities; identify opportunities and appropriate mitigation measures; and aid in planning successful adaptation to environmental, societal and economic changes in the region.

The vast amount of science and research conducted in the Alaskan Arctic encompasses a broad spectrum of interests, from the public to the private sector including non-governmental organizations, the state University system and many others. It is crucial that the state of Alaska be involved in the various forums that build the information base available to policy makers. In addition, while local and traditional knowledge and

subsistence activities inform many of the above entities' research priorities, activities and findings, regional traditional knowledge must receive a higher level of consideration.

How researchers can better collaborate with local people and include traditional knowledge into their projects is receiving more attention. Observational systems are among the most effective means for monitoring and documenting change, improving inputs to models and informing permitting decisions. They are also a valuable way to meaningfully involve Arctic communities in research activities. Process studies can add to this knowledge and help reveal the forces influencing ecosystem structure and function. In addition, the transfer of findings from process studies to models can reduce uncertainties and improve the accuracy of projections.

While models have practical use in developing strategies for managing wildlife and for sustainable and adaptable communities, civil and economic development infrastructures, it remains necessary to clearly identify the limitations of models that are developed to aid in decision-making. Even as baseline data and component parameterizations improve, awareness of these limitations assists the evaluation of contingencies and determination of proper levels of precaution in management and strategic approaches.

State government priorities pertaining to the Arctic are influenced by state objectives. Establishment of these priorities will ensure organized state input to federal, local and institutional decisions on Arctic research and monitoring needs.. As the state's engagement with Arctic issues increases, the executive branch will play an important role in improving coordination of state agencies' positions in Arctic research and associated matters. Alaska should pursue strategies to broaden and strengthen the influence of its agencies, its academic experts and its local governments and associations. Benefits include an increase in the knowledge available to decision makers in both the public and private sectors; strengthening and refining of findings through data synthesis; reducing duplicative research; and enhancing the effectiveness of interdisciplinary research efforts. More coordinated research efforts driven by state of Alaska priorities would have significant impact for policy makers and decision makers, allowing them to address opportunities and challenges in the emerging Arctic.

- Ensure state funding to, and partnership with, the University of Alaska for Arctic research that aligns with state priorities and leverages the University's exceptional facilities and academic capacity.
- Increase collaboration and strengthen capacity for coordination within the Arctic science and research community.
- Strengthen efforts to incorporate local and traditional knowledge into science and research and use this community-based knowledge to inform management, health, safety, response and environmental decisions.
- Improve, support, and invest in data collaboration, integration, management and long-term storage and archiving.
- Support monitoring, baseline, and observational data collection to enhance understanding of Arctic ecosystems and regional climate changes.

- Invest in U.S. Arctic weather, water and ice forecasting systems.
- Update hydrocarbon and mineral resource estimates and mapping in the Alaskan Arctic.

Alaska Governor Bill Walker 's Arctic Policy and Climate Change Transition Team Report

http://gov.alaska.gov/Walker_media/transition_page/arctic-policy-and-climate-change_final.pdf

Recommendation # 3: Developing a better understanding of our changing climate, oceans, and environment.

Effective management, sustainability, and responsible development depend on understanding affected environments and how those environments are changing. The changes occurring due to warming and ocean acidification are not limited to only the Arctic—they will affect all Alaskans and all parts of Alaska. While increased attention to the Arctic has brought with it new research, the State can and should play an active role in identifying research and monitoring priorities, ensuring that decisions are based appropriately on science, and coordinating among the various scientific entities. Developing and using a better understanding our oceans and terrestrial ecosystems, including the effects of changing climate and ocean acidification, is key to sustainable choices for the future.

Success Elements Considered to be Agreeable by Most Alaskans

- Coordination of Arctic science/LTK (Local and Traditional Knowledge) priorities by an entity like the State Committee for Research (SCoR) to help focus investments
- Science sufficiently informs solutions
- Research funding based on merit, objectivity, and Arctic priorities (rather than special-interest agendas)
- Centralized Arctic policy development that draws in all regions
- Expertise is coordinated, including through a sharing center
- Alaska leadership in addressing climate change and ocean acidification

Possible Actions to Achieve Agreed Success Elements

- Either reinvigorate and/or revamp purpose of SCoR or create a new entity—like a State Arctic Research Commission—charged with coordinating research and establishing priorities
- Begin scoping with stakeholders to identify priorities
- Identify baseline research and monitoring needs
- Coordinate with USARC (Arctic Research Commission) and Arctic Council working groups
- Ensure support of decision-makers in identifying research needs and increasing stronger role of science in decision-making
- Centralize data and research results

- Create a coordination/sharing center works that functions as a clearing house for research

Recommendation #4) Improving intergovernmental collaboration, transparency, and participation.

Inclusion of Alaskans' expertise, experience, and perspective in the decision-making process is critical to ensuring that good decisions are made about our lands, waters, and communities. For example, we need to provide opportunities for affected communities to have a seat at the table when state-wide decisions are made, and we need to ensure that the State's voice is heard when the federal government makes decisions. Openness, transparency, and an inclusive process are key.

Success Elements Considered to be Agreeable by Most Alaskans

- Special adviser to State government on Arctic issues
- Arctic policy and implementation plan adopted by the State and resources allocated to implement it
- Established public process for decisions related to the Arctic
- All Alaskans included in decisions
- Governor and cabinet informed on challenges and opportunities in the Arctic

Possible Actions to Further Agreed Success Elements

- Review and prioritization of existing State Arctic policy resources, including looking back at climate change sub-cabinet working group recommendations
- Create a venue for dissemination of information and feedback from the public
- Create "Arctic Portal" clearinghouse that includes information from all sources, including Tribes, nonprofits, corporations, and others