

## RESEARCH NOTES

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Research Notes (RN) is intended to be a useful venue for making colleagues aware of ongoing or recent research and for disseminating brief notes of new  $^{14}\text{C}$  dates or other interesting finds, particularly those that may not be otherwise published. We intend to include information on research anywhere in the circumpolar Arctic and sub-Arctic.

Alaska anthropology has tended to be a bit insular. Many people are trained in Alaska and remain in the state to work. Perhaps as a result, relevant research from elsewhere in the circumpolar Arctic and sub-Arctic is often not considered by Alaska researchers. Even worse, much of the interesting and highly relevant work being done in Alaska is ignored by researchers working outside the state. We hope that *AJA* RN will foster connections between Alaska researchers and those working elsewhere on similar problems. In particular, many of the European contributors to this column are eager to learn about similar projects and to make connections that could lead to possible collaborations.

### NORTHERN ALASKA

#### ANCIENT DNA IDENTIFICATION OF A POLAR BEAR BONE DAGGER FROM CAPE ESPENBERG, ALASKA

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Cape Espenberg lies on the southwestern margin of Kotzebue Sound, Alaska, and is part of Bering Land Bridge National Park and Preserve. The crew of the Cape Espenberg Project, a multidisciplinary research project directed by John Hoffecker and Owen Mason (NSF ARC-0755725), undertook excavation of six house features at three Thule-period sites (KTZ-087, KTZ-088, KTZ-304) between 2009 and 2011. A bone dagger (Fig. 1; BELA-00115-36727) was found by Patrick Barr of Deering at KTZ-087, Feature 87, in 2011. It was recovered from the midden area two meters in front of the Thule house structure in Unit 15S, 2E, Level 2C (82 cm N, 41 cm E, 149 cm bd), at a depth of approximately 50 cm below the surface

vegetation. The house dates to approximately 1280–1420 cal AD, based on six AMS radiocarbon assays, five of which were on caribou bone, the sixth on charcoal. The artifact was initially identified as having been produced from the long-bone shaft of a large, terrestrial mammal.

The bone artifact yielded DNA, following extraction as per Brown (2013) in the Ancient DNA lab in Veterinary Genetics at the University of California, Davis. A 363 base pair sequence was entered into the searchable DNA database, BLAST (NCBI), and the first twenty-seven out of 100 sequences returned with 100% identification as the *Ursus maritimus* control region. Our sequence was aligned to polar bear sequences from Edwards et al. (2011) (Genbank accession numbers JF900105.1–JF900157.1). BELA-00115-36727 has a novel haplotype (Genbank # KC794784), two mutations away from a haplotype shared by the following localities: Alaska, Zhokov Island (Siberia), Herschel Island (Yukon Territory), and a voucher specimen from the St. Petersburg Museum (Genbank accession numbers JF900110.1, JF900111.1, JF900114.1, JF900141.1, JF900152.1, JF900157.1).

The identification of polar bear bone as the material used for this dagger is significant in terms of both methodology and the reconstruction of long-term patterns of



*Figure 1. Bone dagger recovered from midden area in front of house Feature 87 (KTZ-087) at Cape Espenberg, Alaska. Top: inner bone surface; bottom: outer surface. Photo by Jeremy Foin.*

İñupiaq social organization. Bone artifacts such as this one, which are shaped by grooving, grinding, and polishing, are often modified to an extent that the species of origin cannot be reconstructed based on morphology alone. While the dagger was clearly made on the long bone of a large terrestrial mammal, it could have originated from a range of species, including muskox, moose, or grizzly bear. Thus, in a case such as this one, only ancient DNA can provide definite identification.

The fact that the dagger is made of polar bear bone links it directly in function and symbolic association with a remarkable artifact category seen in the ethnographic record. Both Murdoch (1892:191) and Stefansson (1919:187) refer to daggers made of polar bear bone as the chief weapon used for fighting (as opposed to manufac-

turing, butchery, etc.) in the Barrow region. According to Murdoch (1892:191) “the commonest weapon of offense was a broad dagger made of a bone of the polar bear. . . . the use of bears’ bones for these weapons points to some superstitious idea, perhaps having reference to the ferocity of the animal.”

Similar daggers have been recovered from a number of archaeological sites in Northwest Alaska and in the Mackenzie Delta region, dating to at least as early as AD 1400 on the Kobuk River (Giddings 1952:92). However, in most cases the species of origin of the dagger could not be determined with certainty. This present identification not only extends this singular artifact category back in time but also reinforces the long-term symbolic association between interpersonal

conflict and polar bears, providing a window onto the dynamic social relations of this critical period in Arctic culture history.

The Cape Espenberg Project was funded by an NSF grant (ARC-0755725) awarded to John Hoffecker and Owen Mason. Ancient DNA analysis was supported by an NSF grant (ARC-0330981) awarded to Christyann Darwent and Ben Sacks.

## REFERENCES

- Brown, Sarah K., Christyann M. Darwent, and Ben N. Sacks  
2013 Ancient DNA Evidence for Genetic Continuity in Arctic Dogs. *Journal of Archaeological Science* 40(2):1279–1288.
- Edwards, Ceiridwen J., Marc A. Suchard, Philippe Lemey, John J. Welch, Ian Barnes, et al.  
2011 Ancient Hybridization and a Recent Irish Origin for the Modern Polar Bear Matriline. *Current Biology* 21(15):1251–1258.
- Giddings, James Louis  
1952 *The Arctic Woodland Culture of the Kobuk River*. Museum Monograph no. 8. University Museum, University of Pennsylvania, Philadelphia.
- Murdoch, John  
1892 *Ethnological Results of the Point Barrow Expedition*. Ninth Annual Report of the Bureau of American Ethnology. Government Printing Office, Washington, DC.
- Stefansson, Vilhjalmur  
1919 The Stefansson–Anderson Arctic Expedition of the American Museum: Preliminary Ethnological Report. *Anthropological Papers of the American Museum of Natural History* 14(1):1–395.

## NUVUK ARCHAEOLOGICAL PROJECT, 2011

Submitted by Anne M. Jensen, UIC Science, LLC

The Nuvuk Archaeological Project completed the seventh large-scale field season in July 2011 at Point Barrow. The crew was composed largely of North Slope high school students. We excavated six graves, for a total of eighty-six excavated graves from Nuvuk.

An Ipiutak structure with what appears to have been a central box hearth was discovered during the 2011 season. Additional funding was secured to complete emergency salvage prior to the fall storms. The Ipiutak structure from 2011 contained quite a bit of fish bone on the floor. This

has been recovered (the entire floor was sifted and floated in the lab). The history of fishing in nearby Elson Lagoon is a current research topic for local fisheries biologists, and we are partnering to identify the fish. We will be preparing a proposal to do aDNA on many of the fish remains, as they are fragmented enough that species-level identification by means of morphology alone will prove difficult.

Work included ground penetrating radar (GPR) surveys carried out by a team from Radford University led by Dr. Rhett Herman, which indicated that this technology works well in the gravel matrix at Nuvuk. We recovered one extremely deep burial at the exact depth calculated from the GPR data. There are several clear returns at the exact depth that the two Ipiutak features have been recovered, located along the line along which the beach was trending in AD 300–400.

Thirteen students worked in the laboratory during the 2011–2012 school year and summer 2012. We hosted twelve Ilisaġvik STEM camp participants for a day of activities, including mock excavation, shovel tests on the beach and working in the laboratory. We also hosted elementary students after school and from the City of Barrow recreation program through the Barrow Arctic Science Consortium outreach program.

## YUKON RIVER

### ARCTIC DOMUS: HUMAN-ANIMAL RELATIONS IN THE NORTH

Submitted by Jan Peter Laurens Looovers and Gro Ween, Department of Anthropology, University of Aberdeen

Arctic Domus is a five-year international European Research Council project hosted by the Department of Anthropology at the University of Aberdeen. The project leader is David G. Anderson; his team consists of members from the University of Aberdeen, University of Tromsø (Norway), Universities of Saskatchewan and Alberta (Canada), the University of Irkutsk, and the Kunstkamera in St. Petersburg (Russian Federation). The project interrogates the particular relations that exist between humans and animals in the Arctic, in North America (subarctic Canada and Alaska), Fenno-Scandinavia, and Siberia. The study focuses non-exclusively on fish, dogs, and reindeer. The objectives of the project are: (1) to place arctic field examples at the forefront of debates on animal domestication, human-animal co-evolution, and commensalism; (2) to build a new model of human-animal



relationships by establishing new discourses and opening understandings on how these relations change, advance, and retreat; and (3) to critically apply several analytical techniques to a range of sites, including ethnography, the history of science, environmental archaeology, osteology, and animal genetics.

The North American group aims to map the Yukon River, concentrating on several sites both upstream and downstream such as the Yukon delta, the Porcupine River, and overland connections with the Mackenzie Delta and Peel River systems. The upstream sites include Old Crow, Dawson City, Whitehorse, Fort McPherson, and Tsiigehtchic; downstream locations include St. Marys, Emmonak, and Pilot Station. The Yukon was chosen in order to (1) compare understandings of salmon and other fish at different locations from the perspectives of different knowledge communities; (2) observe the historical circulation of salmon through various networks, such as in gifting, trading, national and international politics; and (3) study changes in interspecies relations in different historical and economic periods.

Ethnographic work in Alaska will focus on the past and present knowledge communities that the river and the salmon connect; that is, Yup'ik fishermen, other communities upstream or downstream, and more recently, fishery biologists and natural resource managers. The study will focus on interfaces between each of these communities but also on particular aspects of each knowledge set, such as interspecies relations and morality in human-salmon relations.

The ethnographic work in the Yukon and Northwest Territory sites examines: (1) the changes in fishing and fishing technologies through an ethnohistorical approach to analyze past and present trade and economics; (2) the history and changes in dog use, including changes in fishing and hunting for dogs; (3) the connections of trails and relations between Gwich'in in Alaska, Yukon, and the Mackenzie Delta and between Gwich'in and neighboring communities; and (4) interspecies relations and morality. Work will be primarily with Gwich'in, in collaboration with the Gwich'in Social and Cultural Institute and the Vuntut Gwitchin Heritage Commission, but will extend to some work with fish and wildlife biologists and natural resource managers.

## CENTRAL ALASKA

### ARCHAEOLOGICAL INVESTIGATIONS IN THE MOLYBDENUM RIDGE AREA, TANANA VALLEY

Submitted by Julie Esdale and Kate Yeske, Colorado State University, Center for the Environmental Management of Military Lands

Archaeological survey and site testing in the Molybdenum Ridge area in the northern foothills of the Alaska Range took place during the summer field seasons of 2011 and 2012. Molybdenum Ridge is located between the Little Delta River and Delta Creek, south of the Tanana River. Past surveys by Charles Holmes and Northern Land Use Research near the East Fork of the Little Delta River uncovered small surface lithic scatters and sites with large subsurface concentrations, including formal tools (Higgs et al. 1999; Holmes 1979). Surveys during 2011 and 2012 revealed 22 new prehistoric sites.

The archaeological sites are mainly small surface and subsurface lithic scatters. Sites range in location from knolls on high plateaus up to 1,500 m above sea level to glacial moraines and creek terraces. One site, XMH-01438, consists of over 350 lithic artifacts on the surface and shallowly buried over a 1,000 m<sup>2</sup> area. Raw materials from this site are dominated by a variety of cherts (94%) and local rhyolite (6%). The tools collected include a triangular projectile point, a bifacial projectile point fragment, five projectile point preforms, eighteen biface blanks, one scraper, and several retouched flakes. A notched projectile point was found in a test pit at high elevation at XMH-01444. No other diagnostic tools or charcoal samples were uncovered during limited evaluations of these twenty-two new sites.

### REFERENCES

- Higgs, Andrey S., Ben A. Potter, Peter M. Bowers, and Owen K. Mason  
1999 Cultural Resource Survey Report of the Yukon Training Area and Fort Greely Army Lands Withdrawal, Alaska, vol. 2. Prepared by Northern Land Use Research, Inc., Fairbanks.
- Holmes, Charles E.  
1979 Archaeological Reconnaissance Report for Fort Wainwright, Fort Greely, and Fort Richardson Withdrawal Lands, Alaska. Prepared for the 172nd Infantry Brigade, Fairbanks.

## **SURVEY AND TESTING IN THE BLAIR LAKES ARCHAEOLOGICAL DISTRICT**

Submitted by Julie Esdale and Kate Yeske, Colorado State University, Center for the Environmental Management of Military Lands

Archaeological survey and site testing is planned for the region encompassing the Blair Lakes Archaeological District in the Tanana Flats for the summer of 2013. This area began attracting attention from the archaeological community after 2009 and 2010 surveys by Edmund Gaines and others (Gaines et al. 2011) uncovered sites in deeply buried, stratified deposits dating to the late Pleistocene. Before 2009, fourteen sites were known from the area, the majority of which were discovered by James Dixon and others (Dixon et al. 1980) during a 1979 survey of the area. The Blair Lakes Archaeological District (FAI-00335) currently encompasses six sites located on the north shore of Blair Lakes South that contained sufficient data to make them eligible for the National Register of Historic Places (Dixon et al. 1980).

Forty-eight additional sites were located in 2009 and 2010 (Esdale et al. 2012; Gaines et al. 2010). These sites were found north and east of the lake along an ancient alluvial terrace edge. Two sites in particular, FAI-02043 and FAI-02077, have deeply buried lithic material and associated charcoal dates of  $11,600 \pm 50$  (FAI-02043) and  $10,130 \pm 50$  (FAI-02077) RCYBP (Gaines et al. 2011). Faunal material from bison, goose, and hare were also recovered from the lowest component of FAI-02043.

The Colorado State University and the U.S. Army are partnering with archaeologists and graduate students at Texas A&M University to conduct a field school at Blair Lakes during the 2013 field season. Continued survey and testing for stratified archaeological sites in the ridges and terraces adjacent to the lakes will also take place. We plan to investigate several of the sites in the region to determine their eligibility for the National Register and inclusion in the Blair Lakes Archaeological District.

## **REFERENCES**

- Dixon, E. James, George S. Smith, and David C. Plaskett  
1980 Archeological Survey and Inventory of Cultural Resources, Fort Wainwright, Alaska. Prepared for the U.S. Army Corps of Engineers, Alaska District.
- Esdale, Julie A., Edmund P. Gaines, Whitney E. McLaren, and James Quinn  
2012 Section 110 Report, Cultural Resources Survey and Evaluation, Fort Wainwright and Training Lands: 2010 and 2011. Prepared by the Center for Environmental Management of Military Lands, Fort Collins, CO.
- Gaines, Edmund P., Kate S. Yeske, and Sarah J. McGowan  
2010 Annual Report: Cultural Resources Survey and Evaluation, Fort Wainwright, Alaska, 2009. Prepared by the Center for Environmental Management of Military Lands, Fort Collins, CO.
- Gaines, Edmund P., Kate S. Yeske, Scott J. Shirar, William C. Johnson, and James F. Kunesh  
2011 Pleistocene Archaeology of the Tanana Flats, Eastern Beringia. *Current Research in the Pleistocene* 28:42–44.

## **KODIAK**

### **RECENT EXCAVATION IN WOMENS BAY**

Submitted by Patrick Saltonstall and Amy Steffian, Alutiiq Museum & Archaeological Repository

Alutiiq Museum archaeologists have been studying prehistoric sites in Womens Bay for sixteen years. This broad inlet, overlooking the city of Kodiak, provides access to all of the resources Kodiak foragers typically harvest in a year. Moreover, the bay has a wealth of archaeological sites spanning Kodiak prehistory. As such, it offers opportunities to investigate a variety of sites and the changing patterns of land use they represent.

In recent years, excavations led by museum curator Patrick Saltonstall focused on sites at the head of the bay, adjacent to quiet inner waters and a salmon stream. Inner bays typically hold small deposits and have not been a focus of research. Archaeologists often interpret these locales as areas for anadromous fishing and waterfowl hunting. In reality, the archaeological record is more complex. Here, a variety of sites represent a broad range of activities and settlement intensities. The most unique finds come from the Amak site (KOD-1053), investigated from 2011 to 2012.

Today the Amak site lies roughly a mile from the active beach. When occupied, it rested beside a riverine lagoon, behind the beach. The site has three components dating between 3800 and 7100 BP, with the most intensive



Figure 2: Ground slate points and flensing knives from the 2011 Amak excavation.

occupation during the Ocean Bay II tradition. The site's artifact assemblage is focused, heavily dominated by ground slate lances and also containing whetstones, scoria shaft abraders, flensing knives, and *pièces esquillées*; tools associated with sea mammal hunting, tool refurbishment, and butchery.

The central feature appears to be a meat-processing structure dating to  $4830 \pm 30$  BP (uncalibrated conventional). This oval depression measured five meters across, with numerous small pit hearths and a dense fill of fire-cracked rock, burned sod, and charcoal-stained soil. The structure was open along the front with a sod wall over 50 cm high along the back. Fire-cracked rock and hearth material were dumped in front of the feature—an area where most of the slate lances were also found. Together, the site's artifacts and features suggest a small, revisited hunting camp, where foragers harvested and processed harbor seals. This is the first view from such a site in the Kodiak region and broadens understanding of the activities that took place in sheltered inner bays 5,000 years ago.

## YUKON TERRITORY, CANADA

### PLANNED WORK IN THE DAWSON AND MAYO MINING DISTRICTS

Submitted by Greg Hare, Cultural Services Branch, Yukon Government

One of the largest archaeology projects ever conducted in the Yukon will be carried out over the next two years. The Yukon Government, in cooperation with Tr'ondëk Hwëch'in and Na-Cho Nyäk Dun First Nations, initiated the project at the end of 2012 with funding from the Canadian Northern Economic Development Agency. The \$480,000 project will consist of the development and testing of a GIS-based predictive model for the Dawson and Mayo mining districts of the Yukon, both areas that have experienced large increases in placer gold mining in recent years. These areas are relatively remote with very little baseline archaeological data. The work will be carried out by Matrix Research Ltd. of Whitehorse, led by Ty Heffner.



## NORTHERN EUROPE

Submitted by Svetlana Usenyuk, Aalto University School of Art, Design, and Architecture (Aalto ARTS), Helsinki, Finland

The research project Arctic Technologies of Adaptation and Survival: Traditions and Innovations (ATAS) opens a new transdisciplinary track in the study of arctic technology by exploring forms of indigenous adaptation to local conditions, using local materials and locally developed skills that lead to particular modes of mobility. This kind of comprehensive approach coupled with design has not been used before to address diverse technological, environmental, social, and cultural challenges related to the sustainable development of the Arctic. By applying an indigenous vision of mobility to the transportation sector, the intent is to come up with innovative road construction plans, mobile shelters, and energy-efficient vehicles.

The Arctic is home to a mosaic community of newcomers, now the most numerous subpopulation of the North. The spontaneous and uncontrolled movements of humans between opposite climatic zones inevitably leads to physical, psychological, environmental, and cultural conflicts. To minimize such conflicts, we have to use the best available knowledge, i.e., the knowledge gained by indigenous nomads while struggling with severe conditions on a daily basis. Thus, the broad question of “how to survive” becomes the more concrete question of “how to move.”

“Movement is not simply something imposed on humans by the movement of animals, it emerges as the foundation of nomadic aesthetics,” Piers Vitebsky (2011) discovered during his long-term study of reindeer herders. Human and animal migrations constitute the very essence of adaptation to extreme environments and bring a specific quality to people’s lives, involving regular resettlement of whole families with all of their belongings, their entire culture: everything is directly or indirectly related to continual movement.

The Arctic Technologies project explores the phenomenon of the nomadic “art of movement” in its different forms: from physical locomotion and mobility, facilitated by machines, to “mind-walking” (Ingold 2008). Arguing that every object in the indigenous world of “necessity and sufficiency” is an impetus for movement, the research aims to answer what types of movement are suitable or essential in the extreme environment of the Arctic at present and in the future and, from a designer’s point of view, how to create tangible “provocations” to a particular

type of movement. For further information, contact Dr. Usenyuk at svetlana.usenyuk@gmail.com.

## REFERENCES

Ingold, Tim

2008 Bringing Things to Life: Creative Entanglements in a World of Materials. Online at [www.reallifemethods.ac.uk/events/vitalsigns/programme/documents/vital-signs-ingold-bringing-things-to-life.pdf](http://www.reallifemethods.ac.uk/events/vitalsigns/programme/documents/vital-signs-ingold-bringing-things-to-life.pdf).

Vitebsky, Piers

2011 Pleasures and Sorrows of Movement Among Nomadic Reindeer Herders in Northeast Siberia. Paper presented at the 7th International Congress of Arctic Social Sciences, Akureyri, Iceland.

## RUSSIA

### LIVES ON THE MOVE: MOBILE LABOR IN THE RUSSIAN ARCTIC PETROLEUM INDUSTRY

Submitted by Gertrude Eilmsteiner-Saxinger, Institute for Urban and Regional Research (ISR) at the Austrian Academy of Sciences (ÖAW), Vienna, and Austrian Polar Research Institute

While the population of the Russian North is shrinking in size, the activities of the extractive industries are continuing to grow. The demand for highly qualified staff is great, but cannot be fully met by those living in monoindustrial towns in the arctic and subarctic regions. Therefore, long-distance commuting or so called fly-in/fly-out (FIFO) operations are employed to bring an additional workforce from all over Russia on a rotational shift basis into the Russian North; specifically, to the work sites in the tundra or taiga and to monoindustrial cities there.

The research project Lives on the Move (2010–2015), financed by the Austrian Science Fund (FWF; P 22066-G17), explores how these workers organize their itinerant lifestyle, which consists of spending one month at home in the temperate regions and from one to three months in the North (G. Eilmsteiner-Saxinger). It examines the changes in the social fabric in the “sending regions” (such as the Republic of Bashkortostan) that have come about due to the regular periodic absence of primarily male workers (E. Öfner). In addition, it traces the ways in which northern towns such as Vorkuta (E. Nuykina) and Novy Urengoy (G. Eilmsteiner-Saxinger) see their future as distribution hubs for this itinerant workforce and as socially and

economically viable towns. Furthermore, the project looks at the interaction of the local populations with the influx of mobile commuters.

The team explores the impact of the way neoliberal approaches in human resource management function in the circumstances of a weak state in terms of control of working conditions and enforcement of labor laws and limited action against corruption. These impacts relate to people's well-being as well as to their motivation to continue or to take up a life on the move. This is an interdisciplinary research project drawing on geography, anthropology, and political science and employing ethnographic methodology. For further information, contact Gertrude Eilmsteiner-Saxinger at [gertrude.eilmsteiner-saxinger@univie.ac.at](mailto:gertrude.eilmsteiner-saxinger@univie.ac.at).