Northwest Arctic Borough Science Steering Committee

February 18-19, 2015 Committee Meeting Minutes (February 23 draft)

Members Present:

Cyrus Harris, Committee Chair, At-Large Village Representative, Kotzebue (Present February 19)
Henry Huntington, Committee Vice Chair, Pew Charitable Trust, Independent At-Large Member
Raymond Lee, Jr. Village Representative, Buckland
Morgan Johnson, Village Representative, Ambler
Alex Whiting, Village Representative, Kotzebue
Louis Brzuzy, Shell
Molly McCammon, Alaska Ocean Observing Systems, Independent At-Large Member
Michael Brubaker, Alaska Native Tribal Health Consortium (ANTHC), Independent At-Large Member
Gay Sheffield, Assistant Professor, University of Alaska Fairbanks, Independent Scientist
Douglas DeMaster, Science and Research Director, Alaska Region, NOAA, Independent Scientist

Members Not Present:

Richard Glenn, Arctic Slope Regional Corporation, Independent At-Large Member
Norma Ballot, Village Representative, Selawik
Stanley Hawley, Village Representative, Kivalina
Roland Booth, At-Large Village Representative, Noatak

Guests:

Ernie Barger, Buckland IRA
Glenn Seaman, Consultant for Buckland
Robert Suydam, North Slope Borough (NSB)
Ted Rockwell, NSB consultant
Bill Carter, FWS Selawik
Tim Schuerch, President, Maniilaq Asso.
Willie Goodwin (Wednesday morning)
Lance Kramer, Director of Lands, NANA
Delbert Rexford, Barrow (Wednesday)
Susan Georgette, Manager, Selawik Refuge
Liz Hensley, NANA (Thursday)

Borough Staff:

Christine Hess, In-House Counsel
Matt Mead, Borough Attorney (Thursday)
Glenn Gray, Note Taker
Noah Naylor, Planning Director
Charlie Gregg

1. Opening – Wednesday Morning, February 18

Henry Huntington called the meeting of the Northwest Arctic Borough (NAB or Borough) Science Committee to order at 9:47am. He explained that Committee Chair Cyrus Harris had a prior commitment but would attend the second day of the meeting. After Glenn Gray called the roll, Willie Goodwin gave the invocation in Iñupiaq.

2. Agenda

Henry gave an overview of the agenda. Molly suggested that meeting participants be given an opportunity to identify programs or funding opportunities that may be of interest to the committee.

3. Minutes

A motion to approve the minutes by Molly and seconded by Morgan was tabled to give committee members an opportunity to review the draft minutes. The committee unanimously approved the minutes on Thursday morning with two minor changes.

4. Visitor Comments

Henry invited audience members representing regional organizations to discuss programs that might related to the Science Committee's work. Lance Kramer, Director of NANA Lands, began by saying the NANA Regional Corporation manages 2.2 million acres of land. He emphasized the importance of traditional knowledge and teaching young people to respect the land. Lance said NANA will be working with the Borough Planning Department to develop Iñupiaq place name maps. While NANA does not complete research, Lance said he is compiling a list of relevant studies completed for the region.

Bill Carter, fisheries biologist for the Selawik National Wildlife Refuge, said there is an opportunity to partner with a whitefish monitoring project in the refuge. He also said his organization is interested in working with young people to prepare them for careers in biology.

Tim Schuerch, President of the Maniilaq Association, said that following traditional ways can preserve wildlife stocks. He said the current crash of the Western Arctic Caribou Herd seems to be beyond normal cycles. Willie Goodman said his grandfather told him he would see two crashes of the herd in his lifetime, and this one is his second. Willie said the biggest concern is the impact from transporters dropping off hunters during the beginning of southward migration. While the migration is occurring later, hunting openings have been unchanged, and there is more concern about the impacts of sport hunters targeting the lead caribou. He also said there have been some impacts to migration from the Red Dog Mine Road, but proper management can minimize such impacts.

5. Buckland Beluga Project - Ernie Barger and Glenn Seaman

Ernie Barger of the Native Village of Buckland said the community developed this project with Glenn Seaman who worked with the community on a beluga project in the 1970s. Robert Suydam and Henry Huntington worked on the current project which is mostly funded by the North Slope Borough Science Committee with partial funding by the NAB Science Committee. Ernie emphasized that beluga whaling is a strong cultural component of Buckland which relies on cooperation among families and sharing of Iñupiaq values.

Glenn explained that he worked for the tribal council on this community-based project. His work involved semi-directed interviews with 30 community members and a wisdom keeper workshop to

document traditional beluga hunts based out of Elephant Point. Glenn gave a history of the hunt which originally involved use of kayaks and umiaqs. By the 1920s, wooden boats were used, and by the 1950s, up to 50 boats were used for the hunt. Beginning in the mid-1970s, other villages joined the hunt which led to additional boats, increased noise and an increased harvest. In 1975, the largest harvest year, some community members began to believe that too many whales were being harvested. By the mid-1980s, the numbers of belugas decreased dramatically along with reduced harvests. About 12 families still go to Elephant Point each year, but it has evolved to more of a camping experience than a beluga hunt. Glenn ended the presentation by describing the wisdom keeper workshop where Buckland residents spoke about their traditional beluga harvests and the situation today.

Discussion: In answer to a question about any examples of beluga populations being restored, Robert said there are not a lot of examples, but Point Lay revived its hunt after facing a similar decline in beluga populations. He said the North Slope Borough has a program that brings youths to the Mystic Seaport Aquarium to learn more about belugas, and this year it will include a participant from Buckland. Robert said the Kotzebue Sound belugas appear to be a different stock than the Point Lay population.

After a break, Willie Goodwin, chair of the Alaska Beluga Whale Committee, spoke about the need for hunters of the entire region to work together to find a solution. He said it would be useful to initiate a similar project for Kotzebue and Noatak. Willie explained that belugas come into Kotzebue Sound from Cape Krusenstern as soon as the ice opens up. Unlike the Elephant Point-base hunt, Kotzebue hunters use nets and stage their harvest about 10-15 miles offshore. He said out of 40 young, only six will survive to adulthood. In answer to a question, Willie said the belugas that have come into Kotzebue Sound in recent years appear to be a different stock because they arrived later than the local stock. He also said that some scientists consider information from locals anecdotal, while he believes personal observations "provide much more than what you can read in a book."

Robert Suydam noted a need to train young people to be beluga biologists to replace the biologists who are nearing retirement.

6. Using Acoustics Moorings in Kotzebue Sound – Alex Whiting

Alex Whiting of the Native Village of Kotzebue spoke about the acoustics moorings project to study beluga whales. The funds contributed by the NAB committee covered salaries for Alex and an employee of the Alaska Department of Fish and Game, production of a newsletter, supplies, and local captains and crews to assist with deployments. Alex said the belugas recorded in Northern Kotzebue Sound are likely a local stock. He said there were two challenges: not having a lot of information, and difficulty in identifying the Kotzebue Sound stock because other stocks pass through the area on their way north. Without information about the numbers of the local beluga stock, it will be difficult to know if management measures are having an effect on their recovery.

Alex said the project involved a team of locals and government biologists. He said the three overlapping recorders covered a seven-mile area (each recorder covered a 2.5-mile circle). The recordings captured

communications of belugas, porpoises and killer whales. The team will go back after July to retrieve the equipment. Alex is seeking funding for next year to swap out memory cards and batteries and re-deploy the equipment.

7. Bearded Seal (Ugruk) Hearing Project – Alex Whiting

The committee funded local involvement in the project which involves a partnership with the University of California, Santa Cruz. Last fall, one juvenile ugruk was captured in Kobuk Lake and transported to Santa Cruz. Researchers are studying how ugruk hear and their physiological responses to noise in an effort to understand safe zones and where ugruk might receive temporary or permanent hearing damage. While there have been similar studies with ringed and spotted seals, this is the first study for ugruk. Robert said the ugruk are trained to push a bar when it they hear a sound. The study is mostly funded through the joint industry research program. After three years, the ugruk will be sent to a zoo.

8. Kotzebue Sound Ambient Noise Monitoring Project – Alex Whiting

The NAB Science Steering Committee funded purchase of acoustic recording instruments for use by the Native Village of Kotzebue. The instruments record baseline noise levels that will be useful during future investigations of the contribution of noise by shipping and industry activity. In addition to equipment, the funding helped pay for participation of local crews and boat captains during 2014.

Discussion: Alex briefly described two other projects: a beluga tagging project that occurred last year in Norton Sound by the National Marine Mammal Laboratory and a project to deploy drifters next summer. Molly mentioned there may be drifters available from another project, and Robert added that those drifters require a remote power module at a cost of $200,000. Christine commented that the projects funded by the committee accomplished a goal by Mayor Joule to fund locally-based projects in cooperation with the NSB. She asked the committee to think about how it could communicate its accomplishments with Borough communities. Alex said that he prepared several articles about his projects and plans to issue a newsletter this coming summer.

9. Northwest Arctic Data Portal – Molly McCammon

Molly gave an update on the first phase of a project by Alaska Ocean Observer System (AOOS) funded by the committee to develop an information system accessible by smart phones. This demonstration project will include real time information that will be useful by Borough villagers when planning subsistence activities. The demonstration application shows real-time information for sea ice concentration, temperature and wind. A time bar will allow users to view information for the past few days and predicted conditions for the next few days. The application will also include links to web cams in villages that have them. The major limitation for this region is that the only real-time sources of information are from the weather stations. Molly asked the village members of the committee what kinds of features they could use, and they identified surface water temperature and ice coverage maps from GINA. It may be possible in the future to add a feature for uploading local observations. Morgan said it would be useful to view ice conditions of rivers in the spring, especially ice jams that can lead to

flooding. In answer to a question from Gay about the ability to send emergency alerts, Molly said it might be possible to send alerts when the temperature or wind reached certain levels. In answer to a question from Christine about including ship location data from the Alaska Marine Exchange, Molly said that would not be possible because the organization depends on subscriptions for that information.

Molly concluded by discussing the roll out of the information system. She said after some additional work, the data team will come up to the region and have a couple of people test it. In addition to committee funding, AOOS is also providing funding for the system. Noah noted that it will be necessary to figure out how much each add on will cost, and Molly said she will consider the recommendations of the committee and bring a budget back for its review.

10. Budget Update – Noah Naylor and Christine Hess

Noah reviewed budget information with the committee after distributing two handouts. He said 78% of the CY14 budget has been spent, and $889,000 has been committed. He said the Borough will be hiring a director soon for the Science Department. He added that last year, $500,000 of Shell funding was allocated to the subsistence mapping project. In addition, $750,000 has been allocated to fund research during the 2015 calendar year. Noah emphasized the need to involve youth in the committee's work and to find a way to bring information back to the communities. Louis said Shell is committed is to supporting funding to the committee, but considering the low price of oil, there may be a need to disperse funds when they are needed rather than up front.

11. National Petroleum Council Report – Henry Huntington

Henry reported on a report being prepared by the National Petroleum Council. He said the Council, made up of the major energy companies and support industry, exists to address questions from the Secretary of the Interior. A study committee was formed to report on technology developments and research needs to for supporting oil and gas activities in the Alaska Arctic. He said committee member Richard Glenn and he are on the coordinating subcommittee for the report and that he, Richard and Michael Macrander are writing sections of report which is expected to be completed by the end of March. Louis added that the report will be available on the web. He said the Federal Advisory Committee Act requires participation of NGOs on the Council.

12. North Slope Borough Science Committee Update – Robert Suydam

Robert Suydam and Ted Rockwell (NSB Consultant) gave an overview of the NSB's Science Steering Committee's work. Robert said the program came about in response to complaints about the lack of baseline data to support oil and gas decisions. The partnership also provides a way to build capacity of the NSB and its villages to do science, including collection of information and interpret it. He said the agreement signed by former Mayor Itta with Shell took almost a year to negotiate. Robert said it will be renegotiated in another year to make some improvements. So far, Shell has provided $2.5 million with in-kind contributions.

The NSB-Shell Science Steering Committee includes a representative and alternates from each of the coastal villages, four independent scientists nominated by Shell and picked by the mayor, and two additional scientists appointed by Shell. The committee identifies and ranks projects. Robert described some of the projects funded by the committee as summarized in the bullets below.

- **Satellite Tracked Surface Drifters:** This project with Tom Weingartner involves deployment of drifters by villagers in skiffs. Maps show the direction of water flow in the top three-four feet. Generally water moves north and the wind blows from the north but there is variation. Robert said there is a good argument for more collaboration between U.S. and Russia. Committee members discussed the difficulties of using current studies to predict oil spill trajectories and that the circulation in the Chukchi is more complicated than originally thought.
- **Bowhead/Beluga Hearing Study:** This study responded to the concern about impacts of noise on whales and potential hearing loss from activities such as seismic surveys. Using samples from subsistence activities, researchers count nerve cells in the ear to assess hearing loss.
- **Bowhead Ship Strike/Line Entanglement Analysis:** Since damage tissue turns white, this study assessed damage to bowhead whales from both ship strikes and entanglement of lines.
- **Stress Monitoring in Bowhead Whales:** This study measures stress hormones. While hormones in blood reveal recent stress, hormone levels in tissue show longer term stress (baleen can represent up to 20 years). During the time after 9/11 when shipping ceased, researchers found that stress levels of right whales dropped dramatically.
- **Ecology of Forage Fish of the Beaufort and Chukchi Seas:** This study, linked to a BOEM study, provided information of how oceanography affects fish.
- **Kotzebue Sound Beluga Studies:** Using mitochondrial DNA, researchers have been able to compare stocks from Bristol Bay, Norton Sound, Pt. Lay, Mackenzie River, and Kotzebue Sound. The Kotzebue Sound belugas are a very different stock than those using more northern waters.
- **Pending Projects:** Projects funded by the committee but not yet initiated include an aircraft disturbance study, a polar bear DNA analysis for population estimates, a stable isotope analysis of beluga teeth, a tissue/data archive, and a contribution to the North Pacific Research Board's research effort for the Chukchi Sea Ecosystem Study. 2015 projects include a projects that track whaling crews, retrieval of drifters, continued tagging of seas, and a study on polar bears.

Robert said a polar bear treaty will lead to quotas in the subsistence harvest, something that came as a surprise to the NSB and its villagers. He said the quota will be difficult to manage.

Robert described difficulties in issuing request for proposals (RFPs) for the two issued by the NSB science committee to date. The NSB committee hopes to issue a new RFP in the autumn of 2015 for $1 million. Ted is preparing the science plan that will identify science questions and how they are connected to village concerns.

THURSDAY, FEBRUARY 19

12. Update on Shell's 2015 Proposed Operational Plan

Louis gave an overview of Shell's proposed operations which will depend on getting a permit issues. He said a major regulatory barrier was recently overcome with the issuance of a supplemental EIS for Lease Sale 193 on February 20, the sale where Shell purchased its Chukchi leases that was challenged in court. Shell is seeking drilling permits, approval to use the an NPDES general permit for discharges, and incidental take permits for marine mammals from the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

Operations will include moving support vessels moved to Dutch Harbor, including a spill response tanker and tug, and routine trips between Dutch Harbor and the Chukchi prospect for supplies throughout summer. Shell will stage a number of vessels in Kotzebue Sound (Goodhope Bay), including two oil spill response barges and tugs, two resupply barges, and one landing craft. Shell will use Wainwright as the primary staging area for oil spill response which will include skimmers, smaller vessels, boom, a polar bear cage, and a 23-bed man camp. Four helicopters and additional housing will be based out of Barrow. Between July 10 and October, there will be about 20 crew changes per week out of Kotzebue and seven to 10 cargo totes of groceries each week.

Discussion: Committee members asked a number of questions and provided some comments. In answer to questions from Morgan and Mike, Louis said Shell did not expect any impacts to fishermen, and it will employ a subsistence advisor for the area with calls held every morning. Communication centers will be staffed around the clock to deal with issues as they occur. Cyrus pointed out that ugruk hunting occurs during that time of year. Molly said there are plans to deploy acoustic arrays and ocean buoys, probably north of Kivalina. Louis said Shell is participating in the new Arctic Biodiversity Network along with NOAA and BOEM. Tim suggested that defining activities more clearly will help abate community concerns. In answer to a question from Raymond, Louis said marine mammal observers will be used when vessels are moving.

14. Request for Proposals Update - Noah Naylor

Noah summarized the proposed RFP process he drafted with Henry and Glenn. Under that draft plan, a simple RFP would be issued on March 31 with a five-page response due by June 30. Some projects could be awarded from the initial response in August while more complicated projects may require a second response to provide more detailed information. All awards would be issued by December.

NAB Attorney Matt Mead described the requirements to issue service contracts under the Borough's current procurement process. He said there were checks and balances in the process including Assembly approval of contracts over $25,000. Either an RFP or a bid process may be used. He said staff is discussing the possibility of changing the Borough code to create a simpler process for pass through grants. In answer to a question, Matt said sole source contracts may be approved by the mayor for contracts under $10,000, informal bids are required for contracts between $10,000 and $25,000, and

exceptions can be made of professional service contracts under $150,000 when there are limited contractors with appropriate expertise. There may be flexibility under the current code for sub-grants.

Henry suggested the committee consider the process used by the NSB Research Steering Committee. While it has issued two targeted RFPs, most of its awards were made without issuing an RFP. In order to build capacity, the NSB Wildlife Department was the recipient of many of the projects, although it also has partnered with others on some of the projects. The committee discussed this issue further and agreed that when there were limited qualified recipients for a study, it would not need to issue an RFP, but an RFP would be used when it wanted to get the word out about a funding opportunity. Everyone who receives funds, however, would need to submit a plan of what they will do and who will do it.

Doug said the National Marine Fisheries Service has a similar provision, but they must announce the intent to award a sole source contract providing the ability of others to submit a proposal. He added that capacity building efforts usually take two to three years and involve funding of over $150,000.

Molly recommended that the overall process be documented since this isn't a typical scientific program. She noted it has requirements for community involvement and to address Shell priorities.

Robert emphasized that issuing an RFP involves a huge amount of work with significant administrative hurdles, and he noted the NSB has a relatively larger staff than the NAB. In order to ensure that responses to the RFP will be easy to evaluate, Robert recommended that the announcement be very detailed, possibly more extensive than the response to the RFP. He said the RFP should identify focal areas and list evaluation criteria and how many points will be awarded for each criterion (e.g., technical merit and price). He also mentioned the possibility of a joint RFP between the two committees. In answer to a question, he said in many cases, someone from the NSB acts as the principal investigator and then involves others. Also, the mayor has approached the Assembly for approval of some projects.

Noah noted that committee members were appointed because of their expertise, and it is important to find a process that allows them to be recipients of awards. He suggested having a subcommittee of members not associated with a proposal who could bring a recommendation to the full committee. Matt said it is important to be aware of potential conflicts and to tailor the process accordingly.

The committee further considered its options. Molly suggested the following process:

1. Projects leveraging an existing project do not need an RFP.
2. Obtain short proposals for a certain subset of issues with limited submitters.
3. More technical proposals will require a longer review, maybe requiring a separate RFP.
4. Use survey monkey for some solicitations.

In answer to a question, Henry said the committee was not ready to address how it will address matching funds. Mike recommended allowing use of Committee funding for federal match requirements because it would add value to this program. Robert said the NSB's upcoming RFP will award additional

points for projects leveraging other funds. Alex said it is difficult to try to match funds when it is unknown whether one will get a grant that requires a match, and Robert agreed.

Henry recognized it is difficult to discuss the proposal process in the abstract, but suggested there are three approaches that could be used: 1) An open RFP, 2) a sole source or targeted solicitation, and 3) a proposal awarded in house.

15. Village Survey Update – Glenn Gray

Glenn discussed three documents about local priorities for research: 1) Results of an exercise at the April 2013 *Workshop for Improving Local Participation in Research in Northwest Alaska*, 2) local research priorities identified at the October 2014 *Workshop on Important Ecological Areas* held in Kotzebue, and 3) the village survey prepared for the committee and the Borough's subsistence mapping project.

The village survey was developed by a subcommittee with input from the anthropologist working on the Borough's subsistence mapping project. Residents from nine of the 11 villages participated in the survey. The survey summary that was distributed to the committee lists responses for each of the 25 questions, and an Excel document lists answers by village. Glenn noted some general themes throughout the survey.

- Subsistence activities provide food, relief from high store prices and a cultural connection.
- A little more than half the respondents do not participate in subsistence as much as they would like because of the cost of fuel, lack of transportation, age, and work demands.
- Major issues identified by respondents include impacts from sport hunters, impacts from climate change, impacts from development (mines, oil and gas, roads), restrictive government regulations, trash reduction, pollution prevention, and predator control.
- Educating young and participating in activities keeps subsistence strong.
- Survey respondents identified caribou, fish, berries, moose, seal, and waterfowl as the most important subsistence resources.
- Most people observed effects from climate change, including migration changes, weather changes, adaptation measures by subsistence users, and changes in the number and distribution of resources.
- Most respondents support development that does not impact subsistence.
- To ensure responsible development, research and monitoring is a high priority.
- Borough residents value communication and prefer meetings and newsletters.

16. Knowledge Assessment

Henry distributed papers submitted as part of the committee's knowledge assessment that he coordinated as well as a two-page summary he prepared. Papers addressed birds, coastal processes, fishes, hydrology, land mammals, marine mammals, oceanography, sea ice, subsistence, and vegetation. Henry summarized some of the important findings from the papers under the following topics:

- What we know,

- Priority study areas,
- Cross-cutting topics, and
- Multipurpose methods.

Henry highlighted a few of the proposed studies identified by the authors of the papers. He said an important question to answer is: What makes Kotzebue Sound so productive? He added that there were a lot of cross-cutting topics proposed, and he recommended focusing on the big questions. He listed potential research topics under four categories: 1) Reviews (e.g., literature reviews for birds, ringed seal data rescue, harvest monitoring sample design, traditional knowledge, and cumulative effects), 2) existing efforts (e.g., marine mammal tagging and bio-sampling, vegetation surveys), 2) new studies (e.g., Kivalina coastal dynamics, climate scenarios and modeling, local and small-scale monitoring, and subsistence governance), and 4) connections (e.g., vegetation and land mammals, sea Ice and marine mammals and local use, and currents and waves and marine productivity).

Henry identified the key considerations, including involvement of the right people, making sure the pieces connect, developing strong local support and involvement, and making sure the program meets needs of the people of the Northwest Arctic Borough. Henry said the papers could be posted on the Borough's website after giving the authors a chance to finalize them.

Discussion: Committee members offered some initial comments on next steps for the research program.

- Mike suggested looking at synergies among the projects.
- Doug noted this program may get out ahead of the North Pacific Research Board (NPRB) Chukchi effort. He suggested looking at BOEM's ongoing studies and research being done by NOAA. Christine noted that BOEM will be invited to the April joint committee meeting with the NSB.
- Cyrus said he would like to know more about currents beyond Kotzebue Sound that connect with the Chukchi Sea. He said occasionally surges occur with south or southwest winds.
- Robert said it might be worthwhile for the committee to contribute to the NPRB to get a seat at the table – the NSB science committee has contributed to that effort.
- Doug said there may be an opportunity to join efforts with an upcoming effort by a NOAA ship to map the sea floor between Port Clarence and Kotzebue Sound.

Report from Cyrus on Traditional Foods: Henry asked Cyrus to report on the meeting he had the previous day with U.S. Department of Agriculture staff. Cyrus reported the meeting is a result of a bill that would allow serving traditional foods to elders at assisted living facilities. Maniilaq is proposing to construct a meat processing facility.

17. Mission Statement Goals

Christine presented a mission statement and goals that were drafted during the lunch hour for discussion purposes. The committee made some changes to the draft and recommended staff work further on these items and bring a new draft back to the next committee meeting. Some members recommended adding the concepts of "local and traditional knowledge" and "knowledge gathering."

Mission Statement: Improving the science and research capacity of the Northwest Arctic Borough and to better understand the environment in order to improve the quality of life for our residents.

Goals:

1. Community-based research
2. Local/traditional knowledge integrated into research
3. Cooperative research with other organizations
4. Youth engagement/education
5. Maintain subsistence use of Arctic resources and traditional lifestyles and food security
6. Expand research and scientific capacity
7. Support sound decisions related to development, including appropriate mitigation measures
8. Communication
9. Meeting local and Borough priorities
10. Prioritize research needs
11. Expand local infrastructure to support local capacity for research

18. Potential Projects

During this agenda item, committee members discussed potential research projects that could be funded with the $750,000 allocated for calendar year 2015.

Acoustic Monitoring: Louis Brzuzy gave an overview of a proposal for consideration by the committee. He said Shell is interested in expanding the scope of the existing acoustic monitoring program in Kotzebue Sound to learn more about that abundance, distribution and availability of marine mammals as well as noise produced by vessels. Louis said Shell has been working with JASCO Applied Science and Greeneridge Sciences on this project. Shell would be interested in expanding the scope of the existing acoustic monitoring program to:

- Monitor ambient noise at Shell's staging area in in Goodhope Bay,
- Quantify sounds of vessel traffic in and out of Kotzebue,
- Characterize the sounds produced by Shell vessels in Kotzebue Sound, and
- Monitor the biological activity in Kotzebue Sound.

Louis said Shell is willing to provide an additional $350,000 if the committee would take on the project, including rental of equipment, deployment of equipment and continuation of the work with JASCO and Greeneridge Sciences. In answer to a question, Louis said lower frequency sounds can travel a few kilometers while higher frequencies have a smaller range.

Alex said ideally the Native Village of Kotzebue would like to have equipment cover a "fence" across Kotzebue Sound to get a better idea of species entering and exiting the area.

The committee unanimously approved a motion made by Cyrus and seconded by Doug to approve Shell's offer to provide $350,000 to expand the acoustic monitoring program. Louis and Alex will work with JASCO Applied Science and Greeneridge Sciences and report back to the committee at its April 2015 meeting.

Proposed Allocation of 2015 Funding: Henry led committee members through a brainstorming session that identified potential projects for the $750,000 2015 funding (see attachment). During the afternoon break, Henry, Molly and Noah grouped the projects into four topics for discussion by the committee: Terrestrial projects, marine projects, oil spill trajectory model, and "crosscutting" projects that address multiple goals. The following tables list the proposed projects and the amounts allocated to them.

Caribou and Other Land Mammals, Habitat and Climate	
Short-term studies	$75,000
Symposium – Winter	$75,000
Local sampling test	$25,000
Total Funding for this Category	**$175,000**

The terrestrial category addresses the land environment with a focus on caribou. The symposium would be used to bring scientists and local residents together to develop a conceptual model of what is known about the land-based system as well as what gaps in knowledge need to be filled. The sampling test would involve a pilot project to test sampling methods for gathering of information needed to improve the model.

Marine Productivity/Kotzebue Sound Ecosystem	
Additions to summer studies	$185,000
Symposium – Winter	$75,000
Local sampling test	$25,000
Expansion of Traditional Knowledge Study to Northern Kotzebue Sound	$100,000
Traditional Knowledge Study of ice Seals	$0[1]
Total Funding for this Category	**$385,000**

The marine category focuses on research activities for Kotzebue Sound. Again, the symposium would be used to develop a conceptual model of what is known about the marine ecosystem, and the local sampling test will provide a pilot project to test collection of information to improve the model.

Oil Spill Trajectory Model	
Assessment of Data Needs	$10,000
Total Funding for this Category	**$10,000**

This category would provide an initial investigation into what data are available for Kotzebue Sound to improve an understanding where an oil spill would end up. The idea would be to use existing models rather than develop a new model. The committee discussed the possibility of a joint effort with other organizations, such as the Oil Spill Recovery Institute.

This category of projects addresses needs that apply to the Borough science program in general or would support multiple projects. During the discussion of this category, Doug said that NOAA may be able to provide some funding for the laboratory.

Cross-Cutting Activities	
Data Management/Website	$30,000
Education (schools, culture camps)	$25,000
Outreach (Science fairs, newsletter)	$25,000
Laboratory in Kotzebue	$100,000
Total Funding for this Category	**$180,000**

In answer to a question, Henry said the goals brainstormed during the previous agenda item (and listed in the attachment to these minutes) provide general direction for the projects. Chris suggested that subcommittees be appointed to further develop these projects before the next committee meeting.

Committee members discussed some additional points related to the projects.

- Doug suggested the committee look into what the North Pacific Research Board will be doing for its Chukchi research program because it will likely develop some kind of a model.
- Mike commented that it is easy to think of ecosystems as being independent when they may be more connected than they first appear.
- Christine pointed out that a lot of work has been done by the committee, considering that it has been just over a year since the agreement with Shell was completed.
- Robert said there may be an opportunity to join efforts with the NSB science committee for projects with a common interest (e.g., Chukchi Sea oil spill trajectories and impacts to food security from possible actions to address the decline of the Western Arctic Caribou Herd).

Establishment of Subcommittees: The committee established the following subcommittees to work on the projects between now and the April committee meeting. Noah will be responsible for coordinating meetings of the subcommittees, and he and Henry will work with authors of the state of knowledge papers to get their input on what to do next. Also, Noah and Henry will meet with School District.

- **Laboratory Subcommittee:** Alex, Louis, Doug and Cyrus, Noah
- **Caribou Land Mammals Subcommittee:** Morgan, Raymond, Mike, Noah (Jim Dau and Dave Swanson will be invited to join)
- **Marine Productivity Subcommittee:** Molly, Doug, Gay, Raymond, Alex, Cyrus, Noah
- **Oil Spill Trajectory Subcommittee:** Louis and Molly
- **Website/Data Subcommittee:** Craig George (NSB), Chris, Noah, Molly, and Louis

The committee agreed to meet again April 9-10 in Anchorage. The first day will be a joint meeting with the NSB Baseline Studies Steering Committee, and the second day each committee will meet separately.

Northwest Arctic Borough Science Steering Committee

February 18-19, 2015 Committee Meeting Minutes

Attachment: List of Potential Projects

Committee members generated this list during agenda item 18. Similar topics have been grouped together.

- Expand Kotzebue Sound acoustic monitoring program
- Caribou – community priority
    - Impacts of weather, climate, browse
    - Why don't they migrate near Noatak anymore? What is the impact of the Red Dog Mine activities?
- Land/Ocean Coast – What makes Kotzebue Sound productive?
    - What small pieces could leverage other projects?
    - Use an ecosystem approach
- Expand understanding of Upper Kobuk and Selawik watersheds
    - Mining potential
    - Need baseline data – not much known about the ecosystem
- Focus on connection studies
    - Vegetation and caribou
    - Sea mammals
    - Currents/waves – forecast spill trajectories
        - Understand best current models and what data feed models, what information is needed to guide research
- Ecologically-based model
    - 1st step is a conceptual model of how we think it works to help focus future research
    - Knowledge gaps
    - Communication tool
    - Invite someone experienced in other models to speak about "lessons learned" at a future committee meeting
- Maritime – whatever happens in the Bering Strait affects areas north of it
    - Noise – acoustics
    - Oil spill data
        - How to respond to a spill, currents (trajectories)
        - Response capacity, etc.
- Caribou beluga and seal
- Data storage with AOOS
- Symposiums and youth activities
- "I was taught by my grandpa that some animals will be hard to get – need to go for something else."

- As sea ice thins, ships, tankers and cruise ships will increase
- Use harvests as a sampling source
- Coastal survey – explore idea of local surveys to gain information
- Explore other methods to get revenues for studies other than grants (e.g., use area fees)
- Have a consultant look at funding sources
- Continue beluga study to Northern Kotzebue Sound
- Build local infrastructure - look at funding for obtaining a local research boat as was done for Prince William Sound
- As a research requirement, require local observers
- Look at connections rather than a shotgun approach: sea ice, circulation, marine mammals
- Fund a local laboratory
    - National Park Service has offered to renovate its old visitor center for this purpose
    - Start putting numbers together (e.g., $100,00 for equipment)
    - Facilities could include: Freezer, computer, centrifuge, lockers, and a meeting room
    - Fish and Wildlife Service may be interested in joining effort
    - NOAA may be able to contribute $10,000 per year for operation and maintenance
    - Ensure facility can accommodate necropsies and ability to process samples
    - Will add momentum to studies and accommodate educational opportunities for youth and "homegrown scientists"
    - Make sure lab is accessible to others besides federal agencies
- How do we tie many parts together while including youth and community
    - Community component could be required in proposals but implemented with assistance from Borough
    - North Slope Borough Wildlife Department has an outreach coordinator
    - North Pacific Research Board requires outreach (3-5% of grant amount)
    - Consider including Kotzebue youth that participated in the "Tsunami Bowl"
    - Establish a subcommittee or work group to address short- and long-term needs
- Borough could require permits for researchers
- Consider working with the Alaska Forum on the Environment on a youth program
- Maniilaq has a science program