



*Panelists did not prepare remarks in advance of the discussion. What follows are the main points made by each panelist in response to questions posed by each panel's moderator.*

## Panels

### Panel 1: International Cooperation in the Bering Strait Region

#### MODERATOR

**Sue Masica**, Regional Director, Alaska Region, National Park Service

#### PANELISTS

- **Pat Pourchot**, Special Assistant to the Secretary for Alaska Affairs, U.S. Department of the Interior
- **Dan Reifsnnyder**, Deputy Assistant Secretary for Environment, U.S. Department of State
- **Irina Ryabukhina**, Head, Committee for Sports and Tourism, Chukotka Autonomous Okrug, Russia
- **Olga Safonova**, Deputy Head, Chairwoman, Committee of Nature Use and Preservation of Environment, Department of Agricultural Policy and Nature Use, Chukotka Autonomous Region, Russia
- **Mead Treadwell**, Lieutenant Governor, State of Alaska

**Sue Masica:** As others have said, welcome to 2011 Beringia Days Conference. We are delighted to be in Nome. The National Park Service has been working on this program for some 20 years. This panel is composed of a distinguished set of speakers representing a cross section of cooperation in this region. Our panelists have been asked to review and respond to several questions to start this panel discussion. We want this discussion to be the kickoff for a lot of interaction over the next two days. One of our hopes is to engage all of you in a conversation about how to enhance cooperation across the region. An international park is one way to strengthen international cooperation. If you have ideas, there's a session tomorrow afternoon to solicit them. Or you can write down your comments, too.

#### What are some highlights of ongoing cooperation in the Beringia region?

**Mead Treadwell:** As Lieutenant Governor of Alaska – welcome to the Russians, welcome to Nome, welcome to Alaska. Ongoing cooperation has brought knowledge and continuity. The Shared Beringian Heritage Program has done a tremendous amount to help support scholars and researchers across both sides of the

Bering Strait. We have had continuous connections across the strait for at least 10,000 years – Semyon Dezhnev's voyage in the area; also the Friendship Flight anniversary. With these anniversaries, we hope that the joint statement of the Presidents of the United States and the Russian Federation on cooperation in the Bering Strait region will open the door fully and firmly for access and the entire panoply of activities and opportunities across the Bering Strait. We have talked about an annual meeting to review the progress in building on this cooperation, and this is the closest meeting we have had to look over our efforts.

**Dan Reifsnnyder:** I would first like to extend condolences of all Americans about the plane crash in Yaroslavl and the loss of the hockey team. What is fascinating to me is that this Shared Beringian Heritage Program has been going on since 1991 with more than 130 projects; Congress has appropriated funds, and there has been deep and rich cooperation. I was not aware of this, and perhaps a lot of other people outside the region are unaware of it. The Environment Working Group of which I am a member is trying to bring forward the success stories so that others beyond your region are aware of your efforts. I am deeply impressed by your efforts. The May 2011 statement of Presidents Obama and Medvedev calls for deepening this cooperation, improving on what we have been doing and bringing that message to others beyond Alaska and this region. Just the idea of the Bering Land Bridge captures the imagination of people around the world. I have had the opportunity to travel around the region this week and learn about the archeological research underway. I am very grateful to be here and learn about this first hand.

**Pat Pourchot:** On behalf of Secretary of the Interior Salazar, welcome to visitors and the many people responsible for this conference, including the National Park Service and local people. Congress established the Bering Land Bridge National Preserve in 1980 to recognize commonalities between peoples on both sides of the Bering Strait. The U.S. Fish and Wildlife Service and the Bureau of Land Management also manage lands in the area, as do the State of Alaska and Native Corporations. We welcome the opportunity to look at the larger

## Panels

area. Secretary of State Clinton and Secretary Salazar recently went to Nuuk, Greenland, to attend the Arctic Council Ministerial meeting. This was the first time two U.S. Secretaries attended this meeting. Ecosystem-based management – with a special experts group – might be established. We should pursue what this might look like in the Arctic. Maybe Beringia fits into or is an example of what an ecosystem-based management concept looks like. What opportunities exist for the Beringia region?

**Pat Pourchot:** Look at other forums like the Arctic Council and its working groups that could help build cooperation in other forums.

**Dan Reifsnyder:** Because of so much cooperation and rich history, it's not about reinventing the wheel; it's about deepening and broadening cooperation. We need to highlight this cooperation outside the region. When I went to Kamchatka this summer and talked to Native peoples there, they were quite concerned about their culture and language. And they were concerned that modern life is pulling them away from their traditional lifestyles. If increased cooperation can help maintain traditional lifestyles, it would be good.

**Irina Ryabukhina:** One of the programs supported by Chukotka is the development of sled dog races. We would love to have our young people participate in your races. We have great and deep interest in the development of this sport (the Nadezhda Race through Chukotka villages). We would love to have your folks participate in this race and help in breeding sled dogs. We also have umiak boat races; we have preserved the tradition of making these boats. Come to the summer festival to see this – it is a great opportunity for tourism development. We need to use the Internet more to disseminate information about our programs; in some regions there is no Internet, so TV and print media will be the best way to share information.

**Olga Safonova:** I second the previous speaker's ideas. We are working on international cooperation and open dialogue; and we want to cooperate with you within our competencies.

**Mead Treadwell:** We need to solve very pressing problems that we have here – disappearing languages, co-management of resources, (increased) shipping in the Bering Strait, oil and gas and mining and maintaining the values we have here. Please forgive us if we also talk about the other proceedings that are happening in other forums -- eight Arctic nations under the Arctic Council will meet on emergency management. There is legislation in the U.S. to try to design the shipping region and share this with our partners in Russia to make sure we have safe, reliable shipping. We need safe tourism that is sustainable for both sides. Park agreements can play a major role in the shipping agreement. Oil spill response does not work unless communities know each other. The Shared Beringian Heritage Program is one way for communities to know each other and understand what our mutual capabilities are. Fishing relies on good science on both sides—we have an opportunity for more sustainable fisheries. On the topic of science, we can do much more for safe shipping and understanding the resources of this area. A major kink in this area is between Washington and Moscow on access for expeditions – we have had many problems in this area.

### What are the challenges or barriers to turning these opportunities into further cooperation?

**Mead Treadwell:** I first read about this (a possible international park) in an editorial piece from the National Center for Atmospheric Research in the early 1980s. I see my friend Jim Stimpfle here who helped. The State of Alaska has been cautious for a number of reasons. Things are somewhat challenged because when a project happens outside the park boundaries, people will draw a large border to say no mining because there will be an international park. Economic issues and opportunities must be addressed. Do we want to see a joint park or a sister park? The state's position will try to reflect the interests of the people who live here. Whatever bureaucratic moniker comes out of this, we want it to improve the commerce, trade and cultural exchange in the Bering Strait region.

## Panels

**Olga Safonova:** I agree with the lieutenant governor. Article 15 of the Russian Federation's Law on park administration limits any activity that might harm cultural artifacts in a park. There is differential zoning of park territory. A national park would be developed as a cluster of five different areas, with different zoning according to their historic, cultural and natural features. There must be preservation of landscapes and biodiversity, development of areas for recreation and tourism and consideration of the interests of local people. We have four functional zones: one for a full preserve – Zapovednik; another – Zakaznik – where visiting and environmental tourism is allowed; a third zone for recreation and tourism – a zone for active tourism; and, last, a subsistence zone where economic activities are allowed in addition to traditional activities.

**Irina Ryabukhina:** It is necessary to calculate the economic burden that the park presents. How much activity and how many tourists can we handle? This is very important to know. We also need better transportation networks. We have a deep gratitude to Bering Air for providing charter flights. We need secure transportation; otherwise, we cannot have tourism.

**Dan Reifsnnyder:** Sasha Gruzdev is Superintendent at Wrangel Island National Park – which is not far from here, but very far from Moscow. The point is that it is a long way from Moscow; and Alaska is long way away from Washington, D.C. Many folks come in and have no idea of what is happening on the ground. There are multiple jurisdictions (State of Alaska, Native corporations, and so on), and working through all of them can be complicated. But we also have positive things on the horizon. You are about to catch a wave: there is a huge interest in the Arctic; it has exploded in recent years. There are many opportunities; you are in a perfect position to take advantage of this interest. Vladavia Airlines is trying to open a new route between Petropavlovsk-Kamchatsky and Alaska. A visa agreement was signed in May, which eased up on visa challenges, and there is ongoing work on visas. We are very grateful for the annual congressional appropriation for the Beringia Program; it is an important positive on the relationship. There is new emphasis on the importance of deepening this relationship. There are concerns about subsistence that also exist on the Russian side. There is a lot of interest about mixed uses of park areas. The only

way to protect these areas is to have the support of the local people. People are concerned about loss of sovereignty. The U.S. and Russia would maintain things as they are; no one is proposing major changes.

**Pat Pourchot:** What happens when you draw a line on a map—I was involved in that back in the 1980s. With the Bering Land Bridge National Preserve, all lands there remained open for sport and subsistence hunting. I congratulate our Chukotka colleagues for their zoning plans for the Russian Beringia National Park.

**Sue Masica:** We will make every effort at outreach with folks with strong connections to and interests in Beringia. We will be as open and transparent as we can be, listen to your concerns and be as well informed as we can be. A poster board over here is about what might change (reference to poster in the conference room that laid out possible alternatives (see following page). If you have thoughts about possible changes, please comment; words are very important, we need to be thoughtful about this—if you have concerns, it would be wonderful to have your feedback.



## Panels

### Comparison of International Park Area Frameworks for Beringia

This table provides a comparison of the various types of frameworks available for deepening cooperation across the Bering Strait.

	<b>International Heritage Area</b>	<b>International Park Area</b>	<b>Sister Park</b>
Management	No Change	No Change	No Change
Subsistence	No Change	No Change	No Change
Existing Borders	No Change	No Change	No Change
Access	No Change	No Change	No Change
Is legislation needed	Yes, by U.S. Congress	Yes, by U.S. Congress	No
Is a Binding Agreement	Yes	Yes	No, non-binding
Considerations	Will Congress pass law?	Will Congress pass law?	Local support
Increased tourism possible	Yes	Yes	Yes
Local involvement	Yes	Yes	Yes
<b>Example:</b>	<b>Kenai Mountains-Turnagain Arm</b> National Heritage Area, Alaska <a href="http://www.kmtacorridor.org/">http://www.kmtacorridor.org/</a>	<b>Waterton-Glacier</b> (US-Canada) International Peace Park <a href="http://www.pc.gc.ca/pn-np/ab/waterton/natcul/inter.aspx">http://www.pc.gc.ca/pn-np/ab/waterton/natcul/inter.aspx</a>	<b>Grand Canyon</b> National Park with China's <b>Yuntaishan</b> Geopark <a href="http://www.nps.gov/oia/topics/sister.htm">http://www.nps.gov/oia/topics/sister.htm</a>
<b>Key features:</b>	Tourism promotion; heritage promotion; protection of marine resources; increased fundraising capacity; preserve historic sites	Cooperative migratory species monitoring; joint training sessions; mutual search & rescue agreements; joint research projects; joint newspaper; Superintendents Hike	Increased foreign tourism; technical assistance; staff exchanges; shared lessons learned in environmental education, science & heritage

### What Could a Beringia International Protected Area Do?

These are some of the potential elements that can be included in expanded cooperation:

- **Indigenous language learning and documentation**
- **Native observations of environmental change**
- **Documenting Siberian Yupik & Inupiat cultural heritage**
- **Education and interpretation programs for youth**
- **Sustainable ecotourism and local handicraft promotion**
- **Support exchanges across the Strait**
- \_\_\_\_\_
- **Natural resource inventory and monitoring**
- **Monitoring wildlife health**
- **Forum for advocacy on bigger issues**
- **Facilitate the reuniting of families**
- **Share experiences via digital media**
- **Sharing management expertise**
- \_\_\_\_\_

As the opinions of interested parties are shared about what form an international park area should take, NPS will need to formalize a proposal and engage in tribal consultation. To date, NPS has not expressed an opinion but favors establishment of a sister park relationship between a Russian park in Chukotka and one or more parks in Alaska.

Please share with us what your opinion is: \_\_\_\_\_

## Panels

### Panel 2: Native Observations of Environmental Change

#### MODERATOR

**Igor Krupnik**, Anthropologist, Curator of the Arctic and Northern Ecology Collections, Arctic Studies Center, National Museum of Natural History, Smithsonian Institution, Washington, D.C.

#### PANELISTS

- **Artur Apalu**, Observer, SIKU – Sea Ice Knowledge and Use Project, Yanrakynnot, Chukotka
- **Paul Apangalook**, Yupik subsistence hunter, Gambell (Sivuqaq), St. Lawrence Island, Alaska
- **Alexander Borovik**, Observer, SIKU – Sea Ice Knowledge and Use Project, New Chaplino, Chukotka
- **Victoria Golbtseva**, Senior Specialist, Laboratory of Multi Discipline Studies of Chukotka (Chukotka Center), Northeastern Institute of Multi Discipline Studies, Far Eastern Branch of the Russian Academy of Sciences, Anadyr, Chukotka
- **Bivers Gologergen**, Subsistence hunter/user, member of the Eskimo Walrus Commission, Nome, Alaska

Local residents in rural communities on both sides of the Bering Strait are reporting close or similar changes during recent past years, such as the thinning of winter sea ice, later freeze-up and earlier spring break-up, violent storms and increased coastal erosion, rapid and unpredictable shifts in wind and weather patterns and changes in animal and bird behaviors. Panel members speak to the changes they have observed.

**Igor Krupnik:** Pack ice has receded to its historical second lowest level ever and may set a record this winter. I have spent 35 years in the region, and we have an abundant resource of knowledge about climate change from indigenous knowledge and observation. The indigenous record of knowledge extends across many generations (“high resolution of Native observation”) with a very precise

observation of what is occurring. The National Park Service and its Shared Beringian Heritage Program supported one of the key projects of the International Polar Year, *Siku*, which means sea ice in the Eskimo language. Four out of five of our panelists were partners on this project. The Russian Beringia Park under the leadership of Natalya Kaluzhina and Igor Zagrebin also supported *Siku*. From the project, a book was produced, *Siku: Knowing Our Ice*.

Two additional projects I would like to mention are:

1. an EALAT project on reindeer (Note: EALAT, a Sami word, is a Reindeer Herders Vulnerability Network Study that examines reindeer pastoralism in the light of climate change) and
2. a Bering Sea Sub-Network project focused on indigenous observation of climate change (Note: The Bering Sea Sub-Network or BSSN, is a structured network of Bering Sea coastal communities in the Russian Federation and Alaska that provides the means for the systematic collection of information about the environment and the efficient management of data gathered from community-based environmental observations. It also lays a foundation for future community-based research).

#### What changes are most noticeable in your area and community?

**Artur Apalu:** I saw sea ice in December as a school kid in the 1970s, but now the sea is ice free in December. Spring ice washes away or melts. Walrus cannot haul out on sea ice as they used to be able to, simply because the ice is thinning.

**Victoria Golbtseva:** Our elder hunter, my mother and other elders helped me to track changes. Hunters are waiting for ice for a long time; the hunt starts when ice freezes, hunters cannot hunt small pinnipeds, so hunting harvest season starts very late in the year. In addition, we have many storms preventing us from successful harvest. Our houses are built not far from pebble beach bed. Strong winds and arctic storms come as close as our houses and destroy the coastline. We do not see old ice, only new, one-year ice. In early spring, ice

## Panels

melts before it washes into the ocean. Sometimes it happens in the middle of the winter; we have rains and very warm weather.

**Alexander Borovik:** I work near New Chaplino village. We see a lot of shrubs growing and glaciers melting—ice melts and glaciers melt. Ice starts freezing much later in the year. There are all kinds of consequences: later harvests, sea-fast ice later in the year.

**Bivers Gologergen:** I was born in Savoonga (St. Lawrence Island) and raised in Nome. I learned a lot from elders in Savoonga when I was growing up. There are more storms and rain in Nome; winter storms last longer here in Nome; ice comes earlier; it is really thin, not thick as we saw in the 1970s and '80s. Ice is breaking up in early January/February/March. We see “*ushpas*” – Murre – in March. Breakup is a lot sooner than expected.

**Paul Apangalook:** There have been dramatic changes in the last 15 years: floating icebergs, alcids used to stop in early October and November. By Thanksgiving there used to be pack ice in Gambell (St. Lawrence Island) closing in on the town. That stopped about 10 to 12 years ago. Pack ice ceased to exist until very late in December. Local slush ice forms in the bay and finally comes, but it is not real ice; it is local. It is a winter locally born, not a real one, not of the northern ice as it used to be.

### What months or seasons of the year are most different today?

**Artur Apalu:** In summer, we have a lot of brush growing around the village of New Chaplino. Winds in winter bring many storms, from the south, often breaking shore-fast ice; it reforms in different places.

**Victoria Golbtseva:** According to our observations of the marine ice, our fall is much longer, and our spring comes much earlier. Winter is now warmer. The weather is not stable. Summers can be very hot, which had never happened before. This past summer it was very cold; since we had ice near the shores in the village of Uelen, the hunters could not go hunting.

**Alexander Borovik:** Ice forms very late. New ice is dangerous to walk on so winter hunting season starts late. When we start hunting smaller pinnipeds in the spring, the ice deteriorates very fast. We used to drive on this ice with dogsleds until June 15, but now after early May that is not possible. Regarding walrus haulout, we have many shoreline slides, so fewer walruses there.

**Bivers Gologergen:** Walrus used to be right around Savoonga, but nowadays I do not see that. It is all thin, first-year ice. I see many weather changes in January – drizzle/rain – a warmer climate, not as cold as it used to be. This is very surprising for me. There are also more storms nowadays.

**Paul Apangalook:** Longer fall weather seems to be the norm over the past several years. We have been experiencing more storms in the fall. We have had shorter spring seasons instead of the usual spring weather, which was ideal for our hunting. Nowadays it has been just a few windows of opportunity to go out to do our spring harvest. It seems as if we are doing that—waiting for windows of opportunity, which used to last for days and weeks during normal spring season in the past, but now we're seeing frequent storms in the spring and thinner ice. The ice pack is replaced with newer ice, and that is frustrating for us because it doesn't develop in the way it used to. It has started raining in early June, and that is unusual to see rain in early spring. It is unnatural to see rain in springtime when we should be having good weather.

**Igor Krupnik:** From the Bering Strait to Canada, the periods of particular weather regimes are shorter than they used to be, and this is problematic to elders and others. They have now shortened to 3 to 5 days. Not only are there shorter weather patterns, but also the windows of opportunity for hunters are becoming shorter. Now they wait a day or two for these, creating double pressure on them.

### Is walrus hunting changing or other subsistence – later or earlier?

**Bivers Gologergen:** Walrus hunting here in Nome has changed; walrus start coming to Nome later than normal, seems to be farther and farther out. When I first moved here 7 years ago, we were hunting walrus 30 miles out. Now we

## Panels

go farther out every year. Last year we had to go to King Island to run into ice. And it wasn't thick ice; it is all sea-fast ice, and there's no game there. Walrus need thicker ice. The old calendar of the season has changed. Seals are coming in later than normal. We seem to go farther to hunt those around here too, in my experience. I do not see the real ice, the *siku*, unless I go to King Island, 90+ miles away. The weather for sure has affected all the hunters I know, keeping them home more.

**Artur Apalu:** A lot has been said about climate change. In our village, all people hesitate to predict the weather, since it is unpredictable. We skinned and butchered walrus on the ice in the past but not now; we have to take it back onshore. We must be very careful to leave the ice quickly because the weather can change very quickly.

**Paul Apangalook:** When whales are running, the ice is close to shore and near the village. Whaling happens in March, when the icepack is near, and we would do our whaling throughout April. Nowadays, it seems that with the taking of whales later in April, the ice will be gone literally overnight. There is really a need to mix our walrus harvest at the time when the ice is close to shore; otherwise, we're looking to go many miles over water. The price of fuel has gone up really high, so it is cost effective to try to do our walrus harvest when the ice is nearby. Also, we have a real need to do our harvest earlier in the season, in April. Sea ice has become thinner over time; it moves out of the area sooner. With the price of gas, we need to make some adjustments there. I can recall the ice pack moving out literally overnight. Unless we have good weather, it's a risky factor in our walrus hunting, requiring longer excursions over open water. The bottom line is that we need to harvest our walrus – it's our staple for the whole year – so we need to take long excursions over open water. This is just reality nowadays.

**Igor Krupnik:** The changing calendar and subsistence seasons are not only for training young hunters; there is a whole issue of hunting regulations imposed on subsistence hunters, based on hunting of 20-30 years ago. We know how difficult it is to make any change in subsistence hunting regulations. The former

seasons need to be changed, readjusted to climate and environmental change, and perhaps readjusted periodically, not once, but every 5 to 10 years. Seasons have changed and the calendar is different today.

**Victoria Golbtseva:** Weather changes a lot. Hunters spend a lot of time onshore waiting for weather to change. The hunters are risking their lives. Many currents change directions near the Bering Strait. Villages are susceptible to winds from many directions. The traditional calendar has to be amended every time—substantial work needs to be done so that our young hunters can use the experience of our elders. We must take into account climate change so that young hunters can hunt in the fall. Walrus harvest is the main source of protein in coastal villages. They cannot survive the winter without harvesting walrus. Fall is a very important time for hunters. Hunters go farther from their villages to other hunting camps on Cape Dezhnev to get enough for the winter. They harvest walrus and store it on Cape Dezhnev; then during winter, they take dogsleds to fetch the meat; they go back and forth.

**Alexander Borovik:** The hunters in Chaplino hunt from shore-fast ice, but its thinner; and it is close to the village. The old calendars do not work because weather changes very rapidly with southeastern winds. We would look on the mountain to see if there was blowing snow on the mountains, and we would have to leave.

### Is Traditional Ecological Knowledge (TEK) still useful and reliable – what works?

**Bivers Gologergen:** Marine life has changed. We have to go farther out, and it has really affected hunting. Thinner ice is more dangerous. We have more pan ice than normal. We always have to look out for the signs of weather breaking, coming early. We are getting storms a lot faster. Migration of birds has definitely changed; it has gotten earlier than in the past. Marine life is coming in earlier nowadays. Weather is a factor.

**Artur Apalu:** Marine mammal migrations in our area have not changed much. Some changes have occurred with bowhead whales; they come later in fewer

## Panels

numbers in mid-November and stay almost until the New Year. Marine currents are much faster. Fast ice washes away so fast it is impossible to catch up to it. We must travel much farther searching for walrus.

**Paul Apangalook:** Our traditional skills are reliable but nowadays because of frequent storms in our area, we need to rely on skills of other people. An educated weather forecast has not gone through their weather forecast library – let us try this today. Nowadays the educated weather forecast has improved, and we do need to rely on that; however, our TEK is reliable. Traditional knowledge is still important because when you have some kind of normalcy in the spring, we can read what the weather is going to be. There are some rules that require us to head home if there is a weather front coming in. Frequent storms in the spring make our TEK useless, and so we have to rely on weather forecasting abilities of the National Weather Service.

**Victoria Golbtseva:** Uelen elders have knowledge left to them by fathers and grandfathers; and, today, they pass this onto children and grandchildren, and each family keeps it in their own way. There is unique – but also common – knowledge by all marine hunters. Expert hunters tell young hunters how it used to be one way, but now it is another way. Experienced hunters do their hunting on drifting ice—traditional knowledge that we’ve written down and passed along, also knowledge about migration of marine mammals, when it’s allowed to hunt and when it’s not advisable to hunt. They need to keep it all in their heads, since there are times when hunters need to make decisions about how to save their lives. Knowledge of winds and marine currents is important, since if there is no wind, ice can pull away from the coasts. Marine hunters watch the coast to understand the direction of ice movement, so hunters need to be on guard all the time. Men like to hunt and harvest as much as they can, with gusto, but excitement at sea is not advisable. The team leader, an elder, sitting in the boat, watches carefully over the hunters and warns them. Hunters need to obey the leader and not argue with him.

**Alexander Borovik:** Songbirds from South America come to us nowadays. Regarding pinnipeds, there are not many changes, but signs that we rely upon

do not work. Used to be that it was possible to judge by the state of ice, but nowadays you cannot say anything.

**Igor Krupnik:** All have an Internet connection and look into the weather forecasts. On the Alaska side, all start their morning by checking on the National Weather Service forecasts. In many communities, there is language shift, switching from traditional languages to English or Russian. TEK is being translated into other languages—saying “pack ice” rather than “*siku*” or “multi-year ice.” TEK is a dynamic thing.

**Bivers Gologergen:** TEK in Nome—when hunting as a group, you always have information and are communicating the weather. Many hunters use GPS (geographic positioning system). In the fog, we are told not to go into pan ice since we could be trapped in the ice. But folks with GPS go anyway; they don’t know current, and some find themselves off track or lost. Do not rely on GPS; it is good to have, but rely on TEK. Look around, my brother told me, see the water, little bits of ripple in the water—that means the weather is coming. You still need to learn the current here in Nome. In the Sledge Island area, current is strong, but at King Island it is really strong. Ask guys how fast we’re moving because of the current.

### Have people noticed changes in animal behavior?

**Paul Apangalook:** This climate change is a natural event, and so nature has its own way of taking care of itself. Our animals are pretty well adapted; they take care of themselves. Migration of our game is such that there is a mixture of marine mammals in our area. I recall in the early ‘60s, whales were so diminished there was a period of five years when our village did not get some. Now, younger whales and numerous others are in early spring when the bowheads were all over the place near Gambell (St. Lawrence Island, Alaska). While we get excited about bowheads, we did not pay attention to them. We saw something unusual about sea lions and whales mixing. Nature has its own way of taking care of its own; that is just reality nowadays to see the timing of migration going out of sync. That is alarming, but nature does take care of its own. Our game is alive and well, but what we do not understand is climate change.

## Panels

**Victoria Golbtseva:** Marine mammal hunters harvest them and know them very well. But from observations of others, I can say that ducks started coming earlier to Uelen (Russia) — by the end of March, when it used to be end of May. They saw narwhal, which is not typical for those waters. At the end of the twentieth century, one hunter got a small shark in his net. There are now very many birds we had never seen before in Uelen village. Since we do not have sea ice, there are huge aggregations of walrus nowadays in organized coastal haulouts waiting for the ice. Their numbers are very high. Stampedes occur, and because of the high numbers of walrus, many animals are trampled. For hunters, it is important not only to hunt, but also to be equipped well; and our hunters need fur clothes. Without fur clothes a marine mammal hunter is not a hunter. This is a big problem for our village due to climate change; it is more and more difficult to harvest seals. This is why it is difficult to have exchanges now between coastal marine hunters and reindeer hunters.

**Bivers Gologergen:** Climate has really changed animal migration. Will it continue? It depends on the weather. Some people in Nome have never seen the different kinds of birds we are now seeing here.

**Igor Krupnik:** Animals we had not seen before now show up in Chukotka—like moose arriving and lynx now in Chukotka. Near the town of Enurmino, they have spotted sea otter—there's a word for it, but elders have no memory of seeing it. Maybe it is an episodic thing. Humming birds are coming to New Chaplino and Big Diomed Island. I do not know how to interpret this.

### Question and Answer Session

**Q. How is climate change affecting reindeer herders? Is it more difficult for reindeer to feed?**

**A.** Due to southern and northeastern winds last winter, we had a lot of ice on the ground. Lots of wild animals died; lots of hares and ducks died; the caribou also



suffered. Animals were starving. The only animals that did well were predators scavenging on dead animals. There were constant temperature changes in the fall, rainfall in December; reindeer had headaches from rain falling on their heads, so reindeer had to go north to avoid the rain. We had to take the herds north.

**Q. Are changes you have observed episodic, or are they more constant and continuous?**

**A.** Climate change already has occurred, but it has also been progressive. There is a shorter time to hunt marine mammals because of weather—limited time to go farther out. Ice conditions, when we are getting walrus or ugruk (bearded seal), are very dangerous. We have meteorological weather information going back almost a century, but have not collected that long for TEK. Paul from Gambell information on weather and climate change for the past 7 years: that is the best we have. It is a work in progress.

### Comments from the audience:

**Lyudmila Ainana:** I would like to express my gratitude to my relatives in Savoonga and Gambell for sharing their knowledge of traditional hunting. And to Dr. Krupnik – we have a Yupik name for him, since he has worked with our villages – he is now in the U.S., but he never forgets us. I am so proud that you are listening to our villages talk and share their knowledge, and I hope the Beringia Days continue to link us. I hope that visas do not keep us from meeting. We used to go in boats to visit friends and relatives, and we could share our knowledge of marine mammal hunting. How different this knowledge is now, and climate is changing; but it's important that you are all discussing this.

## Panels

### Panel 3: Marine Mammal Research and Strategies for International Collaboration in Beringia

#### MODERATOR

**Martin Robards**, Director, Arctic Beringia Program, Wildlife Conservation Society, Fairbanks, Alaska

#### PANELISTS

- **Willie Goodwin**, Subsistence Coordinator and Community Liaison, Western Arctic National Parklands, National Park Service, Kotzebue, Alaska
- **Charlie Johnson**, Executive Director, Alaska Nanuq Commission, Nome, Alaska
- **Vladilen Kavry**, Chukchi Subsistence Hunter, Umky Patrol (Polar Bear Patrol), Vankarem, Chukotka
- **Chanda Meek**, Assistant Professor, Political Science, University of Alaska Fairbanks
- **Lily Ray**, Social Scientist, Kawerak, Inc., Nome, Alaska
- **Cheryl Rosa**, Deputy Director, Arctic Research Commission, Anchorage, Alaska
- **Margaret Williams**, Managing Director, U.S. Arctic Field Program, World Wildlife Fund, Anchorage, Alaska
- **Eduard Zdor**, Executive Secretary, Association of Traditional Marine Mammal Hunters of Chukotka, Anadyr, Chukotka

Unprecedented climatic warming in recent years has led to a rapid deterioration of Arctic sea ice. This is having profound impacts on the marine mammal populations shared between Russia's Chukotka Peninsula and Alaska in the United States. Current ice conditions and forecasts for the rest of 2011 confirm that the habitat of ice-dependent species will continue to deteriorate in this and coming years. While Arctic climate change will reduce habitat for ice-associated marine mammals, it will, in turn, facilitate unprecedented human development and transportation activities. In order to mitigate the repercussions of these changes to both marine mammals and the local Native peoples on both sides of Bering Strait, who have been culturally reliant on walrus for millennia, coopera-

tion in the research and management of marine mammals is essential. This panel highlights some of the current work in the region and promising areas for future collaboration.

**Martin Robards:** I never thought in my life that I would look at the top of the globe and not see any white, any ice, but all of us in our lifetimes will see that. It turns out that the National Park Service has funded a sizable amount of marine mammal research.

**Lily Ray:** Hunters are concerned about increases in commercial shipping in the region, pollution – possibly discharged from ships – that could stress fish and marine mammal populations, and damage the food chain. Another concern is regulations without sufficient local input. One issue now is that walrus and two species of seals are being considered for possible endangered species status. There is fear that traditional lifestyles are endangered by policies made without sufficient local input. There is fear that young hunters do not know how to stay safe while hunting marine mammals. Gear, care for catch and avoiding loss of catch are other concerns. Research recommendations include disturbance, pollution, food safety, radiation, community/policy interface and local management.

**Willie Goodwin:** I was asked to join the panel in response to interest in reporting on research in Kotzebue Sound. A number of us are concerned locally with continued exploration in the Chukchi Sea and impact on sea mammals in the area. A Fish and Wildlife Service Tribal Wildlife Grant to tag seals was acquired – 26 were tagged over a number of years in the mid-2000s. Shell Oil provided funding for further tagging – 29 more ring seals were tagged between 2007 and 2008. In 2009, 12 ringed seals and 11 young bearded seals were tagged. All of it was done in the fall season. We did not want to interfere with local folks who were harvesting them for food. In all, from 2007 through 2009, 41 ringed seals and 36 young bearded seals were tagged. The research from this tagging effort can be viewed at <http://www.kotzebueira.org>; a number of seals end up in Russia, it turns out.

## Panels

We net the seals to catch them for tagging. While tagging the young bearded seals, we were approached to see if we could tag some adult bearded seals, which had never been done before in Alaska. In 2009, we sat down with marine scientists and then were able to catch and tag three male adult bearded seals. Two were from between Point Lay and Wainwright, and another was from in front of Prudhoe Bay. In 2010, we were unable to catch any adult bearded seals; but this past spring/summer, we were able to get three more: two females and one male. One headed back down through the Bering Strait, and we are tracking them. Now we can monitor their movements and say, with the little data we have, these are some of the migration patterns these seals use, requiring some mitigation as they migrate through the Bering Strait. Since 1988 when the Alaska Beluga Whale Commission began, we tagged some seals and monitor their movements. Fortunately, we got three big males; they went under the pack ice and turned up near Barrow. We need more research, but ask our Russian counterparts that if they shoot one of our tagged animals, we would like to get the radio back so we can retrieve the data in the tag. One was shot some years ago in Russia, and the Russian border guards accused us of spying, using seals.

**Charlie Johnson:** My most recent work has been on polar bears. Some of the most important work that we have done has been with the support and funding from the Shared Beringian Heritage Program. We have published two reports now 10 years old. In them, we had gone out and asked hunters about polar bear movements, denning, how they feed and what habitat they use. It has been a critical development, because as we work, we want to make sure that any regulations developed are done with information from the hunters and the support of the villages. Movement of the seals, as Willie mentioned, had not been documented until recently. We are doing the same thing with polar bears. The most important thing we are doing is the conservation of the various species. Until we do that, it doesn't matter what regulations there are if there are no resources. We are working to document again—and for comparison—what the polar bears are doing. We have another proposal to revisit, in both Chukotka and Alaska, the habitat use of polar bears. The treaty with Russia on the conservation of polar bears in the Bering and Chukchi seas is the most important thing we have done recently. This joint Polar Bear Commission has

four members: the U.S. Fish and Wildlife Service, Alaska Nanuuq Commission, Government of Russia and Native Chukotkans). Its method of operation is unique; for the first time the governments have agreed that any harvest limits must be agreed upon unanimously. It means we have veto power, which we never have had before. The Russian Ambassador who signed it said that it is the most democratic document that Russian has ever agreed to.

I have only good things to say about the Shared Beringian Heritage Program and what it has been doing for Native people. I also want to recognize my partner who just passed away, Caleb Pungowiyi. In May 1978, in Gambell, Caleb Pungowiyi and I met with Native Saint Lawrence Islanders, and we put together the Alaska Eskimo Walrus Commission. It was the work, a large part of two people no longer with us – Caleb and Mathew Iya – and I want to give thanks to them.

**Cheryl Rosa:** I am a wildlife veterinarian from the North Slope Borough on loan to the Arctic Research Commission. I took part in a workshop in D.C. last year at the National Academy of Sciences. Sixty to seventy per cent of the arctic land mass is in Russia; the majority of river discharge comes from rivers in Russia. Without having Russia engaged in research in the Arctic, we will not have good results. 'Stinky whales' — back in 2008, we had a project spurred on by concerns of the International Whaling Commission, related to a bad smell and taste in gray whales and other benthic animals – walrus, sea birds, some fish and some seals – that had been reported. The Shared Beringian Heritage Program funded a project. Working through the Eskimo Walrus Commission, we were able to get samples from walrus. Many of these animals moving into northern areas have been bringing disease with them.

**Vladilen Kavry:** I am from the village of Vankarem on the Chukchi Sea. We have been working with the World Wildlife Fund-U.S. for the past five years, with funding from them. You have heard a lot about the reduction of Arctic ice, so I will not speak about this. Impacts on walrus and polar bears have been very negative. In these images of my Native village, the distance is less than one kilometer (to the walrus haulout), but it has over 35,000 walrus. In 1996, we

## Panels

saw the first walrus haulout here; previously there had been no haulouts in the area. The 2007 walrus haulout was within a kilometer of the nearby river, the only one in the world so close to a human village. Many walrus died because of the great numbers on the haulout. Ninety percent of the deaths were from stress and trampling during a stampede onshore. Walrus carcasses attract polar bears, so we have many polar bears coming to the village; many come to the trash areas of the village. The Umky Patrol organized after a local village girl was attacked and killed by a polar bear that had come to the village. Last August, a bear killed another man; we had to shoot three bears that we found on the dead body, unfortunately. We created the patrols not only to protect the people, but also to protect the bears and walrus. We provide hazing for polar bears, chasing them away from the villages. We also do a lot of education and knowledge dissemination in the childcare center, for example, on how to behave if they spot a bear. We went to a number of villages, holding seminars and workshops on what we do, the experience that we have accumulated. We are hoping to create more patrols like ours. The Umky Patrol also collects and provides observations on polar bear migrations; we observe their dens, collect walrus carcasses and remove them from the village. We create feeding spots for polar bears, which is a very efficient method of keeping them away from villages. In 2006, we had almost 200 polar bears at the feeding spot. In addition, to protect the polar bears, we created 'calm zones' to protect them from ships, planes and helicopters that come to the village. We ask that flights follow along special routes so they do not disturb walrus haulouts. We explain to Native local people what they can and cannot do in certain areas. We do not prohibit people from viewing the haulouts or dens. For 20 years, we have wanted to get the right to harvest polar bears. Our ancestors used to harvest them. A moratorium was instituted without consulting us. It is very important to preserve our traditions and culture. We preserve our traditional knowledge and share it at the gatherings of the Bilateral Polar Bear Commission meetings. We use traditional spears at the walrus haulout; we do not allow the use of firearms, so as not to disturb the walrus on haulouts.

**Margaret Williams:** The Arctic is one of our global priorities; we have offices in all northern countries except for Iceland. Umky is the Chukchi word for polar bear. We are excited about this — it is a local measure to tackle these problems. We brought Fish and Wildlife Services' Craig Perham to share his experience dealing with human-bear conflict on the Alaska North Slope at a meeting organized by the Umky Patrol in Russia. It was a learning opportunity for Craig. We worked with the Fish and Wildlife Service to bring Vladilen (Kavry) to Barrow, Point Hope and Wainwright to go to these villages and talk about the Umky Patrol. Vladilen expressed the hope that walrus would haul out on the shores near his village and then the following year the walrus did haul out on their beaches.

There are challenges and opportunities. The Umky Patrol is a great example of community efforts to protect species affected by climate change. Other changes have been mentioned. Shipping presents both potential problems and opportunities. The World Wildlife Fund did a study on shipping traffic during the past several years, using satellites tracking. From 2009 to 2010, ships transiting the Bering Strait almost doubled. There is potential for environmental risk. The Deepwater Horizon oil spill in the Gulf of Mexico can serve as a caution about what can happen in the Bering/Chukchi Sea region. I think the Beringia Program can serve to bring people together to discuss these challenges and opportunities.

**Eduard Zdor:** ChAZTO – the Association of Traditional Marine Mammal Hunters of Chukotka – we do some research projects. This is an overall goal of our organization. Science is a good way to determine what is going on with marine mammals. We do not have enough studies of seals. This year we had several projects; one was coastal observations of marine mammals, conducted in four villages: Uelen, Neshkan and two others. This year we shared our observations of coastal haulouts of walrus. We gathered biopsy samples from bowhead whales in 2005-2006 and could prove to the International Whaling Commission that hunters from Alaska and Chukotka were using the same population of bowhead

## Panels

whales. This was important because opponents of whaling had been saying we have been using two different populations. Since 1956, harvest of polar bears has been prohibited, but for past 20 years, we have worked hard to try to harvest them. We have managed to document the knowledge of denning areas of polar bears and their habitats. The next logical stage of this project was to explore the spiritual aspects of polar bear hunting for Native peoples; the inter-relations between marine mammals and people are important. By documenting all of this, we can preserve ourselves as an ethnic nation; we can preserve our way of live, language and traditions. None of this work is done out of curiosity; it is done for the people who live in coastal communities. We conduct two types of village meetings; we invite scientists to tell us what is going on in coastal areas of Chukotka – why marine mammals migrate from one area to another, and so on. Now they (whales) are moving, not only to Wrangel Island, but also from satellite monitoring, we can see that they are going as far north as the North Pole. What prevents them is depth; they cannot feed in deep seas, but only in seas less than 180 meters.

**Chandra Meek:** I am a research professor at the University of Alaska Fairbanks. Thanks to Charlie Johnson for being my teacher. My research focuses on how international policy is made and translated to particular places where people. I conducted research in the upper Chukchi and Beaufort seas, Wainwright and Barrow. I studied how people organize themselves and hosted a recent workshop on how Alaska makes decisions about its oceans in the future. Someone at the workshop said, “Every society creates its own institute that makes sense for them in its particular place.” This points out the promise of community-based conservation and the challenge at the national, international and local levels simultaneously. I am trying to get to know the Polar Bear Commission. I am interested in how people do things — both in the past and currently. Research recommendations in the Bering Strait region include learn how different institutions positively affect people and places; help to remember prior practices; innovate at the local level; and govern for resilience of Beringia, to govern for recovery of communities, animals, languages and practices.

### Question and Answer Session

#### Q. What are your suggestions for how communities can work together better?

**Charlie Johnson:** A big problem is communication — how Russian and the U.S. differ. Often visas I send do not go to the people that I invited. Communication between communities or even between individuals is not as big a problem, but the two countries still have some enmity on this issue. Much of the bureaucracy is still in place in Russia – this is the problem. A governor closed airports on us to prevent us from going places. Communication across the board is our biggest problem.

**Willie Goodwin:** One thing I found is that the learned people—Ph.D.s and master’s degree folks—do not know how to catch these animals; they need to go to the village people. We also need to get continued funding to support the research we do. How can we get the gas to go get these animals without funding?

**Eduard Zdor:** We do have bureaucratic challenges on the Russian side; they interfere with our American colleagues’ interaction with our villages. There has not been much progress in our bureaucratic process; it is still very difficult to get access to Chukotka; it is hard to get a visa. I am trying to do something to improve our relations. Perhaps we can use the format of this conference and others to tell our government we need to remove the impediments to research and development and cooperation, which is only possible when we have good communication.

**Chandra Meek:** Getting to know each other will help us work together better.

**Margaret Williams:** It is helpful to look at what has worked and been expanded in the last ten years — old methods that the North Slope Borough has pioneered about tracking whales, for example. The World Wildlife Fund has worked closely with the Pribilof Islands to develop their own programs. Agencies have helped communities to develop their own programs. This is not happening as much in Russia.

## Panels

**Yuriy Gerasin:** This is not a question, but I want to respond to concerns of people. The issue with receiving visas is being resolved. The agreement between our countries should be ready by the end of this year for 3-year visas and even for tourists and those without invitation. Let's try to counteract international bureaucracy, not just Russian bureaucracy. Border guards did have a lot of mistrust for a long time – in the relations between our countries; this needs to be resolved, yes. I hope I have been able to answer some of your questions.

**Irina Ryabukhina:** I am responsible for tourists entering our area and would like to clarify how to come to Chukotka on a visa-free basis. All those with relatives in Russia need to have a special insert in their passports. On July 25, we issued inserts for seven children who visited Chukotka last summer. Currently, I have given to my colleagues the request from the Russian side for the format of this (non-Russian) insert to make it identical to the one issued on the Russian side. I have met with the vice governor, and he had heard that the invitations get lost, but you need to give it to the person you have invited personally; the governor is not the post office. Please send it to them personally through the mail. An official site has all the rules that govern the visa-free program.

Three years ago, we signed an agreement with the Russia Customs Service to provide all the necessary documents, halving the time it takes from 60 to 30 days. The special pass to cross the Russian border now takes only 10 days to formalize. I believe any concerns expressed here are a public relations issue.

**John Waghiyi:** I want to commend the National Park Service for this gathering where we can have a family reunion. I am very jealous of the seals because they have no boundaries, and they can move between Alaska and Chukotka.

