



International Community-Based
Environmental Observation Alliance for
the Arctic Observing Network

BERING SEA SUB-NETWORK

Sharing Knowledge – Improving Understanding

www.BSSN.net



BSSN TEAM 2007

Project Launch Workshop Report
Anchorage, Alaska
October 15-19, 2007



Aleut International Association
333 W. 4th Avenue, Suite 301
Anchorage, Alaska, U.S. 99501
www.aleut-international.org

This material is based upon work supported by the National Science Foundation under Grant No. ARC-0634079
Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views
of the National Science Foundation (NSF)

TABLE OF CONTENTS

INTRODUCTION	1
EXECUTIVE SUMMARY	2
PROJECT SUPPORT	4
Acknowledgements	4
PARTICIPANT LIST	5
WORKSHOP AGENDA.....	6
OPENING REMARKS.....	9
GOALS AND OBJECTIVES	9
BSSN COMMUNITIES.....	11
Introduction Of Villages	11
OVERVIEW & MAIN ELEMENTS.....	15
Project Overview	15
DEVELOPMENT OF SURVEY INSTRUMENT DRAFT.....	16
Data Management	18
WORKSHOP DISCUSSION	19
BSSN Structure.....	19
BSSN Procedural Guidelines	19
BSSN Project Timeline/ Next Step.....	20
WORKSHOP RESULTS	21
PARTICIPANT BIOGRAPHIES	22

INTRODUCTION

Over the past several years, research and assessment reports, especially the Arctic Climate Impact Assessment produced by the Arctic Council¹, have demonstrated a clear need for large-scale network-based local observation of environmental changes.

In 2003, the Aleut International Association (AIA) began exploring the concept of a network for community-based monitoring first in the Arctic, then within the Bering Sea region.

An initial workshop was held in October 2005 to facilitate exchange of information for establishing a network for participating organizations, to prepare for and learn about current and past community-based research projects, as well as to scope out potential funding opportunities. In 2006, the International Polar Year (IPY) Joint Committee endorsed the concept of the Bering Sea Sub-Network. The cumulative result of these efforts was a proposal submitted to the National Science Foundation (NSF) in May 2006 under the title: Bering Sea Sub-Network, International Community-Based Observation Alliance for Arctic Observing Network (BSSN). The proposal responded to the needs of the Arctic Observing Network (AON) by demonstrating an understanding of the issues in the context of both science and traditional knowledge and showed a grassroots support at the community and regional level. NSF proposed to fund a pilot project.

In October 2006, with a generous support of the U.S. State Department and Environment Canada, the second international scoping workshop was convened to devise the objectives for the pilot project, determine the number of villages and to select criteria for participating communities. The representatives from Alaska and Russia agreed to limit the number of BSSN villages for the pilot to six: three in the Russian Federation and three in the United States. The participants provided valuable recommendations on how to ensure the success of the pilot so that the funding support would continue to allow for sustainability of the network and to provide additional funding opportunities for regional community-based monitoring efforts. The project budget was revised to reflect these recommendations and was approved by NSF in 2007. The project commenced on June 1, 2007.

An October 2007 Bering Sea Sub-Network workshop was organized to confirm the overall goals and structure of the network, to design a draft questionnaire for the initial survey, and to develop the procedural guidelines for the governance of the network.

¹ The Arctic Council (AC) is an international, intergovernmental circumpolar organization with eight state members (Canada, Denmark, Finland, Iceland, Norway, Russian Federation, Sweden, and the United States) and six Indigenous Peoples organizations, called Permanent Participants (The Aleut International Association (AIA), the Athabaskan Arctic Council (AAC), the Gwich'in Council International (GCI), the Inuit Circumpolar Council (ICC), the Russian Association of Indigenous Peoples of the North (RAIPON), and the Saami Council (SC). The Arctic Council provides a mechanism to address common concerns and challenges faced by Arctic residents through scientific research, program implementation, and development of policy recommendations.

EXECUTIVE SUMMARY

The Bering Sea Sub-Network (BSSN) is an International Polar Year (IPY) project involving six indigenous coastal communities in the Bering Sea region in the United States and the Russian Federation to observe environmental changes and to develop a process for data management of this information. The project is funded by the National Science Foundation as part of the Arctic Observing Network and will be implemented from June 2007 through May 2009. BSSN is a cooperative effort of the Aleut International Association (lead), University of Alaska, Alaska Native Science Commission, and UN Environmental Program – Global Resource Information Databank in Arendal.

This report summarizes the process and outcomes of the workshop, the official launch of the project, organized on October 15-19, 2007, in Anchorage. This workshop was the first face-to-face meeting of project researchers, staff, and representatives of the selected communities, three in the United States and three in Russia, representing five indigenous cultures: Aleut, Chukchi, Koryak, Yup'ik, and Siberan Yup'ik. These communities are Gambell, Togiak, and Sand Point in Alaska and Kanchalan, Chukotka; Tymlat and Nikolskoye, Kamchatka in Russia.

The workshop addressed three main objectives: introduction of all partners and establishing personal connections, the development of a draft survey instrument and formalizing the network structure.

All participants expressed their appreciation for the opportunity to meet in person and to learn first-hand about each other. This was an important step in strengthening the ties connecting communities into the network.

BSSN will be governed by the Steering Committee consisting of one member per region. Decisions will be made by consensus. The Steering Committee will be responsible for making decisions on access to the raw data, appropriate methods of communication with and between BSSN villages, and for nominating spokespersons for BSSN.

Representatives and researchers had extensive discussions on how to make the survey process effective in the villages. Considering that many of them have been so over-surveyed, convincing people to participate in yet another survey may be challenging. Generating series of sets of interviews over a year period, including the times of busy subsistence or commercial activities presented another layer of difficulty. As a compromise, it was agreed that interviews would be scheduled around seasonal activities and the researchers would design the analysis in such a way that incomplete sets of interviews could be used. Each community will determine the best incentive plan and will receive sufficient training to perform the survey.

The scope of the pilot project limits the number of species that could be realistically surveyed and after some deliberation the decision to focus on fish resources was confirmed with a note that the survey instrument should use neutral language, so that it could be applied to any sea-based harvest.

The group generated Russian language and English language draft questionnaires and discussed the questions. The result is the first draft that will undergo multiple steps of refining and testing with the assistance of survey specialists and village experts. The questionnaire will have the title "Coastal Community Observations of the Bering Sea Traditional Harvest".

In closing remarks, all participants noted gaining better understanding of BSSN and how it may benefit their communities. Despite the language barrier, indigenous participants from Alaska, Chukotka and Kamchatka found many similarities in their cultures and common concerns about resources that sustain their villages. The Bering Sea Sub-Network will strive to become an extended family with sharing connections between its members.

Victoria Gofman

PROJECT SUPPORT

National Science Foundation (NSF)

BSSN is funded by the U.S. National Science Foundation under the International Polar Year Program, "The Arctic Observing Network."
www.nsf.gov

ACKNOWLEDGEMENTS

Aleut International Association would like to express its appreciation for additional financial support and acknowledge commitment and involvement of the following agencies, and organizations during preparation for this project.

- U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs
- Environment Canada
- UAF, International Arctic Research Center
- Alaska Conservation Foundation

and

- Bristol Bay Native Association, Alaska, U.S.
- Traditional Council of Gambell, Alaska, U.S.
- Kamchatka Region Union of Tribal Fishermen, Kamchatka, Russia
- Chukotka Regional Association of Indigenous peoples of the North, Chukotka, Russia
- Administration of the village of Tymlat, Kamchatka Region, Russia
- Administration of the village of Kanchalan, Chukotka, Russia
- Red Cross Chukotka
- Tymlat Fish Processing Plant, Chukotka
- The Government of Chukotka Region
- The Government of Kamchatka Region

PARTICIPANT LIST

Name/ Organization	Location	Email
Lillian Alessa, PhD Associate Professor of Biology, UAA BSSN Co-PI	Anchorage, Alaska	afla@uaa.alaska.edu
Iver Campbell Native Village of Gambell Council Member	Gambell, Alaska	btungiyar@yahoo.com
Helen Chythlook Marine Mammal Coordinator Bristol Bay Native Assoc.	Dillingham, Alaska	hchythlook@bbna.com
Molly Chythlook Natural Resources Dept. Director Bristol Bay Native Assoc.	Dillingham, Alaska	mchythlook@bbna.com
Patricia Cochran Executive Director, AK Native Science Com. BSSN Co-PI	Anchorage, Alaska	pcochran@aknsc.org
Jim Gamble AIA Assistant Director	Anchorage, Alaska	aia@alaska.net
Victoria Gofman AIA Executive Director BSSN PI	Anchorage, Alaska	victoriag@alaska.net
Arlene Gundersen Pauloff Harbor Tribe Tribal Administrator	Sand Point, Alaska	pauloff@arctic.net
Andy Kliskey, PhD Associate Professor of Biology, UAA BSSN Senior Researcher	Anchorage, Alaska	afadk@uaa.alaska.edu
Moses Kritz President of Togiak Tribal Council	Togiak, Alaska	Traditionalcounciltogiak@starband.net
Lyudmila Kulchitskaya Kanchalan Administration	Kanchalan, Chukotka	c/o redcross@chukotka.ru
Svetlana Petrosyan, Deputy Head, Tymlat Administration	Tymlat, Kamchatka	c/o tk@civitas-er.org
Natalya Tatarenkova PhD Student, Biologist Nikolskoye	Nikolskoye, Kamchatka	ntaraxacum@yandex.ru
Ivan Vozhikov Fisherman and hunter AIA Board Member, Nikolskoye	Nikolskoye, Kamchatka	c/o ntaraxacum@yandex.ru

Janice Walton AIA Project Assistant	Anchorage, Alaska	janicew@aia.alaska.net
--	-------------------	--

WORKSHOP AGENDA

Bering Sea Sub-Network Implementation Workshop
Aleut International Association
Anchorage, Alaska

Agenda

Monday October 15, 2007

- | | |
|--------------------|---|
| 10:00 AM – 1:00 PM | Plenary (Moderator: Andy Kliskey) <ul style="list-style-type: none">▪ Welcoming remarks▪ Participants introductions<ul style="list-style-type: none">○ 5-10 min. community presentations▪ BSSN review |
| 1:00 AM - 2:00 PM | Lunch |
| 2:00 PM - 3:00 PM | Discussion: What kind of a network do we want to form? (Moderator: Lillian Alessa) <ul style="list-style-type: none">▪ Long-term goals▪ Structure▪ Opportunities and challenges▪ Governance |
| 3:00 PM - 3:20 PM | Break |
| 3:20 PM – 5:00 PM | Discussion: What do we need to accomplish this week? (Moderator: Andy Kliskey) <ul style="list-style-type: none">▪ To formalize the network▪ For the pilot research |
| 5:00 PM – 5:30 PM | Closing remarks:
(Moderator: Victoria Gofman) <ul style="list-style-type: none">▪ What are our goals for the week?<ul style="list-style-type: none">○ Commentary from each participant about goals |
| 5:30 PM | Meeting Adjourn |

Tuesday October 16, 2007

- | | |
|--------------------|---|
| 9:00 AM – 10:00 PM | Discussion: Organizational structure of BSSN
(Moderator: Patricia Cochran) |
|--------------------|---|

- | | |
|---------------------|---|
| 10:00 AM – 12:00 PM | Presentations and Discussion: Proposed survey process and data management (A Kiskey, V. Gofman) <ul style="list-style-type: none"> ▪ What are the communities' concerns about the proposed process? ▪ Is the proposed plan realistic for your community process? ▪ What can be done to improve it? |
| 12:00 PM – 1:30 PM | Lunch |
| 1:30 PM – 4:00 PM | Break out session- Russian speakers and English speakers (Moderators: P. Cochran, V. Gofman) <ul style="list-style-type: none"> ▪ What issues were identified in the morning session? ▪ What are recommendations to address those issues? |
| 4:00 PM – 6:00 PM | Groups present their findings |
| 6:00 PM | Meeting Adjourn |

Wednesday October 17, 2007

Draft questionnaire and survey procedures development

- | | |
|--------------------|--|
| 9:30 AM – 11:00 PM | Discussion: (Moderator: Marty Waters) <ul style="list-style-type: none"> ▪ Discuss promotional items |
| 11:00 AM – 12:00 | Review of draft questionnaire (Moderator: L. Alessa) |
| 12:00 PM – 1:30 PM | Lunch |
| 1:30 PM – 2:00 PM | Discussion: The use of language in the survey |
| 2:00 PM – 5:30 PM | Review of draft questionnaire- break out session- Russian speakers and English speakers (Moderators: L. Alessa, V. Gofman) <ul style="list-style-type: none"> ▪ Review of questions |
| 5:30 PM | Meeting Adjourn |

Thursday October 18, 2007

- | | |
|--------------------|--|
| 9:00 AM – 12:00 PM | Discussion: Review of draft questionnaire <ul style="list-style-type: none"> ▪ Types of questions |
|--------------------|--|

- Open-ended
 - Multiple choice
 - Comparison of Russian and English versions
 - Discussion: survey title
- 12:00 PM – 1:30 PM Lunch
- 1:30 PM – 5:00 PM Survey development (V. Gofman, N.Tatarenkova, A Kliskey)
- 1:30 PM – 5:00 PM Discussion: Development of policies and procedures for BSSN (Moderator: Jim Gamble)
- 5:00 PM – 5:30 PM Distribution of questionnaire 1st draft for review
- 5:30 PM Meeting Adjourn

Friday October 19, 2007

- 9:00 AM – 12:00 PM Discussion: Discussion about questionnaire 1st draft (Moderator: V. Gofman)
- How best to introduce surveys in communities
 - Survey title
 - Translation into local languages
 - Survey questions
- 12:00 PM – 1:30 PM Lunch
- 1:30 PM – 4:00 PM Discussion: Finalize BSSN policies and procedures (Moderator: P. Cochran)
- Procedural guidelines
 - Education and outreach
 - Conflict resolution
 - Data management
 - Internal communication
 - Website
 - Membership
- 4:00 PM Conference Close

OPENING REMARKS

Sally Swetzof (Moonwoman- Unangas from Atka) inspired conference participants with her opening remarks. She shared the following thoughts and sentiments regarding the project.

"This is the first face-to-face meeting for members of BSSN. Although Alaska means "mainland," many BSSN members are from island communities that are dependent on the Bering Sea. It is important to have an open mind in order to create the kind of world that we want for ourselves and our children. This meeting will allow us to form friendships and working relationships that allow us to learn from one another and gain a better understanding of the environment. Indigenous knowledge is as important as modern science. Now this fact is being recognized on a global scale. In the past, men and elders met together every evening. They would discuss what to expect the coming day in order to plan for the following day.

This is what this gathering reminds me of, but on a much larger scale. You are all coming together to share your experience from your village; to share what you have learned here when you return to your village. So now you have taken the first step by coming to this meeting. You know what the next steps will be. Remember that what you are doing will benefit many people- not just the people who live in your village. It will benefit many more people who live throughout the area of the Bering Sea. Thank you for the work you are doing."

GOALS AND OBJECTIVES

The stated goals of the BSSN workshop are as follows:

1. To formalize the network and outline governance
2. To structure BSSN and develop procedural guidelines
3. To develop a draft survey instrument

Additional meeting objectives:

- To consider methods of communication for members
- To consider data management issues
- To discuss intellectual property ownership issues
- To discuss the introduction of the survey to each community
- To consider the concerns of member communities
- To incorporate the ideas of member communities into the overall BSSN plan

At the very core of BSSN is the idea that the participating communities should be involved at every level of planning and development of the network. This face to face meeting may be a unique opportunity for BSSN members, and each participant was asked to describe his or her own goals for the week.

Ivan expressed that he wanted to see what participants are supposed to do and to learn how it will be done.

Ivan hoped to gain understanding about how the system and Network will function.

Svetlana said that she wants to provide information about species that are vital to her community in order to learn what can be done to protect them.

Natalya stated that she wants to help develop a system- a database that is accessible to communities that provides the information they need.

Lyudmila said that she hoped to take in all of the information provided and then communicate that information in an adoptable way.

Helen hoped to learn what can be done through the network that will benefit the Togiak and Bristol Bay people.

Molly wanted to gain information about the project that she could then convey to the tribal council and village in such a way that they will agree to be involved.

Janice expressed that she looks forward to providing the administrative support that is necessary for the success of this project.

Jim's goal for the meeting was to get the participants what they need, to answer questions, and to address any concerns that they might have.

Victoria summarized the conference's stated goals which were to formalize the network, to form policies and procedures, and to decide on a governing body for BSSN.

BSSN COMMUNITIES

Figure 1: BSSN Communities



Participating Members:

- Gambell, Alaska
- Togiak, Alaska
- Sand Point, Alaska
- Kanchalan, Chukotka
- Tymiak, Kamchatka
- Nikolskoye, Kamchatka

INTRODUCTION OF VILLAGES

Nikolskoye:

Natalya Tatarskaya began by showing a map of the Commander Islands. She described Nikolskoye and talked about fur seal rookeries there. Natalya said that in the last century there have been many changes. She shared photos of Medny Island village and Nikolskoye today. She described how everyone there depends on the sea. Fishing is the traditional trade and the primary fish are Sockeye, King, and Pink salmon.

Fur seals are also hunted and traditional use of resources continues. She described how puffins are taken with traditional tools. She described the collection of seagull eggs and the subsistence gathering of seaweed. She said that gastropods and sea urchins are collected and eaten by children. Mussels and clams and many other species are harvested for food.

Natalya shared her concern about the number of these animals in decline.

Togiak:

Molly presented a slide show that demonstrated the resources used by Togiak and Dillingham. The economy there is based primarily on fish. Dillingham has about 1000 residents and Togiak is about 300 and they are Yup'ik Eskimo. Because of their remote location, the people of Togiak continue to be dependent on Bering Sea resources.

Marine mammals and salmon are both vital resources and most are harvested for home use. Molly commented that climate change is affecting resource availability.

The village harvests five species of salmon. And she made the point that salmon numbers have a direct affect on sea mammal stocks. Togiak relies heavily on marine mammals for their meat and for seal oil. She said that seal are no longer as fat as they once were and she wondered if the decreased fat content is diet related.

She described how commercial fishing depletes fish stocks. She is concerned about global warming and over-fishing. People in the community have noticed changes in the food chain and are interested in the type of research that will be done by BSSN. She said that people are open to and interested in participating in research such as this.

Gambell:

Iver began by expressing his thought that Gambell is an Ideal location for the study of climate change. Gambell is located on the northwestern side of St. Lawrence Island which is located between Alaska and Siberia- about 38 miles from Siberian coast. There are more than 800 residents.

Communities rely on subsistence. They rely on whales, fish, and all of the animals from the Bering Sea. They also gather edible plants. For centuries the people have studied ice and the patterns of formation of ice. In the past ice chunks ahead of ice pack arrived in late October and the people of Gambell have always known the different kinds of ice. This is necessary knowledge for the hunters' safety. Iver said that now there are so many changes in the ice, marine mammals, and birds that it is hard to know where to begin to tell about it.

Ice chunks have not arrived as before for years and it is possible to see climate change in the behavior of the ice. Arrival of ice is late now- ice doesn't arrive now until December. Before, it arrived in November. Now it is dark, thin ice- not the thick ice that was present before. It is not as stable for the marine mammals found on it.

Large walrus were hunted previously around Thanksgiving time. Now November is warmer. Warming starts now in February. Large open leads around Gambell appear earlier and Bowhead whales are now wintering around Gambell when they should further south.

Iver noted that marine life around Gambell is different than it used to be and said that foreign species are arriving due to climate change. Hunters have to go out further in the spring to take walrus and ice goes out sooner than normal. Before it left in late June, now it leaves mid-May. The thin ice that comes first is unsafe for mammals to get on- especially for the walrus that need the ice to give birth to their calves. He said that walrus are experiencing hardship. Unexpected storms cause loss of walrus calves because the females cannot get onto the ice to see the walrus calves through the storm.

Iver said that there were other changes this year that were very noticeable. Plants that grow on the tundra are 2 to 3 times bigger. Local fisherman say that sea water is warmer. The tundra is falling down. The permafrost is melting and the Bering Sea water is coming up onto low-lying beaches.

Chukotka:

Lyudmila described traditional activities in Kanchalan. In the winter there is ice fishing, and duck and geese hunting. There is also hunting for marine mammals such as walrus and whales. There are 700 residents in the village- mostly native. The primary occupation is reindeer herding.

Gold mining is a concern because the waste is dumped into rivers. This concern has been raised at tribal meetings. Another problem with gold mining is that it has destroyed the pastures used for reindeer, and this is their main traditional activity.

Global warming is another concern and Lyudmila said that it is her hope that BSSN may help them to solve some of their problems.

Tymlat:

Svetlana presented information about Tymlat which is located on Kamchatka peninsula. There are about 900 residents, of whom about 90% are Native.

Dog sleds are used in Tymlat and they are, in fact, famous for their dog sledding. She discussed their traditional way of life- making fire, summer fisherman dwellings, and fish camp. Historically, their main subsistence activity is reindeer herding, but now fishing and seal hunting are also very important.

Svtlana described their winter celebration, Hololo, in which they celebrate hunting and gathering and thank Nature for what it has provided. During the celebration, parts of the seal are distributed to members of the

community. Usually the meat is distributed to those who cannot provide for themselves. Gifts are presented to the fire in appreciation for Nature's gifts.

In the winter, enough fish are harvested to support the village. Different kinds of fish are available, with the most important being five species of salmon: Pink, Sockeye, Red, King, and Chum.

Svetlana says that there are issues with impacts of over-fishing. In the past, nets were sometimes used to block the mouth of the river to harvest fish. Native people applied to the governor to stop this and it was stopped. These sorts of issues must be addressed to preserve fish for future generations.

She explained that fish numbers are no longer stable and that the timing has changed. The beginning of July was the time for salmon fishing before, and now it is earlier. It is believed this is due to global warming.

SAND POINT:

Sand Point is located on the northwest portion of Popof Island, 570 miles from Anchorage. It is in the Shumagin Island group that lies south of the Alaska Peninsula. Sand Point was founded in 1898 by a San Francisco fishing company as a trading post and cod fishing station. Aleuts from surrounding villages and Scandinavian fishermen were the first residents of the community.

Popof Island is a haven for wildlife, it is host to numerous species of birds, including eagles, cormorants, kittiwakes and puffins. A large herd of buffalo, managed by the Shumagin Corporation, roam freely in protected valleys. Otters, sea lions, and seals are regular visitors to the harbor and beaches. Migrating whales are also seen during the summer months in Popof Strait.

Popof Island, like the rest of the Aleutians, is naturally treeless. Native vegetation consists of alder and willow shrub, and alpine tundra. In the summer months the island is rich in salmonberries, mossberries, blueberries, and cranberries. Grasses and sedges, mosses and wildflowers are also abundant.

Sand Point, with a population 890, is home to one of the largest commercial fishing fleets in the Aleutian Chain. The community is a mix of Unangan and non-Native residents. It is characterized as self sufficient and progressive, with commercial fishing activities at the heart of the local culture. Cod, salmon and halibut have been and remain the mainstay of the city. Nearly everyone has at least one family member who is a commercial fisherman.

OVERVIEW & MAIN ELEMENTS

Project Overview

The Bering Sea Sub-Network: International Community-Based Environmental Observation Alliance for Arctic Observing Network (BSSN) is an International Polar Year (IPY) project involving mostly coastal indigenous communities in the Bering Sea region to monitor and share the environmental changes they observe.

BSSN may become a model community-based monitoring network for the Circumpolar Biodiversity Monitoring Program of the Conservation of Flora and Fauna Working Group of the Arctic Council. This collaborative effort will connect individuals bound by a common geographic area and sharing similar traditions, values and ideals but who are separated by great distances. Within the network there will be an emphasis on the sharing of values, methods and wisdom of indigenous peoples and traditional knowledge systems and linking it to concerns within the conventional science arena. Through this network a dialogue will be created that will assist in the exchange of information and ideas central to analyzing important issues within the region.

Victoria Gofman, AIA executive director and BSSN managing co-principle investigator, made a presentation on the project's main elements and its history. She discussed the initial concept for the Bering Sea Sub-Network, the October 2005 BSSN Workshop and the May 2006 grant proposal submitted to the National Science Foundation (NSF). AIA received official approval of that grant application in June 2007.

Ms. Gofman stated that the BSSN pilot objectives should be to demonstrate the following:

1. The network can function.
2. Information can be collected efficiently.
3. Consensus on data management can be reached.
4. The methodology used by the network has scientific merit.

DEVELOPMENT OF SURVEY INSTRUMENT FIRST DRAFT

A primary goal for this workshop was the development of a first draft of the survey instrument. For BSSN, this is a group effort carried out by scientists and community representatives who are working together to develop a survey tool. Equally important is the inclusion of open-ended questions and the development of a coding system that will allow for synthesis of this type of information. This section provides an overview of this process throughout the week.

A significant portion of the conference was devoted to collaboration between the representatives from each community and the co-PIs to produce a questionnaire that will collect specific information that members feel is essential to the goals of this project. Fundamental to this endeavor is that the survey must effectively capture traditional ecological knowledge.

It was decided that the survey should cover any marine harvesting activity. The idea is to interview fishermen/ hunters twice: pre-harvest and post-harvest. The first questionnaire will ascertain their expectations based on previous hunting/ fishing trips, and then the second will establish details about the actual take. The questionnaire will be precise and focused and developed in such a way that it can be expanded in the future. After a final working draft gains approval from member participants, it will undergo expert review by consultants at Westat.

The following points were discussed:

- Title
- Time frame
- Community approval process
- Training
- Number of surveys
- Survey length
- Questionnaire content
- Public relations and promotional materials
- Challenges

Decisions

- Title: Observations of the Bering Sea Traditional Harvest
- Survey will cover a twelve month period
- Local approval must be gained for every community
- Research assistants will receive training in:

- Methodology
- Conflict resolution
- Translation of technical terms
- English and Russian language versions of the survey instrument will be developed
- When necessary, the survey instrument will be translated into the local language by bilingual assistants
- Target goal is 100 households per community
- Target participants are high harvesters
 - Respondents will be paid for their time
- The survey instrument will be concise
 - Each interview should take no longer than one hour
 - The survey process should be minimally disruptive to hunting/ fishing events
- The survey should capture:
 - Resource availability
 - Quality of catch- flesh
 - Quality at the time of preparation
 - Quality at the time of consumption
 - Environmental change
 - Harvesting location shifts or changes
 - Comparisons between past and present conditions
 - Any other observations of unusual occurrences
- Publicity Ideas
 - Newspaper
 - Radio
 - Quarterly newsletter
 - Posters/ displays in public places
- Promotional items considered:
 - Brochures, handouts, fliers
 - Pens
 - Caps/ hats/ jackets
 - Backpacks
 - Cups
- Challenges
 - Many communities in Alaska are inundated with surveys
 - May be difficult to get both the pre and post questionnaires accomplished

- Hunters and fishermen are very busy- have a lot to do already
- Other ideas
 - Elders have much in the way of knowledge and experience to contribute
 - Identify key respondents

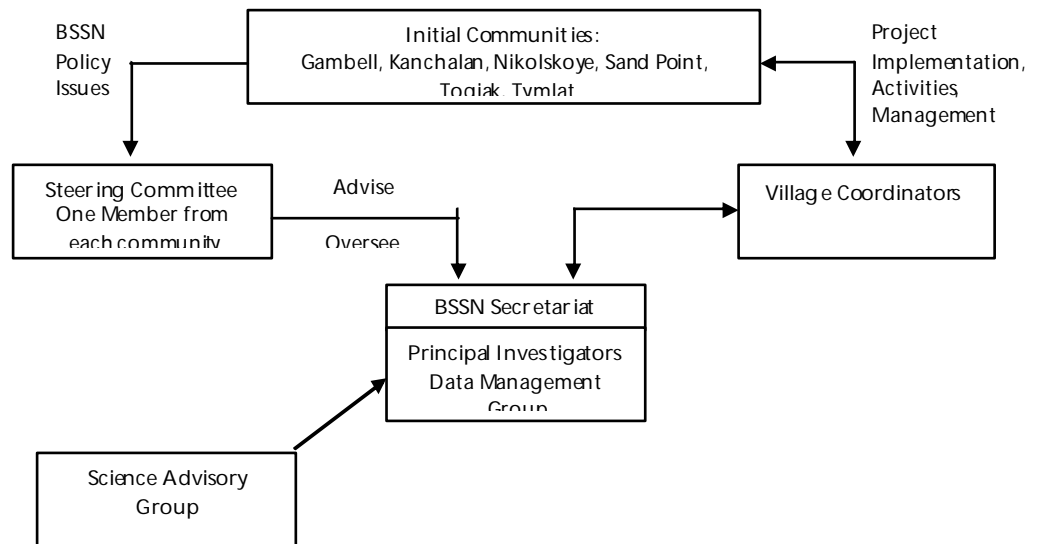
Data Management

Data management is a key component of this project. Standards are essential to managing GIS data. File naming conventions, directory structures, projections and datums will be established during the implementation of a GIS database. Accessibility, password protection, firewalls and query based search features will be explored. There will be a need to develop a consensus-based collaborative idea on what accessibility to data and information is and means.

- Data will be physically entered and stored
- Data will be disseminated via the Internet
- Data will be housed at the BSSN office in Anchorage until the time when communities have the capacity to manage and distributed database.
- A management team will organize the data in time/space for users
 - A data manager will handle requests, permissions, and data organization based on the policies adopted by the steering committee
- Confidentiality is a key concern
 - Sensitive data such as exact locations of hunting and fishing sites must be safeguarded
 - Tracking sheets utilized to disassociate names from surveys
 - Completed surveys will be maintained under lock and key
 - All data and survey results will be the property of BSSN member communities
 - BSSN will maintain full control of the data

BSSN: WORKSHOP DISCUSSION

Figure 2: BSSN Structure



BSSN Procedural Guidelines

Although BSSN is a project, in order for the network to function it is necessary for a structure to be in place. This will be even more important in the future as the network expands. Community representatives discussed not only the structure of the network, but also established guidelines that will allow the network to function and will facilitate cooperation and communication between member communities.

There were four issues that participants felt should be addressed by these guidelines:

- Membership
- Data control (Details on page 14)
- Communication (internal and external)
- Administrative management

Membership:

- New members by invitation or by application
- Members must be Bering Sea coastal communities
- By village rather than by tribal entity

Steering Committee/ Administration:

- One representative per region
- Named proxies
- Quorum currently consists of 4 (2 Russian and 2 Alaskan)

- Decisions made by consensus/ majority rule
- Votes taken via email

Communication:

- External
 - Website in both English and Russian
 - Link with other networks and organizations
- Internal Communication
 - Links to web-based communication tools on website
 - Email
 - Skype
 - Meetings via teleconference

BSSN Project Timeline/ Next Step

This project has, in many ways, already begun. There has been concept development, the initial October 2005 workshop, the funding proposal submission to NSF, November 2006 workshop, and the October 2007 workshop.

The survey instrument will undergo several drafts and expert review before a final version is ready to be submitted to members for approval. Pilot test results will be submitted to Westat and a final revision could be accomplished in January and February. If a final draft is ready for distribution in March, then interviews could begin in April 2008.

In the meantime, local offices should be planned and set up so that local coordinators can begin work in December. The start of the 12 month survey period may begin in April 2008. The NSF grant period is from June 1, 2007 through May 30, 2009.

After the completion of the pilot program, the intention is to submit a proposal for an extended project that will include more villages and will expand BSSN.

WORKSHOP RESULTS

BSSN:

A formalized network devised to gather and record observations, to provide oversight for the organization and management of data, and to participate in discussions on issues of common concern. The network consists of six communities engaged in monitoring. A secretariat provides a central location for the development of data management protocols, internal and external communication, and helps link BSSN with the Arctic Observing Network and other arctic research.

The meeting successfully accomplished its stated goals. The formation of a steering committee, the approval of procedural guidelines, and the decision on governance all provide the necessary structure for BSSN to function effectively. Issues for steering committee consideration were defined and include data management, communications, and other program issues as they arise. The steering committee is also tasked with cultivating and maintaining network connections. Overall, this organizational structure will allow for the extension of the BSSN program and for future expansion of the network.

A great deal of time and energy was devoted to the development of the first draft of the survey instrument. This collaborative effort between community representatives and scientists resulted in a draft instrument that reflects and addresses members' concerns.

The information garnered by this survey will be assembled in a final report that can be used by member communities. The resulting reports will be valuable tools in the hands of communities as they seek better resource management to preserve and continue a traditional way of life.

This contributes to the long term goals of BSSN in that it will assist communities in their attempts to improve sustainability of resources. It will empower communities in their resource management endeavors. And it will encourage cultural connections and communication between groups of people who share similar concerns.

PARTICIPANT BIOGRAPHIES

Dr. Lillian (Na'ia) Alessa, co-Principle Investigator

Dr. Alessa is an Associate Professor in Biological Sciences at the University of Alaska, Anchorage and the leader of the Resilience and Adaptive Management Group. She has a background in ecology, toxicology, cognitive psychology, and environmental science. Her research focus is on the response, resilience, and adaptation of human communities to environmental change. She has been a board member of the Arctic Research Consortium (ARCUS), which includes science-planning activities for the Arctic and as the "Enabling Education" liaison for the University of Alaska, Anchorage (2000-2002). She is co-PI on several large initiatives, including Resilience and Change in the North (EPSCoR) and the Humans and Arctic Environmental Change Community of Practice (ARCSS). She is co-PI on "The Intersection Between Climate Change, Water Resources and Humans" and "Humans and Hydrology at High Latitudes." The overall objective of the research is to understand the vital role of freshwater in the lives of humans in the Arctic, its values and uses, how it has changed in the past, and how future changes will affect societies in the North. A model, applicable at both local and circumarctic scales, enables responses by humans to climate-induced changes in the hydrologic cycle to be examined.

Iver Campbell, Steering Committee Member

Iver Campbell lives in Gambell, Alaska and is a member of the Native Village of Gambell traditional council. He is a marine mammal hunter and a fisherman.

Helen Chythlook, Village Coordinator

Helen Chythlook lives in Dillingham, Alaska and is the Marine Mammal Coordinator for the Bristol Bay Native Association.

Molly Chythlook, Steering Committee Member

Lives in Dillingham, Alaska and is the Director of the Natural Resources Department of the Bristol Bay Native Association

Patricia Cochran, co-Principle Investigator,

Patricia Cochran was born and raised in Nome, Alaska. Ms Cochran serves as Chair of the Inuit Circumpolar Council, an international organization of Inuit dedicated to protect and advance Inuit rights and interests on the international level. She also serves as Chair of the Indigenous Peoples' Secretariat to the Arctic Council and as Executive Director of the Alaska Native Science Commission, an organization created to bring together research and science in partnership with Alaska Native communities.

Ms. Cochran has served as Principal and Co-Principal Investigator on numerous research projects throughout the Arctic, including the Survey of Living Conditions, Traditional Knowledge and Contaminants Project, Traditional Subsistence Project, and Indigenous Knowledge Systems Colloquium. Ms. Cochran has extensive knowledge of key issues impacting Arctic communities and has spoken at forums worldwide. She has written numerous articles and publications and appeared internationally on programs reporting on climate change and indigenous issues. Ms. Cochran was raised in a traditional way of life and spent more than twelve years apprenticing with Elders and traditional healers to become a traditional facilitator in Native communities.

Ms. Cochran has served as Chair of the Native American Caucus of the American Public Health Association; Science Advisor to the Arctic Research Commission; Advisory Committee Member for National Science Foundation Office of Polar Programs; Governing Council Member of the International Union for Circumpolar Health; President of the Abused Women's Aid in Crisis Center; Member of Alaska Native Educators' Association; and Board Member of Native American Cancer Research.

Joan Eamer, co-Principle Investigator

Joan Eamer is the Director of the Polar Program of the UN Environmental Programme – Global Resource Information Databank, Arendal, Norway. She has over ten years of experience in leading a successful community-based network, Arctic Borderland Co-operative.

Jim Gamble, AIA Assistant Director

Jim Gamble is Assistant Director of Aleut International Association. He is a lifelong Alaskan born in Anchorage who graduated from the University of Alaska, Anchorage with a B.S. in Biology.

Victoria Gofman, Principle Investigator

Victoria Gofman is the Executive Director of AIA and has been actively promoting and developing community-based projects led by indigenous organizations through her international work in the Arctic Council and other fora. She has been a catalyst in developing an international network for community-based monitoring projects in the region. In recent years, she contributed to major Arctic Council reports: the Arctic Climate Impact Assessment, the Arctic Human Development Report, the Arctic Marine Strategic Plan, and the Discussion Paper on Community-based Monitoring for the Circumpolar Biodiversity Monitoring Program where she serves on a Steering Committee as a co-lead on community-based monitoring.

Arlene Gundersen, Steering Committee Member

Arlene Gundersen lives in Sand Point, Alaska and is the Tribal Administrator of the Paubff Harbor Tribe.

Dr. Cynthia Helba, Survey Design Consultant, Westat*

Dr. Cynthia Helba is a sociologist and a Senior Study Director with 16 years of experience in social science research. One of her primary focuses during this time has been research related to social programs directed at American Indians, Alaska Natives, and other Native Americans. Dr. Helba is also a skilled social science analyst. She has expertise and experience in model development using a variety of types of data sets, including large national survey databases and longitudinal data. Her work has involved the use of state-of-the-art techniques, including structural equation modeling with latent variables, event history analysis, hierarchical linear modeling, survival models, and simultaneous equations to account for sample selection and attrition bias. Based on her analyses, Dr. Helba has written numerous papers and contributed to reports for research and policymaking audiences. In recent research, she evaluated alternative methods for collecting performance measures to assess progress in implementing long-range strategic plans.

Dr. Andrew Kliskey, Senior Scientist

Dr. Kliskey is an Associate Professor of Biological Sciences and Geography/Environmental Studies at UAA
Otago, New Zealand, B.S. (1986), M.S. (1988), PhD (1992)

Area of expertise: Landscape ecology, human ecology, geographic information systems, behavioral geography.

Courses regularly taught: GEOG/ENVI A490

Moses Kritz, President of Togiak Tribal Council

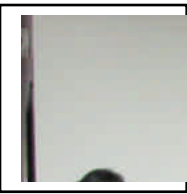
Moses Kritz lives in Togiak, Alaska and is the President of the Togiak Tribal Council.

Lyudmila Kulchitskaya

Lyudmila Kulchitskaya lives in Kanchalan, Chukotka. She works for the local government.

Dr. Kerry Levin, Survey Design Consultant, Westat*

Dr. Kerry Levin is an experimental social psychologist and Westat Associate Director with more than 20 years of experience conducting large business and household surveys related to customer service and evaluation for agencies such as the National Institute of Standards and Technology, the Internal Revenue Service, and the U.S. Patent and Trademark Office. She specializes in survey design, administration, and analysis. Dr. Levin has also been involved in several methodological feasibility studies for the Bureau of Labor Statistics and the National Institute of Standards and Technology to identify the most cost-effective procedures for collecting data from individuals within business establishments. She has conducted surveys using a variety of modes,



including web, paper-and-pencil, in-person, and telephone administration. Dr. Levin is also an expert in qualitative research using methods such as focus groups and cognitive interviewing to improve survey comprehension and assess consumer marketing strategies. Recently, she has been involved in a series of cross-cultural studies for the National Cancer Institute that involves techniques such as cognitive testing, retrospective debriefings, and behavior coding to evaluate survey items in languages such as Chinese (Mandarin and Cantonese), Spanish, Vietnamese, and Korean.

Svetlana Petrosyan

Svetlana Petrosyan is from the village of Tymlat, Kamchatka. She serves as village Administration Deputy Head.

Natalya Tatarenkova

Natalya Tatarenkova lives in Nikolskoye, Bering Island. She is a biologist and currently is writing a PhD dissertation entitled "Aleut Traditional Knowledge of Flora and Fauna".

Ivan Vozhikov

Ivan Vozhikov lives in Nikolskoye, Bering Island. He serves on AIA's Board. Ivan is an experienced hunter and fisherman.

Janice Walton, AIA Project Assistant

Janice Walton lives in Anchorage, Alaska and is a Project Assistant for Aleut International Association. She is working towards her B.S. in Anthropology at the University of Alaska, Anchorage.

*WESTAT- Study Design and Analysis, and Research Methodology:

Westat is expert in statistical sample design and the development and testing of survey instruments for qualitative and quantitative studies. They specialize in developing and evaluating research methods in any substantive area across all phases of the survey process.

Westat will provide guidance in the development of an effective questionnaire. The social science researchers at Westat will assist in the design of the study to ensure that the survey instrument captures quantitative results. Program area specialists will work with BSSN to translate study goals into specific data items. Questionnaire specialists will apply their experience to review the survey instrument and to suggest procedures that may be helpful to interviewers as they work with survey respondents.