

North Slope Science Initiative

**Interim Report
Ken Taylor, Executive Director
August 3, 2005**

On June 4, I traveled to Deadhorse to work with Richard Kemnitz, BLM hydrologist, to learn more about the stream gauging stations and climate monitoring platforms he has established in NPRA. We traveled via helicopter to the USGS station on the Colville River and then on to Fish and Judy Creeks where Richard has recently established gauging stations. We discussed priority areas for long term USGS regional gauging stations that could be supported with the BLM NSSI funds granted to USGS. The following day I assisted Fish and Game caribou and muskox researchers with radio collaring day-old calves in the Central Arctic herd, radio collaring muskox, and conducting sex and age composition counts on two muskox bands along the coast of the Prudhoe Bay area. Muskox populations appear to have declined significantly in recent years in the Arctic National Wildlife Refuge and are declining in the central arctic area as well.

On June 8 I gave a presentation on NSSI to the 79th Meeting of the Coastal Engineering Research Board, and on June 9 to the 76th Meeting of the U.S. Arctic Research Commission. I attended the ARC meeting on the 9th and 10th and traveled with them and a representative of BP June 11 and 12 to Deadhorse where we toured Prudhoe Bay and discussed various development and research activities.

I met with Larry Standley (BLM) and Dave Meyer and Steve Frenzel (USGS) to determine priority sites for stations USGS can gauge this summer. Ikpikuk River, Fish Creek, Judy Creek and the Meade River were suggested as the priority sites for long term hydrologic data collection, and the contract with USGS was drafted accordingly.

Ann Claerbout began working as the Executive Assistant to the NSSI June 16th. After a few weeks of office organization, training, and introducing her to the ongoing NSSI efforts we traveled to Fairbanks July 14th to meet with NPS staff, Institute of Arctic Biology faculty and Dr. Susan Sugai with the International Arctic Research Center.

We met with Diane Sanzone to discuss projects that NPS submitted to NSSI for the Research, Monitoring, and Inventorying projects on the North Slope. D. Sanzone found errors with the list and suggested that she go through it and update it. D. Sanzone demonstrated NatureBib, a master web-based database for scientific citations presented as bibliographic references. NatureBib merges a number of previously separate databases dealing with natural resource related topics. The public version of NatureBib with citations is in development. This could be a model for compiling literature on the North Slope for easy access on the NSSI portal.

**North Slope Science Initiative
Interim Report
Ken Taylor, Executive Director
August 3, 2005**

Brian Barnes, Director of the Institute of Arctic Biology (IAB), gave an overview of the Institute's different research areas. He presented the different research areas of the Institute, as well as the list of different faculty for IAB. I mentioned the need for NSSI to establish one central point of contact for UAF for research, monitoring, and inventorying projects on the North Slope. B. Barnes suggested that a University representative would be appropriate at the Oversight Group Meetings. He suggested the new Chancellor's Director of Research, Buck Sharpton, or Craig Dorman, Vice President for Research. C. Dorman briefs the U.S. Arctic Research Committee on the University Research. NSSI might consider initiating contact in order with C. Dorman to have the University represented at the next Oversight Group Meeting.

Unlike other institutes which do not train graduate students, faculty with IAB have part-time appointments with the University which are flexible depending on the momentum of faculty's research. A list of faculty with brief descriptions of research focus areas was provided. Specific faculty mentioned with possible North Slope research interests included but were not limited to Sydonia Bret-Harte (Research Assistant Professor specializing in Terrestrial Community Ecology), Falk Huettman (Assistant Professor of Wildlife Ecology), Sasha Ktaysky (Assistant Professor of Integrative Physiology), and Mark Lindberg (Assistant Professor of Biology). NSSI will need to consider not only IAB but also other UAF Institutes when linking the University as a whole with NSSI.

Following our discussion with Dr. Barnes, we had lunch with him, Terry Chapin (Professor), Brad Griffith (Associate Professor of Wildlife Ecology), Abby Powell (Associate Professor of Wildlife Ecology and Assistant Leader), Mark Lindberg (Associate Professor of Biology), and Marie Gilbert (Public Information Officer). M. Gilbert was identified as a primary contact for a list of all IAB projects. She offered suggestions for the NSSI portal and project database. A link on the NSSI portal to the National Science Foundation (NSF) site would direct those interested in research on the North Slope to a searchable database of NSF funded grants. IAB is considering compiling an internal list of projects focused on the North Slope. Toolik LTER has a website where a user can define a particular spatial area represented on a map and drill down to different levels and retrieve bibliographies of historical research that has taken place at the site. If all of those collaborators on NSSI projects could be identified and linked to the same reference or bibliography, it would increase the utility of the NSSI project list.

The following morning, John Payne (BLM), Mike Ables (Toolik Research Station), and Susan Sugai (Commissioner with the Arctic Research Commission) joined us on a visit to the Toolik Lake Research Station. S. Bret-Harte gave us a presentation on the Toolik Field Station areas of research. There are currently 42 funded projects being conducted at

**North Slope Science Initiative
Interim Report
Ken Taylor, Executive Director
August 3, 2005**

the Toolik Field Station, with the majority funded by NSF grants. The research is focused in areas that include the adaptation to the arctic environment (including studies on the adaptations of animals, insects, and mammal), the structure and function of the arctic ecosystem (community structure, plant productivity, biogeochemical cycling, glacial history), and the forecast and function of an arctic ecosystem with climate change. The studies have lake, stream, or terrestrial components. Themes of these components include long-term monitoring and scaling inferences and predictions to a larger scale (modeling). S. Bret-Harte stressed the need to expand the area of the current Research Natural Area (RNA) around the Toolik Field Station in the BLM's Resource Management Plan amendment. S. Bret-Harte led a boardwalk tour of study plots showing the projected effects of climate change on tundra vegetation.

Wayne Regelin, Henri Bisson and I met with Mckie Campbell, recently appointed Commissioner of the Alaska Department of Fish and Game, to brief him on the NSSI, energy bill, and funding strategies.

I attended the Western Association of Fish and Wildlife Agencies meeting in Kananaskis, Alberta July 23-26th to meet with western state directors and discuss the potential for a plenary session at their next meeting to address the escalating oil and gas leasing across the western states. The rapid increase in oil and gas development in the western states was a topic of discussion during several of the committee meetings.

The ESRI International User Conference was held July 25-29 in San Diego, CA bringing together the GIS user community and workforce. Ann Claerbout attended the plenary program. The plenary program included talks by senior ESRI staff, who shared future visions and developments of GIS technology, and Dr. Jane Goodall, who offered insight into her perceptions of environmental threats and promoted the use of GIS in conservation efforts. A user map display and poster sessions showcased GIS project work in many application areas. Posters from land management agencies provided examples of web applications and metadata servers that could be useful to the NSSI as updates on the portal.

NASA sponsored a workshop July 26-27 on "UAVs (Uninhabited Aerial Vehicles) for Land Management and Coastal Zone Dynamics". John Payne and Ann Claerbout were among the 45 participants from federal land management agencies, universities, and technology industries. During the two day facilitated session, participants were divided by specialization into five groups: 1) Coastal and Ocean Dynamics, 2) Wildfire and Disaster Management, 3) Vegetation/ Agriculture/Land Cover, 4) Land management/Land Use/Change Monitoring, 5) Wildlife and Habitats. These groups identified and prioritized needs and issues for land management agencies and defined

**North Slope Science Initiative
Interim Report
Ken Taylor, Executive Director
August 3, 2005**

system requirements and scenarios for UAV missions. The use of UAVs for monitoring on the North Slope was addressed.

Ongoing NSSI activities during this period included working with Interior staff in Washington, D.C. to keep the Science Technical Group charter moving forward, completed major revisions to the draft science strategy, developed a presentation on the NSSI for the Arctic Monitoring and Assessment Program Symposium in September, continued work on the NSSI research, inventory and monitoring project list, and assisted with organization and preparation for the August 3-4 Oversight Group meeting and site visit to Alpine.