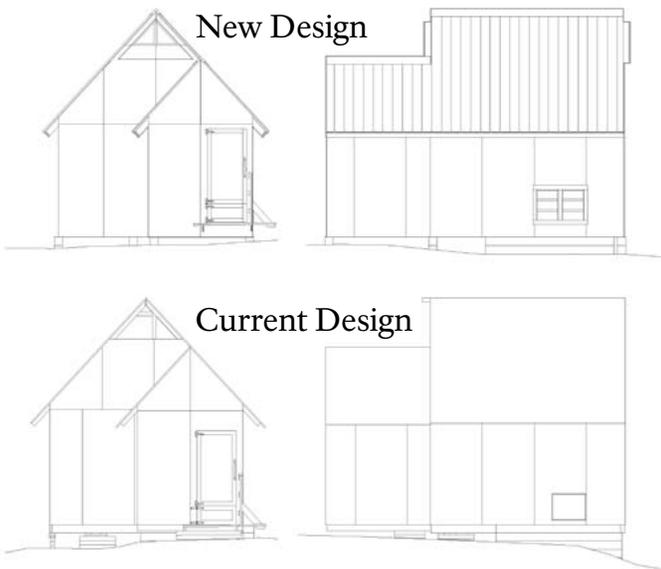




2011-2012 Field Project Summary



Serpentine Hot Springs Bathhouse Remodel/Rebuild Project

After many years of writing funding proposals, Bering Land Bridge has succeeded in getting funding to remodel/rebuild the Serpentine Hot Springs Bathhouse beginning in March or April and ending in July, 2012. The bathhouse design remains the same as the current bathhouse and the redwood bathtub will remain. The park will use treated lumber and other waterproof/resistant materials.

Here is the project schedule and major details:

- The park will do a consultation meeting with the village of Shishmaref at their Annual Tribal Meeting but set up another time early February to do full consultation.
- We will work on local hiring maintenance workers/laborers (2 to 4) from Shishmaref to: haul supplies via snowmobile from Shishmaref to the hot springs during winter, reconstruct the bathhouse this summer, as well maintain the other structures as needed throughout the winter.

- Re-construction will start after the 4th of July holiday. It is expected to take 2 or more weeks.
- One change is the need for “guide wires” to hold the building down during high winds.

Human Response to Climate Change at Cape Espenberg

- 2011 was the last year of this project. The project conducted archaeological excavations in the vicinity of Cape Espenberg last summer (mid-June through mid-August, 2011). This was a three-year project (2009 – 2011) designed to develop a detailed history of settlement at Cape Espenberg from AD 1000 to 1800 in the context of local and regional climate record.
- Last summer a crew of roughly 20 people was headed by Drs. John Hoffecker and Owen Mason from the Institute of Arctic and Alpine Research at the University of Colorado-Boulder. Three house features were excavated on three ancient beach ridges near the tip of the cape, and subsurface cores were extracted for the analysis of past climate and environment.
- The crew staged out of Shishmaref and Kotzebue. Personnel, materials, and supplies were brought in by 206 aircraft to the beach at Cape Espenberg.
- Mr. Mason is planning on attending the 2012 Kawerak Regional Conference.
- Below is an article about one of the artifacts that was found during the work.

Bronze Artifact

A prehistoric bronze artifact resembling a belt buckle was found in a 1,000 year old house pit during the “Human Response to Climate Change Project.” This was the first prehistoric casted bronze artifact ever found in Alaska. The artifact consists of a rectangular bar connected to an apparently broken circular ring. It is about

two inches by one inch and is less than one inch thick. Both sections of the artifact are beveled on one side and concave on the other, leading archeologists to believe that it was manufactured in a mold. A small piece of leather found wrapped around the artifact yielded a radiocarbon date of about A.D. 600. This does not necessarily indicate the age of the artifact because the leather could have been replaced over time.

Since bronze metallurgy is unknown from Alaska, the artifact was likely produced in East Asia and reflects long-distance trade from production centers in Korea, China, Manchuria or southern Siberia, according to Dr. Mason. It conceivably could have been traded from southern Siberia, where people began casting bronze several thousand years ago. The artifact could have come to Cape Espenberg during a migration from Siberia about 1,500 years ago.

Early Humans on the Bering Land Bridge

In July-August 2011, the Texas A&M University Center for Early Man team lead by Dr. Ted Goebel returned to Serpentine Hot Springs for a third and final field season to finish the excavation of the fluted-point occupation there.

Fluted points are the diagnostic artifact of the earliest well-documented and widespread Paleoindian culture in temperate North America (Clovis). Even though these artifacts have been found in Alaska, they have always occurred in surface or near-surface settings that cannot be dated. The group's research at Serpentine has resulted in the discovery of fluted points in direct association with dated fire-hearth features in a sealed and stratified context. Although these features have been dated to about 12,200-12,000 calendar years ago, the team returned to the site during the summer 2011

to complete the excavation of a second feature found in 2010 and to expand excavation in an area where a dense concentration of wood charcoal, biface tools, stone flakes, and bones were also encountered in 2010.

Comparisons of Population Dynamics and Ecology of Muskox in and adjacent to Bering Land Bridge National Preserve and Cape Krusenstern National Monument

- Field research for this project began in 2009 and will end in 2012. This project compares and contrasts muskox populations, calf births, adult female survival, sex/age structure, health and growth information between muskoxen of the northern Seward Peninsula and Cape Thompson populations. Layne Adams of the USGS, Joel Berger of the Wildlife Conservation Society, and NPS staff biologists Marci Johnson, Brad Shults, and Jim Lawler are conducting this project.
- The studies on the northern Seward Peninsula will focus on areas east of Shishmaref including the Serpentine, Goodhope, and Cripple River drainages.
- Muskox were radio collared, fecal samples are being analyzed, and populations are being mapped.
- There are up to 30 radio-collared adult females



Archeologists excavating at Serpentine Hot Springs

within the preserve, ranging from Cape Espenberg to Ear Mountain.

- The project will be capturing additional animals in late March (after the harvest season closes). In early April, Joel Berger will be returning to the area by snow mobile to collect fecal samples and photographs for estimating body mass. Layne Adams would appreciate receiving jaws from harvested muskoxen, particularly with the front incisors intact.
- A final report, consisting of up to three manuscripts for publication in scientific journals, will be provided by March, 2013.

Frozen Muskox at Cape Espenberg

52 muskox carcasses were found out in the middle of a shallow lagoon at Cape Espenberg in February 2011. In late February, a substantial winter storm in the region with strong south winds pushed seawater into the Chukchi Sea and Kotzebue Sound well beyond the normal tidal range. Normally, the region has a minimal tide range of about 0.3 m; an average high tide would therefore be about 0.15 m above mean sea level. During this storm surge, the water level peaked at 2.1 m above mean sea level, the highest water level recorded at a nearby gaging station since it was put in service in September 2003. As a result of the storm, seawater was forced up under the ice until the pressure was sufficient for water to come up through the ice, crack the ice, and

move it around. Once the water ruptured the ice, things probably happened rather quickly and within a couple hours it would have gone from a platform of solid ice to a mixture of water, snow, and broken ice that would be very difficult to move through. It appears that the muskox were simply in the wrong place at the wrong time when the water ruptured through the ice and they were unable to make it to dry land that was above the storm surge influence. Biologists suspect they all drowned in the chaos that ensued.

Climate Stations Installed

Climate is considered to be the most important broad-scale factor influencing ecosystems. Because global climate models indicate that climate change and variability will be greatest at high latitudes, climate monitoring will be critical to understanding the changing conditions of park ecosystems.

The NPS is planning a set of 18 grazing exclosures in BELA. The exclosures are designed to answer the questions:

1. What type and condition of tundra vegetation would occur in the absence of grazing in a variety of ecotypes?
2. How long does it take for a heavily grazed area to recover the abundance and diversity of lichens comparable to an ungrazed area?



Between 1999 and 2005, NPS conducted range studies in BELA culminating in a set of 78 long-term lichen monitoring plots. BELA's plots showed large differences in lichen biomass with sites outside BELA known to be heavily grazed. Unfortunately, the plots with known heavy grazing are in a maritime climate south of the Bendeleben and/or Kigluik Mountains, unlike those inside of BELA.

The planned exclosures will assist NPS in understanding

the changes in our long-term winter range monitoring plots by establishing a known endpoint on the grazing spectrum. Exclosures will be co-located with the existing monitoring plot network. Each 30 x 30 ft exclosure will contain two vegetation plots inside and two immediately adjacent. Where possible, the plots outside the exclosure will be inside of the larger 1 acre lichen monitoring plot. The exclosure plots will be very quantitatively rigorous point count plots designed to detect even subtle differences between grazed and ungrazed conditions. Exclosures will be placed in a broad spectrum of ecological types from alpine to lowland in order to characterize the differences in grazing effects and recovery time in different places on the landscape. Scientific literature is sparse on long term recovery of lichens following heavy grazing, and it generally applies only to lowland, mixed lichen ecotypes. NPS's array of exclosures will compare grazed to ungrazed plant communities along the full continuum of BELA's ecological zones. NPS plans to maintain these exclosures for a minimum of 30 years, and will be conducting an Environmental Assessment for review in February 2012.

Serpentine Hot Springs Alternative Transportation Study Complete

The park, with help from the Alaska Regional Office, applied for Federal Highways Administration planning funding in 2010 and received \$90,000 to plan and conduct a Serpentine Hot Springs Alternative Transportation Study. URS Corporation from Anchorage conducted the study with park staff. The plan was completed March 31, 2011. The contractor and park staff:

- Collected baseline transportation data, current and potential visitation, and identified potential modes of accessing the hot springs (using comments from public meetings)
- Conducted public meetings in Shishmaref, Wales, Deering, Brevig, Kotzebue, Nome, and a teleconference meeting for Buckland.
- Compiled a cost analysis and discussed local and visitor experience.
- Did an impact analysis for each of the potential modes of access.

For a copy of this study please contact the park.

Serpentine Hot Spring Site Management Plan Underway

The Serpentine Hot Springs Site Management Plan project scoping with Nome park staff has begun. A series of public meetings will be done in Shishmaref, Wales, Deering, Nome, and Kotzebue beginning in the winter of 2012. Based on community comments from the Serpentine Hot Springs Transportation Study, a range of alternatives was created and public meetings will be scheduled to review these alternatives and take public comments. The site management plan is expected to take 3 years to complete. This project will provide needed direction for managing the Serpentine area. The plan will identify desired future conditions and develop management indicators and standards to protect park resources and provide opportunities for high quality use and experiences by local community residents and visitors. The plan will assess the current facilities at Serpentine and the means/methods used to access the site.

Geothermal Investigations at Serpentine Hot Springs

Additional hydrological testing was conducted at Serpentine and Arctic Hot Springs in 2011 as part of the 'Geothermal Investigations' project. The overarching project goals are to characterize the hydrology, geochemistry, water quality, and microbiology of Serpentine area water resources. This year's goals were to obtain more information on discharge levels and patterns, water quality and helium isotopes (to investigate whether a hidden magma source is present). The NPS continues to collaborate with researchers from USGS and Montana State University. A final draft of overall findings is prepared and will be ready for peer review shortly. Once reviewed, results will be shared with public.

Cultural Resources Overview and Assessment for Serpentine Hot Springs

Kim Fleming of the University of Alaska Fairbanks conducted research and synthesized data collected by herself and former project investigator (PI) Richard O. Stern to complete a document summarizing the history of human use at Serpentine Hot Springs. This overview includes archeological, historical, and ethnographic data to assist park management in making informed decisions regarding development and planning efforts.

Kividlo Cabin (Cowpack Shelter Cabin) EA and Construction at Cowpack Lagoon

This project is on hold due to lack of funding to complete both the Environmental Assessment and construction. This year, park staff applied for Transportation dollars to complete an Environmental Assessment of the Cowpack site, construct the replacement shelter cabin, and install tri-pod trail stakes from Shishmaref to the new cabin to Cape Espensberg. In 2009, BELA shipped 2 conex vans of construction materials for the rebuilding of the cabin and is leasing property next to the airport. In 2009, BELA had two meetings with the Native Village of Shishmaref, Shishmaref Native Corp, and the Shishmaref Emergency Services about the new location of the cabin at the

Cowpack Lagoon, building logistics and rebuilding of the cabin. An archaeological assessment was completed in July of 2009. The park applied for Transportation funding in 2012.

Singyuk Burials

In August 2010, Shishmaref resident Richard Kuzuguk observed a series of exposed graves and fragments of human remains at or near surface in a stable vegetated dune area on the mainland at the northeast extent of Shishmaref Inlet, on NPS lands. Concern was expressed about the vulnerability of these remains and graves and the NPS noted that previous archeological survey of coastal areas had not included that particular locality.

These burials may be related to the abandoned village of Singyuk [Singeak, Sifik] which is located roughly 1100 meters to the southwest or perhaps the as yet unlocated nineteenth century village site of Ikpizaaq which is reported to lie along the coast southwest of Ullagsaun.

Morris Kiyutelluk described Ikpizaaq to Bureau of Indian Affairs researchers as follows, in 1976: Ikipzaaq, "place where you make clear a space for games" is located on the coast southwest of "Ullagsaun". It was a village and a fall gathering place for inter-village festivities and competitions for people from the coast from Cape Espenberg to Shishmaref. Presently covered with sand, the village and the Sinik cemetery which is about a mile west of the village have been left undisturbed. The cemetery, with some above-ground graves, includes burials from a drowning tragedy at Ikpizaaq as well as ancestors of people now living in Shishmaref. (M Kiyutelluk in Koutsky, 1981:I:17)

Gideon Barr described Ikpizaaq to a Bureau of Indian Affairs researcher in 1988: Today's time, it looks as if there was no one [that] has been living there. All the old houses are covered with a sandstorm from the beach-side during the summer... You can't even see anything in the line of old igloos in that area. But they are still under there... (G Barr in Fair, 1997:474)



NPS personnel taking samples of shipwreck

Documentation of Historic Shipwreck

In August 2010, Shishmaref resident Richard Kuzuguk reported finding a fragment of old ship wreckage along the coastal beaches of Bering Land Bridge National Preserve. The shipwreck is located on lands managed by the State of Alaska, as it rests below the mean high water mark. Thus far, it is thought to be a portion of the Silverwave, a schooner that sunk while trapped within the ice in 1924. We have been unable to get any other reports about the shipwreck.

Big Game Guiding Environmental Assessment (EA)

The Preserve received funding to conduct an environmental assessment of big game guiding and has entered into a Project Agreement with the Alaska Regional Office to begin work on an EA. Over the years, management at the Preserve has been asked about issuing big game guiding contracts in the Preserve. The Preserve has not had an active big game guiding contract since 1989. Over the years it has held meetings in the park's neighboring villages to discuss big game guiding. In the early to mid 1990's many villages opposed the park issuing big game guiding contracts but, with the increases in the muskox population and

and increased sightings of brown bear in 22E, village residents may be changing their view toward big game guiding. Meetings were held in Shishmaref last April and in Wales last fall and a teleconference was held with Deering. Based on these consultations the park has completed 2 chapters of the EA and has various alternatives to discuss with communities. More meetings will be scheduled this spring.

Shared Beringian Heritage Program and International Protected Area Designation

The Shared Beringian Heritage Program recognizes and celebrates the exchange of natural resources and cultural heritage shared by Russia and the United States on both sides of the Bering Strait. The program seeks local resident and international participation in the preservation and understanding of natural and cultural resources and protected lands as well as working to sustain the cultural vitality of Native peoples in the region.

The goals of the Program are to:

- Foster a climate of mutual understanding and cooperation between the United States and Russia, and the indigenous people of the Beringian region in environmental protection, conservation of flora and fauna, and historic preservation and

interpretation;

- Support the subsistence opportunities within Beringia and recognition of unique and traditional activities by indigenous people of the region.
- Promote the study, interpretation, and enjoyment of the natural and cultural resources of international significance, including the impacts of climate change upon these resources.
- Support cultural exchange between indigenous people on both sides of the Bering Strait.

The National Park Service continues working on a communications plan to seek comment, suggestions, and direction about U.S. State Department's efforts to work on a shared protection area between some of the Russian Parks and the existing NPS units of Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Noatak National Preserve, and Kobuk National Park. The NPS wants your input on what a shared protection area should be and what it will mean to the people of our region. Bering Land Bridge staff has conducted meetings in Nome, Shishmaref, Deering, Wales, Gambell, and Savoonga. Meetings will continue.

Three New Beringia Projects Funded in 2012

The Beringia Panel met from October 9-10 this year at the National Park Service's regional headquarters in Anchorage to review and agree on their 2012 funding allotments. Following the 2012 "Call for Proposals" and an internal review by experts at the National Park Service, 19 proposals were considered by the Panel at their meeting. The Beringia Panel is made up of 5 representatives: Guy Martin representing Bering Straits Native Corporation, Leland Barger representing NANA Regional Corporation, Deano Olemaun representing Arctic Slope Regional Corporation, Ken Adkisson from the National Park Service's Bering Land Bridge National Preserve, and Bob Winfree from the National Park Service's Alaska Regional Office. The Panel meets annually to discuss the goals and accomplishments of the Shared Beringian Heritage Program, as well as to decide which projects to fund each year. At their meeting this year, the Panel decided to fund the this year, the Panel decided to fund the following

projects for the following amounts in fiscal year 2012:

1. Barrow Arctic Science Consortium — The Current Nutritional and Cultural Needs of the Aboriginal Population of Chukotka to Harvest Gray and Bowhead Whales: \$39,751.
2. Alaska Nanuuq Commission — Collection of Traditional Ecological Knowledge Regarding Polar Bear Habitat Use in Chukotka: \$47,000.
3. University of Montana — Trans-Beringia Musk-Oxen: \$39,010.

The evaluation was based on the goals of the Shared Beringian Heritage Program presented in the proposal announcement, the comments provided by National Park Service reviewers, and the discussions between Panel members at the proposal review. The Shared Beringian Heritage Program will now work on cooperative agreements between the National Park Service and the entities listed above. The Shared Beringia Heritage Program engages partners by being "substantially involved" in all funded projects, and works toward lasting and productive partnerships with other organizations, universities, and agencies. We would like to thank those who submitted proposals this year and we encourage you to try again during the next funding cycle. The Shared Beringian Heritage Program congratulates the parties chosen for funding, and looks forward to developing and implementing successful projects with the chosen cooperators.

For More Information or Questions about these Projects, please telephone, email or write:

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