

RESEARCH NOTES

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Research Notes is intended to be a useful venue for making colleagues aware of ongoing or recent research and for disseminating brief notes of new ^{14}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.

NORTHERN ALASKA

EMERGENCY EXCAVATION OF ERODING PRECONTACT HOUSE AT WALAKPA (UALIQPAA)

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A sod house was discovered eroding out of the shoreline at Walakpa (Ualiqpaa). The house was partially exposed

and appeared unstable (Fig. 1). It was located right next to Dennis Stanford's 1968 and 1969 excavations (Stanford 1976). Salvage work was carried out with a combination of UIC Professional Services (UICS and UMIAQ) personnel and community volunteers, with additional funding from the North Slope Borough.

We recovered two of Stanford's three site datums and were able to record locations within his site grid. All artifacts were point provenienced with the transit. Other



Figure 1. Eroding house viewed from the beach.

materials (e.g., bone fragments, chert flakes, woodworking debris, baleen strips) were excavated in small areas with provenience to within 50 cm horizontally and 5 cm vertically. We reached frozen ground near the back wall of the excavation on September 11. Excavation continued until the site froze.

It appears that there were a series of living surfaces at that location. The most recent appears to be the floor of a tent or similar structure (Fig. 2), rather than a winter sod house. There is clear evidence that at least one sod house was located there. There were a series of what appeared to be house floors. These were covered by layers of midden, suggesting that the house was repeatedly abandoned and then rebuilt. The house at one point seems to have had a meat storage pit or cache built in it, which was filled with midden.

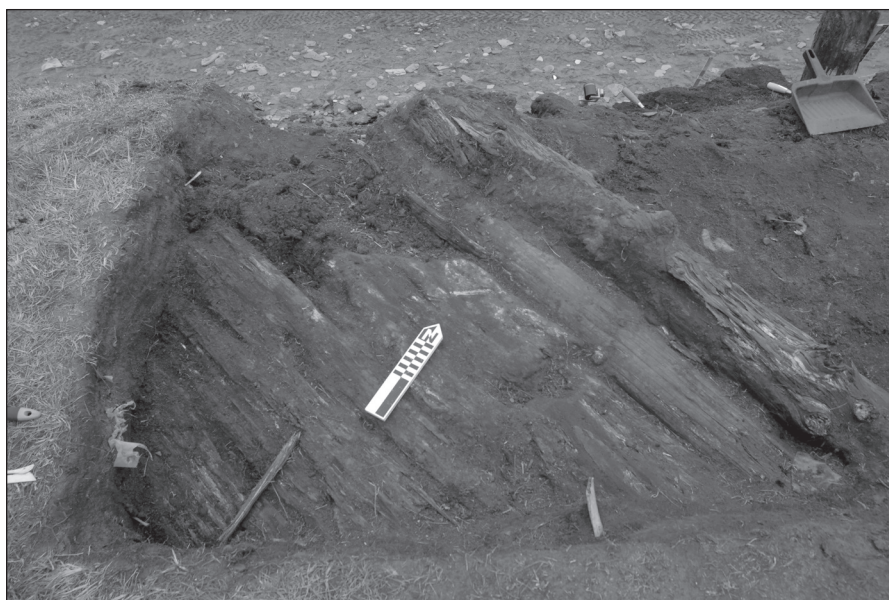


Figure 2. Part of probable tent floor.

The artifacts ranged from modern plastic eyeglass frame fragments in the sod layer to harpoon heads that are stylistically Late Birnirk/Early Thule (Fig. 3). We did not reach sterile, so it is possible that there is Choris material at the bottom.

Funding for radiocarbon dating has been obtained from the National Science Foundation via a RAPID grant and suitable samples have been submitted for radiocarbon dating.

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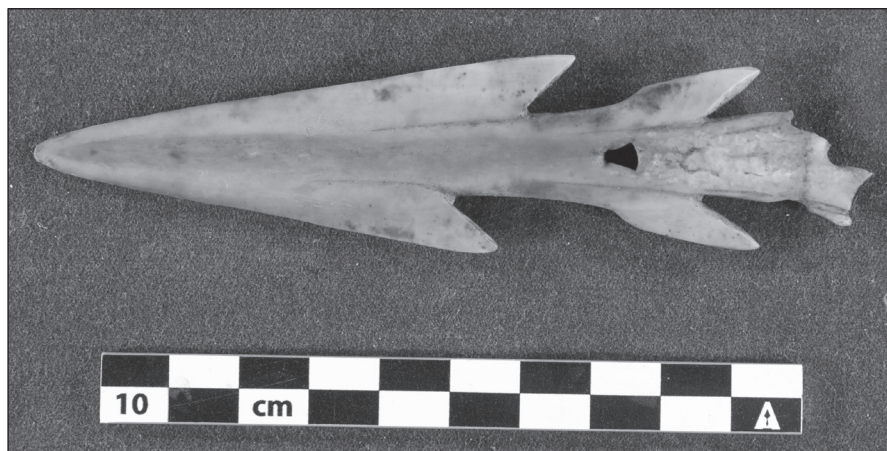


Figure 3. Late Birnirk–Early Thule-style harpoon head.

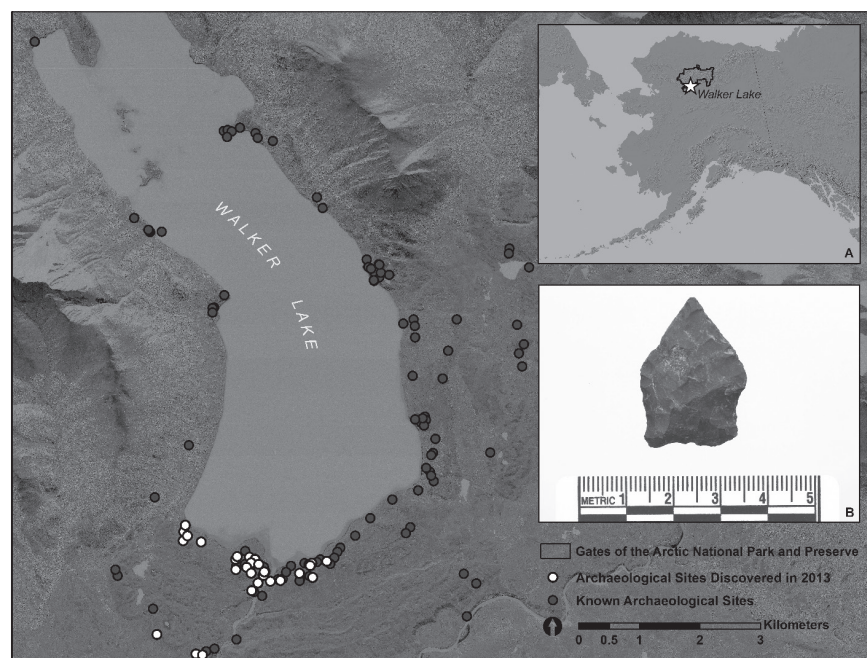
NORTHERN INTERIOR

ARCHAEOLOGICAL SURVEY AT WALKER LAKE IN GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE IN 2013: RESEARCH NOTES

Jillian Richie and Jeff Rasic, National Park Service, Gates of the Arctic National Park and Preserve

Located at the headwaters of the Kobuk River in Gates of the Arctic National Park, Walker Lake was the focus for a National Park Service archaeological survey in July 2013. A crew of four archaeologists travelled to the southern shoreline of Walker Lake and evaluated the condition of known prehistoric sites, expanded survey coverage, and identified new archaeological sites. Past surveys in the area (Hall 1974; Kunz 1984; Rasic 2003) documented small lithic scatters indicative of short-term prehistoric hunting locations, and the results of the 2013 NPS survey follow this trend.

Fourteen known archaeological sites were revisited during the 2013 field season, and sixteen new sites were discovered. A typical site contains one or more flake scatters, small in both number of artifacts and extent, and is located within 500 m of the lake on the lake-facing side of one of the many elevated and well-drained landforms in the area (e.g., bedrock knolls, beach ridges, and glacial moraines).



Map of Walker Lake showing archaeological sites. Inset A: Geographic location of Walker Lake in Gates of the Arctic National Park and Preserve, Alaska. Inset B: Side-notched projectile point collected in 2013 from a site near Walker Lake.

Scatters consist primarily of non-diagnostic lithic debitage in a variety of materials, including chert and obsidian. Tools are scarce but present and include unifacial scrapers, expedient flake tools, microblades, biface preforms, and a single side-notched projectile point (figure inset B) relocated from Kunz's 1983 survey (Kunz 1984). The small, chert projectile point was the only temporally diagnostic artifact encountered on this survey, but previous work produced similar side-notched projectile points characteristic of the Northern Archaic tradition. Obsidian is common in assemblages from this area, which is unsurprising given the easy river routes to the Koyukuk River drainage and the major obsidian source area of Batza Tena found there. Geochemical analysis of existing museum collections from multiple sites in the vicinity of Walker Lake shows that Batza Tena (Group B) is the overwhelmingly dominant obsidian type ($n = 301$ specimens), although small amounts of Groups P ($n = 24$), G ($n = 6$), and N ($n = 1$) also occur.

The potential for intact stratified features exists at Walker Lake sites, but deeply buried cultural materials were not encountered in 2013. Of thirty-eight positive shovel test pits, thirty-six contained artifacts between 0–10 cm below surface, two had flakes below 10 cm below surface, and two revealed hearth features. At site XSP-046, AMS dating of charcoal from a hearth feature found

22 cm below surface yielded an age of 3,980 ^{14}C yrs BP (UGAMS-15164). At site XSP-009/XSP-249, the bioapatite fraction of a calcined mammal bone fragment yielded an age of 4,320 ^{14}C yrs BP (UGAMS-15163). Faunal remains were also documented at four other sites in 2013, although the specimens are fragmented and the taxa not readily identifiable. Faunal remains identified during past studies at Walker Lake, however, demonstrate caribou was one prey species targeted by hunters at this location (Kunz 1984).

Information gained during the 2013 field season is preliminary in nature, but when paired with the results of previous work, tentative conclusions can be offered. Given the presence of artifacts with Northern Archaic characteristics in nearby sites and an absence of cultural material representing other traditions (such as

partially coeval Denbigh Flint Complex), the archaeological sites dated in 2013 are most likely associated with the Northern Archaic tradition. Additionally, the ephemeral nature of sites at Walker Lake, along with artifact assemblages that include end scrapers and bone fragments, appears to reflect temporary hunting localities. The vast majority of evaluated sites are stable and in good condition, with only minimal impacts by human or natural disturbances.

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SOCIAL AND ECONOMIC DEVELOPMENT OF THE NETS'AII GWICH'IN OF ARCTIC VILLAGE, ALASKA

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Since 1999 I have been conducting field work among the Nets'aai Gwich'in of Arctic Village, Alaska. My research combines historical, sociological, and community planning methods and theoretical frameworks as a foundation for the evaluation and analysis of this evolving Alaska Native tribe. Additionally, I seek here to include traditional native knowledge which has, for all too long, been ignored in many academic circles. My most recent and significant support for the study (2011–2013) was a grant from the National Geographic Society Waitt Grants Program.

Through an analysis of the role of religious institutions, formal education, and government-provided services

on the one hand, and the ongoing practices of subsistence (hunting, fishing, gathering) in an era of climate change on the other, I have sought to understand how this community is negotiating, adapting, accommodating, and facilitating social and economic development within the global economy.

I am now writing a monograph that is centered largely upon village youth, for their changing interests, values, attitudes, and behaviors clearly signify the emergence of an ever-evolving twenty-first-century Alaska Native. The monograph is tentatively titled *Living on Thin Ice: The Social and Economic Development of the Nets'aai Gwich'in of Arctic Village, Alaska*.

INTERIOR

TOCHAK MCGRATH DISCOVERY: PRECONTACT HUMAN REMAINS IN THE UPPER KUSKOKWIM RIVER REGION OF INTERIOR ALASKA

Robert A. Sattler, Tanana Chiefs Conference; Thomas E. Gillispie, Tanana Chiefs Conference; Vicki Otte, MTNT, Limited; Betty Magnuson, McGrath Native Village Council; Ray Collins, Tochak McGrath Museum; and Kristi Harper, NRCS Alaska Tribal Liaison, USDA/NRCS

In October 2012, the discovery of human remains in the western Interior Alaska village of McGrath rapidly evolved into a community research endeavor. Construction relating to an emergency erosion project turned up the skeletal remains of three individuals on land owned by MTNT, Ltd. near the center of McGrath. MTNT is a consortium of for-profit village corporations created by the Alaska Native Claims Settlement Act (ANCSA) that includes McGrath, Telida, Nikolai, and Takotna. All four villages are located in the upper Kuskokwim River drainage and share an Athabascan cultural heritage (Collins 2004; Hosley 1981). The remains, representing two adult males and a small child, were placed in the in the custody of the local tribal entity, the Native Village of McGrath, and consultations began among affected tribal, state, and federal entities.

The upper Kuskokwim Native leadership invited archaeologists affiliated with their ANCSA regional non-profit corporation, Tanana Chiefs Conference (TCC), to assist. TCC helped bring the project into compliance with the National Historic Preservation Act and facilitated consultations with the Native leadership over custody and

research opportunities. Through additional consultations, which included the National Resources Conservation Service and the Alaska State Historic Preservation Office, agreements were negotiated to preserve the discovery site while allowing the construction project to continue. The consultations with Alaska Native leadership over custody and research opportunities led to a separate agreement authorizing the transfer of the human remains to TCC for scientific analyses for a period of five years.

Following the consultations, MTNT-affiliated tribal members crafted a wood container to carry their ancestors during transport to the TCC central office in Fairbanks. Following a community celebration in McGrath, the remains were flown to Fairbanks, with a brief stop in the traditional village of Nikolai where elders greeted the aircraft at the village runway and blessed the remains. In Fairbanks, the cooperating agencies and Native entities convened a formal press conference announcing the discovery. The press conference included a blessing by an Alaska Native Episcopal leader, which consecrated the ancient remains (*Fairbanks Daily News-Miner* 2012).

The initial phase of scientific inquiry consisted of radiocarbon dating and osteological data collection, including skeletal representation, biological age estimates, dental features, and an assessment of pathological markers. A second research phase included further radiocarbon dating, ancient DNA testing, radiological examination, and stable isotope analyses. Preliminary results are available for these studies and more are expected. During the summer of 2013, systematic archaeological testing in and around the McGrath discovery locale yielded stratigraphic evidence of a younger component with a hearth feature, lithics, worked bone fragments, and nonhuman faunal remains. This phased approach has provided the time necessary to accommodate informed tribal consultation, community presentations, and popular media outreach. One outcome of the collaboration between the tribal and research communities has been the emergence of a voluntary modern DNA research project with implications for historical population reconstruction and improved clinical health outcomes for tribal members in the TCC region.

The joint scientific and medical team established to advance this community research project include Joel Irish, Jamie Clark, Dan Johnson, Keir Fowler, George Bird, Richard Scott, Geoff Hayes, Dennis O'Rourke, Jennifer Raff, Holly McKinney, and Carrin Halfman. Volunteered services include those provided by Fairbanks

Memorial Hospital and Radiology Consultants. The 2013 excavation team included Bob Sattler, Angela Younie, Michael Grooms, and Christine Fik. Tribal leaders involved in consultations include members of the McGrath Native Council; board members of MTNT, Ltd.; and tribal chiefs of the TCC Upper Kuskokwim Advisory Board. Tom Gillispie drafted the initial site report and negotiated the management documents. KSKO general manager Mike Lane convened two live radio broadcasts in McGrath to share results with Upper Kuskokwim residents. Last, the greatest compliment is to Jim VanRaden, the employee of North Star Paving and Construction who honored a civic duty to report this remarkable discovery to the Native leadership, providing an opportunity to make all of this possible. Funding for this research comes from the Natural Resources Conservation Service, the National Science Foundation (grant #1216401), and Tanana Chiefs Conference Natural and Cultural Resources Department.

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HEALY LAKE VILLAGE: NEW DATA AND ANALYSIS FROM THE CHINDADN TYPE SITE

Thomas E. Gillispie, Natural and Cultural Resources Department, Tanana Chiefs Conference (tom.gillispie@tananachiefs.org); John P. Cook, independent researcher; Robert A. Sattler, Tanana Chiefs Conference; and Angela Younie, Center for the Study of the First Americans, Texas A&M University

The Healy Lake Working Group (HLWG), headed by John P. Cook, the original excavator of the Healy Lake Village site, is a research team organized to consolidate,

analyze, digitize, and publish the field data collected during excavations from 1966–1972 (Cook 1969, 1989, 1996). Located in central Alaska's middle Tanana River valley, the Healy Lake Village site was among the first archaeological sites in Eastern Beringia to be radiocarbon dated to the late Pleistocene and is the type site for the Chindadn Complex, dated to 13,370–9,090 cal BP (Cook 1975, 1996). Diagnostic artifacts include triangular and teardrop-shaped points, microblades and burins, blade tools, and end scrapers. However, cryoturbation, radiocarbon laboratory errors, and Cook's use of arbitrary two-inch excavation levels as temporal units for analysis have all been suggested as sources of interpretive error and potential foundations for the rejection of the Chindadn Complex as an interpretive entity (Erlandson et al. 1991).

In preparing the original Healy Lake Village excavation records for archival curation, we found previously unpublished field data directly relating to the Chindadn dating question. This documentation includes over 1,600 pages of notes, 300 photographs, fifty large-scale stratigraphic drawings, and scaled floor plans of excavation levels, and covers 3,500 square feet of excavation. Of particular importance are three-point provenience data for all artifacts collected in situ, combined with curated radiocarbon samples, including splits of many of the previously dated samples with original submission letters and lab reports. Numbering in the tens of thousands, the curated field specimens include the entire faunal assemblage, as yet unanalyzed, as well as the full collection of lithic artifacts. The assemblage has been scattered across several repositories since the original excavation, but is now housed together at the University of Alaska Museum of the North. This body of primary field data is sufficient to support new analysis of the Chindadn levels with greatly improved spatial and temporal control.

The HLWG is pursuing a detailed reexamination of smaller subdivisions of the site where Chindadn type artifacts are associated with cultural wood charcoal. Prior to dating new samples, we performed an exploratory analysis of the original site date list, using the probability density function technique. This method creates a high-resolution model of the date list as a probability distribution, without tying specific dates to specific excavation levels. Our results strongly suggest that the population of Healy Lake Village site radiocarbon ages contains internal temporal structure. Specifically, Cook's 1996 date list contains three distinct peaks in probability, centered

on about 9,500, 12,000, and 13,400 cal BP (Gillispie et al. 2013). This preliminary analysis leads us to hypothesize that the Chindadn Complex as originally defined at the Healy Lake Village site may encompass three components. To test this hypothesis, the HLWG is constructing a new Chindadn chronological framework that does not depend entirely on the site-wide arbitrary level system and will focus on stratigraphic associations between artifacts and dated materials within individual units. A redating program using modern AMS techniques is currently underway (Gillispie et al. 2013) and will be complemented by three-dimensional modeling of artifact proveniences, lithic and faunal analysis, and comparative information from new excavations at the nearby Linda's Point site (Younie et al. 2013).

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ALEUTIANS

COLLABORATIVE RESEARCH: GEOLOGICAL HAZARDS, CLIMATE CHANGE, AND HUMAN/ECOSYSTEMS RESILIENCE IN THE ISLANDS OF THE FOUR MOUNTAINS, ALASKA

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The National Science Foundation, Office of Polar Programs, Arctic Social Sciences has awarded funding to conduct archaeological, paleobiological, and geological research in the Islands of the Four Mountains, Aleutian Islands, Alaska. Assessing the degree to which geological hazards in the Aleutian archipelago disrupted prehistoric human and ecological systems has important lessons for current inhabitants of the northern Pacific Rim. The Islands of Four Mountains region embodies environmental instabilities that, in the last 10,000 years, include changing subarctic climate, volcanic eruptions, earthquakes, tsunamis, and sea-level fluctuations. Compared to adjacent regions to the east and west, strong ocean currents and smaller island size magnify ecologically driven resource extremes, perhaps creating a physical bottleneck and the cultural boundary that persisted into the early twentieth century. These islands provide an excellent opportunity to assess the development of prehistoric human adaptations to geological hazards and environmental change. That such research has not already occurred is understandable. The same volcanic activity, precipitous coastlines, high winds, and strong riptides that may have posed profound risks to prehistoric individuals hinder modern research expeditions. The Four Mountain prehistoric sites are little studied but are highly significant in light of new geologic data indicating volcanic activity during human migration and societal development in the Aleutian archipelago. A team of professional and student archaeologists, geologists, ecologists, and zoologists will conduct a comprehensive, interdisciplinary three-year investigation in the Islands of the Four Mountains. Extensive new radiocarbon, geological, paleoenvironmental, and cultural data expected from these sites will yield novel insights into the record of geological hazards, human coping mecha-

nisms, changing subsistence, and adaptations during the prehistoric and European contact periods.

The Islands of the Four Mountains are located in an ecologically and economically important region of the world—the North Pacific and Bering Sea. Humans on two continents rely on fish from its marine ecosystem and, given the sensitivity of airplanes to volcanic ash and of coastal cities to tsunamis, its geologic hazards potentially affect all nations of the northern Pacific Rim. Comprehensive research on long-term human-environmental interactions in the Bering Sea region, set against a backdrop of accelerated global change, is vital to understanding the dynamics of Aleutian biological and human systems and effectively addressing the social, political, and economic issues that arise from changes in those system dynamics today. The island group lies in a zone of high catastrophic potential in that one of its volcanoes, Mt. Cleveland, has erupted explosively more than twenty times in the last decade (as recently as May 2013) and during the time of prehistoric human habitation. The Aleutian Plate boundary is the site of four earthquakes having a magnitude greater than 8 and dozens with magnitudes greater than 7, and these have generated tsunamis historically and prehistorically. Through partnerships with the Alaska Volcano Observatory, the Aleut Corporation, the Museum of the Aleutians, and the Keck Geology Consortium, this project will bring scientists, Native Americans, students, and policy makers together in education and collaboration.

ISLAND NETWORKS: SUBSISTENCE AND CIRCULATIONS IN THE ALEUTIAN ISLANDS

Katherine L. Reedy, Department of Anthropology, Idaho State University

As part of a three-year study on subsistence harvesting and social networks funded by the Alaska Office of Subsistence Management (OSM) of the U.S. Fish & Wildlife Service, Katherine Reedy (PI) and assistant Andrea Kayser made multiple research trips to the Aleutian Islands in 2013. This project aims to understand wild food harvests, uses, and distribution in the Aleutian Islands communities of Adak, Atka, Nikolski, and Unalaska, linking results to recent work in Akutan, False Pass, Nelson Lagoon, and Port Heiden (Reedy-Maschner and Maschner 2012). Current detailed information on all subsistence harvests is needed for management of these species within and adjacent to the Alaska Maritime National Wildlife Refuge.



Andrea Kayser completes a survey with Sergie Ermeloff in Nikolski, Alaska, July 2013.

Using household-level and community-level data, the study uses a comprehensive survey instrument to document subsistence harvest levels and methods, distribution practices and sharing patterns of foods and products, social dynamics that contribute to those practices, spatial data on harvesting and sharing, and household and community economics. The study also investigates factors affecting overall access to subsistence foods (regulatory, obtainability, socioeconomic, and logistical), costs incurred, and resources (equipment, crews, etc.) needed in order to harvest. Surveys gather ecological observation data in conjunction with species observations to potentially evaluate climatic impacts on subsistence species. The study also gathers information on recent changes to subsistence harvests so managers can better understand factors that have shaped current practices, for example lost or increased access, changing regulations, climatic influences, and socioeconomic opportunities or losses. Comprehensive ethnographic profiles accompany this work.

Initial visits to introduce the project and conduct key informant interviews were made to each community in the spring and summer of 2013. In July 2013, we surveyed the entire village of Nikolski (fifteen households) and in September 2013, we surveyed 90% of Adak's estimated forty-four households. Surveys of Atka and Unalaska will be completed in spring 2014, using methods in the large community of Unalaska to target active harvesters who are assumed to be embedded in large or small sharing networks and snowballing out to those individuals to whom they have ties. Social network data are not random or probability samples; this project is a departure from conventional survey data and demands complementary methods. This approach is effective for tracking specific segments of large populations. It will further allow us to follow capacities, opportunities, constraints, duties, and burdens of harvesters and sharers.

Each community is so varied in its history, composition, scale, and economy, yet they all engage with wild

foods at high levels. Preliminary findings suggest a vast interaction zone between communities in some of the most inconvenient and challenging circumstances. Whenever people, vessels, and airplanes move in and out of these communities, so too do wild foods, but at great costs and planning, requiring healthy social relationships and creativity. The study will contribute to an understanding of the strategies utilized to support everyday economic and food requirements and explore the ways in which remote, seemingly isolated communities are necessarily integrated into socioeconomic systems beyond themselves, even as they experience diminishing economic ties to Bering Sea and North Pacific fisheries.

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THESIS AND DISSERTATION ABSTRACTS

Monty Rogers

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While conducting research for my master's thesis, I came across the Australian Archaeological Association's journal *Australian Archaeology*, which has a reoccurring section dedicated to dissertation and thesis abstracts. This got me thinking that a similarly styled section in *AJA* would be beneficial in promoting student-derived arctic and subarctic anthropological research relative to Alaska.

The new section will include abstracts of recent theses and dissertations and will regularly appear in future issues of *AJA*. The inaugural edition of this section consists of two abstracts from Canadian universities, two from Alaska universities, and one from a Scottish university. Two of the abstracts represent archaeological research, two are derived from cultural anthropological studies, and one is based on medical/cultural/biological research. Hopefully you will find this new section as beneficial as I did when I came across the Australian equivalent.

SHADES OF GREEN: THE SOCIAL NATURE OF YUKON FORESTS

Jodie Asselin

Ph.D. dissertation, 2013, Department of Anthropology, University of Alberta, Edmonton

ABSTRACT

This work is an exploration of forests as understood and encountered from varied and overlapping perspectives in the Yukon Territory. Focusing on nonindigenous Yukon residents who hunt, trap, work, recreate within, and aim to protect Yukon forests, it addresses the origins and implications of diverse forest perspectives in Canada's north as well as the correlation and interaction of these perspectives with indigenous cultural, economic, political, and historic forest connections. As a means of exploring the origin of forest perspectives, the author focuses on four key areas: Yukon forest history and its connection to contemporary forest views, divergent user experiences and knowledge of forests, the implications of regulation and boundaries on the forest experience, and the role of imagination in forest perception. As multilocal and multivocal place, forests are approached as consisting of overlapping meanings that are

far more complex than use-based distinctions allow for. As a result, many contradictions become apparent: that Yukon forests are experienced as both pristine wilderness and as places of intensive human use, as places of freedom while also being bound by bureaucracy, and as the focus of competing forms of environmentalism from unexpected sources. A number of points arise from the examination of such contradictions, including the potential for used spaces to once again be experienced as wild, how deliberately simplified self-narratives can mask complex human-environment relations, and how the language surrounding forest use and management is not necessarily based on common understandings of forests experience. Rather than focusing on forests as the background to broader social or economic issues, this work examines the multilocal and multivocal nature of forests as a means to better understanding local views, actions, and relationships between forest users. Set within the shifting priorities and economic and political realities of the far north over the last century, this examination of divergent forest perspectives explores human-environment relations in Canada's north with an eye towards contemporary resource management and consultation processes. This work is based off of anthropological fieldwork that took place in the Yukon

Territory between 2008 and 2010. Methods included archival research, interviews and participant observation.

Online at <https://era.library.ualberta.ca/public/datastream/get/uuid:36e1c134-3f9b-447a-951e-1ce378ba85a3/DS1>

“NEVER SAY DIE!” AN ETHNOGRAPHIC EPIDEMIOLOGY OF *H. PYLORI* BACTERIAL INFECTION AND RISK PERCEPTIONS IN AKLAVIK, NWT

Sally Carraher

Ph.D. dissertation, 2013, McMaster University, Department
of Anthropology

ABSTRACT

Helicobacter pylori is a bacterium that infects the human stomach lining and is known to cause peptic ulcer disease and stomach cancer. This infection has become a major concern of indigenous peoples living in the Mackenzie Delta of the NWT, where both *H. pylori* infection and stomach cancer occur with greater frequency than in southern Canada and the United States. Some initial analyses of data gathered on income, housing and household living conditions, and other socioeconomic factors suggest that indigenous residents of Aklavik who live with greater social inequities may have an elevated prevalence of chronic *H. pylori* infection—a pattern that resembles high *H. pylori* prevalence in other marginalized populations across the world. I joined the Canadian North *Helicobacter pylori* (CANHelp) Working Group in 2010 to conduct participant observation in the Aklavik *H. pylori* Project (AHPP) and identify ways that ethnography can be integrated into the ongoing multidisciplinary research program.

Between September 2011 and June 2012, I lived as a participant observer in Aklavik, NWT (population ~625). During this time, I led an epidemiological field study of *H. pylori* incidence and reinfection. We found that the prevalence of this infection has diminished (and reinfection is relatively rare so far) amongst long-term project participants. However, the community as a whole has remained extremely concerned about *H. pylori*, especially in light of two new stomach cancer diagnoses in the community since the AHPP started. I examined how different risk perceptions emerge from processes of “making sense” of *H. pylori* as a “pathogen” or as a “contaminant” and de-

scribed how these different constructions inform people’s risk-avoidance strategies.

Indigenous residents of this community perceive historical colonialism as the source of contemporary social inequities. Local narratives of cancer as well as *H. pylori* reference notions of “contamination” that is perceived to have been introduced to the Arctic through the physical and cultural pollution of historic colonialism and boom-and-bust economic projects. Local perspectives clash with scholarly narratives, which assert more broadly that human health often improves (and more specifically, that the frequency of *H. pylori* infection generally decreases) when a society modernizes its socioeconomic system and increases standards of living. Ethnography of these contrasting, yet entangled, views can make visible the lenses through which different groups of actors perceive, experience, understand, and react to *H. pylori* infection.

In my dissertation, I argue that there is a need to explicitly acknowledge that the social inequities associated with *H. pylori* infection today have historical roots from approximately a century of colonial history in Aklavik. Multivocal ethnography can contribute to epidemiological analyses by adding a broader historical, geographic, and political context to our understandings of contemporary health inequities and facilitating cross-cultural understandings of different ways of knowing and responding to the perceived risks of *H. pylori* infection. Developing collaborative, multifaceted understandings should be useful for the AHPP’s ongoing knowledge translation component, and consensus truths can be built collaboratively between outside researchers and indigenous Arctic communities as these groups work together in an ongoing, and community-driven, research project.

DENDROCHRONOLOGY ON THE KENAI PENINSULA, ALASKA: DATING HISTORIC STRUCTURES USING TREE-RING ANALYSIS

Tiffany Curtis

Master’s thesis, 2013, Department of Anthropology, University
of Alaska Anchorage

ABSTRACT

In an effort to better understand key events in the EuroAmerican settlement of the Kenai Peninsula, the remains of wooden structures found within the Kenai National Wildlife Refuge boundaries were dated using

dendrochronology. Events such as the fur trade, gold mining, homesteading, and settlement patterns across the peninsula were examined using dendrochronological analysis coupled with ethnohistoric accounts. Samples from fifty-five structures were analysed, with construction dates estimated for forty-two of them using both COFECHA and CDendro statistical analysis software. A multimodal distribution of construction activity was reflected by the tree-ring date frequency. The first peak occurred at the beginning of the American Period, circa 1870. The second peak occurred during the Gold Rush/Homesteading Period that began at the turn of the twentieth century, circa 1897–1915. The third and largest peak coincided with the Great Depression, which brought people into the region possibly to create better lives for themselves and their families. A final small peak coincides with Alaska statehood. Settlement patterns shifted during these periods from a concentration in the south around Lake Tustumena to more remote regions along water transportation routes and along modern transportation corridors with the establishment of railways and the Sterling Highway.

TAPHONOMIC ANALYSIS OF FISH REMAINS FROM THE MINK ISLAND SITE (XMK-030): IMPLICATIONS FOR ZOOARCHAEOLOGICAL AND STABLE ISOTOPIC RESEARCH

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Ph.D. dissertation, 2013, Department of Anthropology,
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ABSTRACT

This dissertation is focused on shedding the taphonomic overprint at the Mink Island site (XMK-030) to assess temporal variability of the fish bone assemblage and to establish sample selection criteria for stable isotope ($\delta^{15}\text{N}$, $\delta^{13}\text{C}$) analysis. These retrospective data may be used to identify the causes and consequences of long-term variability in local fish assemblages when combined with modern fisheries and paleoceanographic data. To use these data, it is essential to account for the effects of biostratinomic and diagenic agents. Intertaxa and interelemental differences in bone density, shape, size, protein, and lipid content result in differing preservation and contamination potential. Without mitigating for the effects of these biostratinomic and diagenic agents, temporal changes in abundance may

be skewed in favor of skeletal elements that best survive destruction. Moreover, stable isotope values may reflect differences in preservation and contamination rather than variability in ecosystem structure and function.

The results of several experiments conducted to assess preservation and contamination levels of Mink Island fish bones revealed that:

1. preservation and contamination potential are linked with completeness percentages and burial duration, but not with bone volume density;
2. Pacific cod dentaries that are intact, unburned, and free of visible contaminants are best suited for stable isotope analysis;
3. the modified Bell pretreatment method is validated for archaeological fish bones; and
4. because color-affecting contaminants cannot be removed without heat, color-based methods are unsuitable for assessing the cooking/burning stage of archaeological fish bones.

Interactions among humans and fishes at Mink Island were assessed using a four-stage resource depression and intensification model. The Mink Island occupants shifted their focus from small flatfishes during Stage I (7500–4500 cal BP), to Pacific cod and sculpins during Stages II (4500–2800 cal BP) and III (2800–900 cal BP), to a mixture of taxa (sculpins, cods, herring, and salmon) during Stage IV (900–400 cal BP). A decrease in Pacific cod fork lengths indicates that resource depression occurred during Stage II. Taxonomic proportion, evenness, salmon index, and skeletal element representation data demonstrate that salmon intensification did not occur during any stage at Mink Island.

NEVER ALONE: NARRATIVES OF SPIRITS IN AN ALASKAN YUP'IK COMMUNITY

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Ph.D. thesis, 2013, Department of Anthropology, University
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ABSTRACT

This thesis examines the meaning and use of narratives of spirits in the settlement of Scammon Bay, a Central Yup'ik community of about 500 people on the southwestern shore of the Bering Sea in Alaska. During my ethnographic fieldwork in the settlement from 2007 to 2010, I learned that the majority of villagers over three years

old routinely tell and listen to stories about spirits to interact, build relationships, and engage with their nonhuman neighbours. I contend that Scammon Bay people's narratives of spirits make powerful statements about the well-being of, and disorder in, the world. These stories illustrate how spirits are responsive beings who are part of Scammon Bay's sentient environment. I argue that they are aware of, and reactive to, human actions and people's moral failings. Most residents consider telling and listening to stories about their nonhuman neighbours an empowering act through which they shape the behaviour of themselves and those around them, while indirectly commenting on their own experiences within the settlement's history of colonial domination. I hypothesise that narratives of spirits provide healing measures for community members by offering a means to articulate their modern-day social ills in a nondisruptive fashion, thus strengthening Yupiit's resilience in circumstances of rapid social change. By analysing the connection between storytelling and culture change, this thesis explores the ways that the people of Scammon Bay use narratives of spirits to find meaning, understanding, and hope in their lives.

REVIEW

KEYSTONE NATIONS: INDIGENOUS PEOPLES AND SALMON ACROSS THE NORTH PACIFIC

Edited by Benedict J. Colombi and James F. Brooks, 2012. School for Advanced Research, Santa Fe, NM. Paper, 305 pages, photos, line drawings, maps, tables, index. ISBN 978-1-934691-90-8; \$34.95.

Reviewed by Catherine F. West

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Colombi and Brooks' edited volume, *Keystone Nations: Indigenous Peoples and Salmon across the North Pacific*, is an impressive and thoughtful collection of case studies drawn from a seminar at the School for Advanced Research (SAR). This diverse group of ethnographers came together to explore the relationships between indigenous people and salmon along the North Pacific coastline from the Russian Far East to the Columbia River basin. The authors represent an array of geographic and theoretical perspectives, which the editors assemble in this 2012 publication to illustrate the variability and complexity of human-salmon relationships.

To frame the case studies, which derive from the Russian Far East, coastal Alaska, and the North American Northwest, introductory and concluding chapters reflect on the individual contributions and the volume's overarching themes. In the introductory chapter, Courtland L. Smith presents agricultural metaphors—such as harvesting, culturing, and farming—as a way to understand both how capture fisheries in this region have changed historically and the complex relationships among indigenous people, commercial industry, market economies, and common resources. In her complementary concluding essay, Marianne Elisabeth Lien does not simply summarize or generalize about the work, but asks how the ethnographies presented in this volume “may challenge our assumptions about both salmon and indigeneity, and [guide us to] look for differences rather than for generalizing traits” (p. 239). She emphasizes the blurred line between “culture” and “nature” in these communities and argues that the diver-

sity in human-salmon relationships presented in this volume should be a caution against generalizing approaches to salmon management across this region.

The essays themselves draw on a broad range of case studies to address a few central themes, which are laid out by the editors in the preface: (a) indigenous histories and knowledge systems; (b) the global economy; (c) policy, sovereignty, and co-management; and (d) emerging contemporary issues. From these themes, the authors are able to use ethnographic and historic data to deduce threats to both indigenous cultures and salmon, which are intermeshed in biological and political spheres. By examining the role that salmon play as a keystone species in a variety of North Pacific ecosystems and communities, including the Nivkhi, Itelmen, Koryak, Aleut (Unangax), Sugpiat, Gitxaala, and Nimiipuu, and the position of these communities in larger political, social, and economic contexts, this collection offers a fresh and innovative perspective of North Pacific fisheries.

All of the authors in this volume place contemporary indigenous people in a historical context in an effort to understand how social, political, and economic changes have influenced traditional fishing activities and the symbolic importance of the salmon. In Kamchatka, according to Koester (Chapter 3), there has been a resurgence of the deep connection between Itelmen identity and salmon, though both Kasten (Chapter 4) and Sharakhmatova (Chapter 5) find that many of Kamchatka's communities are limited by poor economic and political conditions that make inserting traditional lifeways and identities

into the Russian market economy extremely difficult. As several of the papers illustrate, indigenous communities grapple with balancing traditional lifeways, community sustainability, and the global economy. Wilson (Chapter 2) addresses the tension between protecting the Nivkhi salmon fishery and Sakhalin's offshore oil and gas development, while Reedy-Maschner (Chapter 6) and Carothers (Chapter 7) both emphasize the "entangled" and changing nature of Alaska's Aleut (Unangax) and Sugpiaq relationships with salmon, salmon fishing, and the global economy. Like the Nimiipuu described by Colombi (Chapter 9), as these groups change economically, socially, and politically to adapt to global influences, their identities remain firmly rooted in salmon fishing. Several essays emphasize that indigenous people are not passive players but rather active participants in the discussions about and changes made to the salmon fishery (Carothers, Chapter 7; Reedy-Maschner, Chapter 6; Wilson, Chapter 2). Menzies (Chapter 8) takes an ecological perspective and acknowledges that the environment in British Columbia's Gitxaana territory reflects deliberate, long-term human influence.

While analyzing the role of Nimiipuu and Columbia River tribes in a global, capitalist context, both Colombi (Chapter 9) and Diver (Chapter 10) address the power of fisheries co-management in these communities. These chapters give us a glimpse of the "alternative future" that is possible in this region if indigenous groups draw on their sovereignty, experience, and values and if potential partners are willing to engage in open dialogue that acknowledges tensions and makes room for indigenous voices.

The broad geographic scope of *Keystone Nations* will appeal to scholars working in anthropological or resource management contexts across this region, and its themes

are applicable in a global context. One of the strengths of this volume is that it offers a view across the North Pacific, an area that is bound by the salmon resource. It is valuable to see the commonalities in these chapters, the strength of indigenous identities, and the fundamental challenges to the salmon fishery across this region. However, the authors of these case studies make it clear that each indigenous community has a unique historical trajectory and has adapted to political and economic pressures in its own way, which suggests that the future of salmon management will vary across the region. The second great strength of this volume is that it takes a historical perspective, driven by theory and supported by ethnographic data, to consider the significance of emerging contemporary concerns. This perspective is increasingly important in discussions of North Pacific resource management (e.g., Braje and Rick 2011; Moss and Cannon 2011) and, as Lien argues in the concluding chapter, we must understand the history of the salmon's cultural context to understand why this fish is relevant and how it must be regulated. To expand on this valuable contribution, the editors promise a second volume that addresses the complexities of management practices and policies and imagines "alternative futures" (Colombi and Brooks, preface).

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REVIEW

THE ALUTIIQ ORTHOGRAPHY: KODIAK DIALECT

April G. L. Counciller and Jeff Leer, 2012. Anchorage, AK: Alutiiq Heritage Foundation.

Paper and ebook, 98 pages, photos, maps, tables, appendices, index. ISBN 978-1-929650-09-5. Available for free download at <http://www.alutiiqmuseum.org>.

Reviewed by Anna Berge

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The *Alutiiq Orthography* provides a detailed explanation of the orthographic conventions and rules for the representation of the Alutiiq language, a Yupik language spoken in the central gulf coast of Alaska. The creation of the orthography has taken a number of decades and undergone several incarnations. Rapid language shift to English during this time has resulted in a steady decline in the knowledge of language features that might otherwise be taken for granted when teaching literacy. The need for a definitive orthography together with an accompanying explanation of the orthography is therefore critical. This book clearly fulfills this need.

To understand the importance of this book, as well as decisions made in the development of the orthography, it is necessary to understand the history of literacy development and language endangerment in Alaska. Orthographies for a number of Alaska languages, including Alutiiq, were variously developed by missionaries, ethnographers, linguists, and explorers, although few of these had widespread and lasting effects. From the 1960s, collaborative work between the Alaska Native Language Center and speaker communities resulted in the development of orthographies for most of the Alaska Native languages, including the Yupik languages. Several considerations played an important role in these orthographies. The avoidance of special characters was driven by the relative ease with which characters could be typed. Orthographies were created to reflect morphophonological rules, resulting in a level of detail not always consistently found in writing systems; thus, the use of the

apostrophe to reflect syllable structure or gemination, or the representation of morphophonologically dependent changes in vowel length (cf. the underspecification of the pronunciation of the English plural morpheme *-s*, sometimes written *-s* and sometimes *-es* but never written *-z*). In addition, Yupik languages have particularly complex prosodic systems. Of these, Alutiiq prosody is the most complex. In much the same way that the representation of tone has been problematic in certain tonal languages, prosody has represented a challenge for Yupik writing systems. Alutiiq orthography encodes prosodic information that affects pronunciation through conventions such as the apostrophe (cf. Russian orthography, with encoding such as accent marks used for beginning language learners only).

The development of the Alutiiq orthography has taken place within this context. From the early 1970s, there have been several versions of the orthography, reflecting pronunciation changes resulting from rapid language change, a growing understanding of the intricacies of the phonological and prosodic systems, and a shift in technology from the typewriter to the computer. The current orthography represents years of work involving the active participation of elders, language teachers, language learners, and linguists. It has involved consensus on difficult issues. For example, orthographic conventions are often based on one particular dialect of a language; the attempt here is to create an orthography that is adaptable yet consistent—hence references to, for example, similarities or differences of Kodiak Alutiiq with the Chugach dialect.

The consensus on the orthography and the acceptance thereof is vital since the Alutiiq language is currently severely endangered, with fewer than fifty first language speakers of the Kodiak dialect, many of whom are elderly. Lack of speakers, teacher training, and language learning materials are all challenges to language revitalization efforts; the latter two are greatly improved by an established literacy program. This book, therefore, is prepared primarily for the combination of audiences most directly engaged in language revitalization, namely language teachers in training and language learners, and secondarily for non-community members such as linguists or other interested readers. Previous experience in teaching the language has highlighted areas of difficulty, and this has guided the development and presentation of the material in the *Alutiiq Orthography*, particularly in the explanation of syllable structure and prosody.

After a brief introduction explaining some of the principles guiding the development of the Alutiiq orthography, the participants, the intended users and uses, and some notes on dialect variation, the book is organized in somewhat self-contained chapters with copious references to other chapters as needed; these in turn are grouped in three parts, each of which builds on the previous part. Part I focuses on the alphabet and the sound system. Part II focuses on the complexities of syllabification in Alutiiq, including complications resulting from morphophonological processes such as the gemination or the dropping of sounds, and the orthographic choices made for representing these processes. Part III guides the learner through the processes needed to determine the proper prosodic reading of a word and explains the use of the nonalphabetic symbols, the apostrophe and hyphen. Part III also contains discussions of decisions made regarding the representation of Russian and English loanwords, a summary of the changes between this and previous recent orthographies of Alutiiq,

and a summary of the rules discussed in the book. There are several helpful appendices, a glossary, and an index.

The book is well organized, with copious examples, excellent references to other sections, helpful chapter summaries, and useful charts of older orthographies, and it is for the most part very readable. It could be improved by more clearly identifying the readership for which it is prepared. The authors state that it is primarily for people with linguistic training or with exposure to the language; however, these are often two very different groups of people with very different needs. Linguistic terminology is unevenly defined and less precise than needed for a linguist, while often unnecessarily technical for non-linguists. Likewise, expanding the discussion of dialectal differences within Alutiiq and Kodiak Alutiiq that are specifically relevant to the orthographical conventions would be helpful.

The purpose of the book is to introduce a standard Alutiiq orthography to encourage literacy and language learning; the book should prove invaluable in these efforts. Adhering to standard orthography is good for learners and teachers and helps in creating a common base of understanding of materials. The authors worry about unintentional or undesirable spelling changes, but such changes are bound to happen, as they also point out. Languages change naturally, eventually leading to opacity within the orthographic system (e.g., English). But no orthographic system is without its complications (e.g., the representation of Russian loans in Alutiiq) and difficult orthographies can be learned (e.g., Japanese). Eventually, orthographies can be successfully changed to reflect more modern language use when necessary, as happened in Inuktitut and Greenlandic. For now, the Alutiiq orthography seems ready for use, and *The Alutiiq Orthography* provides the necessary tools to use it. Kudos to all those involved.

REVIEW

WOMEN'S WORK, WOMEN'S ART: NINETEENTH-CENTURY NORTHERN ATHAPASKAN CLOTHING

Judy Thompson, 2013. McGill-Queen's Native and Northern Studies Series no. 68. McGill-Queen's University Press, Montreal. Paper, 307 pages, photos, line drawings, maps, index. ISBN 978-0-773541-59-7; \$59.95.

Reviewed by William E. Simeone

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Northern Athapaskan clothing is largely an unfamiliar subject. Northern Indians are seldom, if ever, seen in movies and have never, as far as I know, been photographed by Edward Curtis. Descriptions of Northern Athapaskans in aboriginal dress are scattered in obscure journals, academic monographs, and museum catalogs. Examples of clothing are found in museums spread around the world: some of the oldest in Finland and Russia. A Plains Indian chief in an eagle-feathered head-dress is a relatively common sight. Few, though, have seen a Northern Athapaskan chief in caribou skin tunic decorated with porcupine quills and smeared with red ocher, his ears and nose pierced, and his long hair parted in the middle, each lock rubbed with grease and red ocher, so that each strand was about the size of a finger, then gathered behind his head with a band of dentalium shells and powdered with swan's down.

Well, no one should have to wonder about Northern Athapaskan clothing again. Judy Thompson has compiled practically every conceivable reference to this topic, producing a model publication that combines lavish illustrations with detailed garment research and historical and ethnographic data. My favorite image, "Rat Indian[s] of Russian America drawn by themselves," shows a man with a huge head of hair and pierced nose and ears. Thompson focuses on clothing made and collected in the nineteenth century, although there are references to earlier and later times. Her stated goals are to bring attention to the central importance of women in the production of clothing; describe in detail technology, design, and decoration of

major nineteenth-century clothing styles; and reconstruct traditions in dress and self-adornment specific to particular Northern Athapaskan groups.

There are four chapters, an epilogue, and appendix. Chapter 1 provides an overview of traditional life and the importance of clothing in Northern Athapaskan culture. Prior to contact, Northern Athapaskans wore skin garments that covered them from head to toe summer and winter; painted and tattooed their faces; applied grease, ocher, beads, and feathers to their hair; and wore earrings, bracelets, and necklaces made from bones, beads, and shells. Clothing and personal adornment denoted social status or relations between individuals, and a person and his or her clothes were intimately connected. A piece of clothing could be manipulated to cause harm, predict the future, or cure illness.

Beginning in the nineteenth century, Northern Athapaskans began to transform their personal appearance as they became absorbed into the fur trade. Thompson identifies four trends in this transformation. First, old styles and materials, especially winter clothing, were often retained well into the twentieth century by older people, poor people, and those living more remotely. Second, people quickly abandoned traditional styles of personal adornment. Third, people adopted clothing cut along European patterns and made with foreign materials; and fourth, they developed totally new aboriginal styles combining new materials and designs. These include mocasins, coats, and dresses made from smoke-tanned hides and decorated with floral beaded patterns.

In Chapter 2, Thompson provides a how-to guide to the production of Athapaskan clothing. Traditionally this was a woman's domain. They prepared the hides, cut and sewed the garments, and added decoration. Women were judged on their sewing skills. In Upper Tanana culture, for example, a woman sewing with large stitches was called "rabbit woman" while one using finer stitches was "mouse woman." The latter was considered a good woman who would make money with her fine stitches.

Clothing was made from a wide variety of materials. Caribou skins were probably the most common, but clothing was also made from skins of hare, marmot, ground squirrel, mountain sheep, moose, salmon (used to make waterproof boots), and bear (including bear intestines made into rain gear). The use of bird skins was considered a sign of poverty in some groups. Sinew was used to stitch the clothing together, while bone, antler, claws, hooves, and teeth provided materials for tools, such as sewing awls and fleshing tools, and for decoration. Plant materials, such as rotten wood, were used to smoke skins, while bark was used to dye both skins and porcupine quills. Ochres were mixed with water and grease and applied to all variety of things, including clothing, bows, faces, and snowshoes. Prior to contact with Europeans most clothing was decorated with porcupine quills, and Thompson illustrates the variety of techniques used in quill decoration.

Tanning large skins from caribou and moose was a grueling process requiring considerable physical labor, know-how, and cooperation. Over a period of weeks or months hides had to be scraped, washed, soaked, and then softened with more scraping. Brain matter from caribou or moose, which coated and lubricated the hide protect-

ing it from water damage, decay, and stiffening, was an essential ingredient in the process. Sometimes hides were lightly smoked. The final product was something as soft as the supplest felt.

In Chapter 3, Thompson describes major clothing styles and analyzes and illustrates design elements. Northern Athapaskan clothing was designed for easy movement but maximum coverage against the cold in winter and hordes of mosquitos in the summer. Summer outfits came with gloves and a hood. Trousers had the feet attached so there was no opening for drafts or insects. Most summer clothing was made from tanned caribou hides with the hair removed. Winter clothes were cut similar to summer clothes but with the fur on. Thompson describes some of the most widespread fashions, beginning with tunics cut to a point and moccasin trousers. Two interesting features of these garments are their ubiquity and their sophisticated design. Tunics are three-dimensional. They don't lie flat on a table. The garment is cut with forward movement in mind, and the arms curve out. A fascinating addition to this chapter is the line drawings by Dorothy Burnham illustrating the construction of the clothing.

In the final chapter, Thompson describes dress and adornment traditions for twenty-three Northern Athapaskan groups. Some of the same ground is covered here, leading to a bit of repetition, but the chapter provides a sense of basic similarities in style while pointing out differences in detail. In an epilogue, Thompson closes the circle by describing efforts to pass on or revive traditional knowledge of clothing manufacture. In sum, Thompson has produced a useful and beautiful book destined to become the standard reference for Northern Athapaskan clothing.

REVIEW

KINGIKMI SIGUM QANUQ ILITAAVUT: WALES IÑUPIAQ SEA ICE DICTIONARY

Compiled by Winton Weyapuk, Jr. and Igor Krupnik, 2012. Arctic Studies Center, Smithsonian Institution, Washington, D.C. Paperback, 112 pages. For copies, contact the Arctic Studies Center at <http://www.mnh.si.edu/arctic/> or 202-633-1889.

Reviewed by April Counciller

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Weyapuk and Krupnik's *Kingikmi Sigum Qanuq Ilitaavut: Wales Iñupiaq Sea Ice Dictionary* was created to aid an Iñupiaq community to retain terminology used by generations of hunters and travelers. This truly collaborative project involved Iñupiaq elders, whalers, and community scientists along with professional linguists and anthropologists in a multiyear effort. Endorsed by the Native Village of Wales, the project received funding from the National Park Service's Shared Beringian Heritage Program, as well as the Smithsonian's Arctic Studies Center and the National Museum of Natural History, among others. This initiative was part of the larger Sea Ice Knowledge and Use (SIKU) project, in which scientists and indigenous communities from six nations were tasked with documenting sea ice terms in local languages and dialects.

The SIKU project takes place in a context of declining Native language use for many Alaska communities. As Weyapuk describes, language shift to English began with the introduction of new items into the daily lives of the Kinikmiut (people of Wales). Over time, English "gradually encroached upon and began replacing Iñupiaq as the...fundamental language" (p. 8). Rather than being used solely for word borrowings relating to modern life and western items, English has become the *lingua franca* for most community and home communication. This process has progressed until younger generations can sometimes understand few Iñupiaq environmental terms, despite the inexactness of the English language in describing the environmental conditions and dangers faced when hunting or traveling.

Endangered language communities faced with language shift often initiate terminology development to address lexical gaps, reduce the need for borrowing, and enhance the relevance of the heritage language in the lives of potential young speakers (Kimura and Counciller 2009). Terminology development has been primarily defined as new words creation, but often goes hand-in-hand with language documentation and dissemination of existing, obscure terms. The Alutiiq New Words Council on Kodiak Island, Alaska, has found that in addition to the creation of new words, elders and language learners desired strategic remembering of old words, due to the speed of overall lexical contraction (Counciller 2010). The need to remember old terms is clearly on the forefront for Wales community members, who feel that this information is especially relevant today when climate change creates constantly changing and sometimes hazardous conditions that require detailed observation and description.

While a dictionary is a document that describes the meaning of words, describing *Kingikmi Sigum Qanuq Ilitaavut* as simply a "dictionary" seems limiting. It is more of a topical *encyclopedia* in its comprehensive presentation on sea ice. A focus on the words themselves belies the environmental knowledge embedded in the language and the strong connection to visual cues and observation needed to accurately use these terms. Sections of the book are devoted to alphabetical listings of sea ice vocabulary, sea ice categories (organized by season, location, and function), annotated photographs of ice scenes and conditions (historical and contemporary), and essays, all of which

emphasize the importance and relevance of sea ice terms and knowledge. By mastering the words as well as the cultural environmental expertise embedded within them, younger generations of community members have greater tools to survive and thrive on the ice, even as it changes.

Although Weyapuk and Krupnik state that this book alone cannot help reverse Inuit language shift in Wales, it can be one of many tools used by the community towards language survival. This project and publication fit within *status planning* (Cooper 1989), a type of language planning affecting the functions and community spaces where a language is used, i.e., in hunting, traveling, and relating narratives of subsistence. The greater number of settings and functions where a language is the primary mode of communication, the greater the odds that language will be maintained (Fishman 1991). This is especially true when zones of language use involve families, the “nexus of intergenerational mother tongue transmission” (Fishman 1991:67). Although the presence of English is acknowledged as irreversible in today’s Alaska communities, *Kingikmi Sigum Qanuq Ilitaavut* demonstrates that a space can be carved out of the ice for the continued relevance of the Inuit language.

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REVIEW

LAND OF EXTREMES:

A NATURAL HISTORY OF THE ARCTIC NORTH SLOPE OF ALASKA

Alex Huryn and John Hobbie, 2012. University of Alaska Press, Fairbanks. Paper and ebook, 336 pages, photos, maps, index. ISBN 978-1-60223-181-8; \$29.95

Reviewed by Anne M. Jensen

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According to the preface, this book was written as a guide for people visiting the North Slope of Alaska. The authors' intent was to cover the entire North Slope, from Barrow to the Brooks Range, providing information on all aspects of the area's natural history in a format suited to the interested layperson. They do this extremely well for the Dalton Highway, but they do not fully address the remainder of the North Slope.

The book's organization is logical and easy to follow. The introductory chapter identifies concepts and provides Arctic-related definitions, leading into the rest of the book, which takes the reader on a North Slope tour from ground level up. The next three chapters cover geology: bedrock and glacial geology and permafrost phenomena. The fifth chapter reviews the three main physiographic provinces on the North Slope and ecological habitats associated with each.

The next four chapters focus on the plant kingdom. The mushrooms, lichens, mosses, and liverworts receive brief coverage, with the chapter on vascular plants being much longer. This makes sense, since most readers are more likely to notice and be interested in vascular plants.

Coverage of the animal kingdom begins with an extensive chapter on invertebrates, which is not surprising given the number of insects that any summer visitor to the North Slope will encounter. The illustrations are excellent, as is the explanation of freeze tolerance versus freeze avoidance. The next chapter covers fish. The authors concentrate on freshwater fish, with a focus on the fourteen species that are most widespread on the North Slope. This is followed by a one-page chapter on reptiles and amphibians. Since the only currently living member of these classes found on the North Slope is the wood frog, which occasionally makes an appearance, half of the chapter deals

with prehistoric reptiles. These arctic dinosaurs are quite interesting and their story is still unfolding. Many readers will wish to learn more about them.

Chapter 13 considers birds. The authors begin by stating that over 150 species of birds visit the North Slope annually. While this is technically correct, it seems conservative, since the standard species checklist for Barrow lists 185 species. This chapter shows the Dalton Highway corridor bias. Numerous bird species are pictured, often showing both sexes in multiple color phases and age classes. The eiders, though, are underrepresented, with only a single picture of two species, omitting the Steller's and common eider entirely. The only gulls referred to are those "common in inland habitats of the North Slope" (p. 191). Guillemots, which have been much in the public eye due to George Divoky's decades of study (including a *New York Times* magazine cover story in 2002), are omitted entirely, as are other coastal birds such as puffins.

In chapter 14, the authors discuss mammals. This chapter is especially good, although the choice of caribou and red fox as common megafauna of the North Slope seems odd, given the presence of moose, muskoxen, and wolves and the rather small size of red fox. Huryn and Hobbie do a good job of explaining lemming population cycles, a phenomenon that often confuses the general public. Their coverage of muskoxen is interesting. They speak of the eastern North Slope muskox herd as a true conservation success, while noting that the herd was reduced to less than half its former size by 2007–2008. They describe this as unexplained, although there seems to be considerable evidence that it was due at least in part to hunting by grizzly bears (Reynolds et al. 2002), a few of which had figured out that even in a herd muskoxen can be vulnerable.

The final chapter purports to describe the “prehistory” of humans on the North Slope from arrival through the middle of the twentieth century. Here things fall apart. Under any common definition, “prehistory” cannot be said to extend past the latter part of the nineteenth century on the North Slope. The discussion of dates is confusing. The authors state that all dates are given in calendar years, and then proceed to give all dates but those for Kavik and Neoeskimo as BP dates. I believe that these are calibrated radiocarbon dates, which for some reason they presented as BP rather than the conventional BC/AD for calibrated calendar year dates.

The authors decide to focus only on archaeological sites near the Dalton Highway, in order to “simplify a rich and complex prehistory” (p. 243). This led them to omit the precontact history of almost all current North Slope residents. They cover the Paleoindian tradition in two and a half pages, while the Arctic Small Tool tradition receives only half a page. The Maritime Eskimo (Birnikr, Thule, and Inupiat) are well covered, occupying over three pages. However, the coastal manifestation of this group receives only three sentences, despite far outnumbering inland dwellers at all periods, including the present. The rest of this section is devoted to the Nunamiut. The description of the Nunamuit is a good one, and the work of Simon Paneak is well described, although none of his publications are cited in the chapter bibliography. Had this book covered the Dalton Highway corridor instead of the North Slope, this chapter would have been a reasonable summary for a general book aimed at people traveling the road.

Given that the North Slope of Alaska is the size of the state of Minnesota, producing a natural history for laypersons in a size suitable for travelers is no mean feat. In most respects, this volume achieves its goal. In general the information presented seems accurate, although this reviewer was startled by the statement (p. 44) that the Inaru River only flows during spring snowmelt, since in her experience it sees boat traffic during the entire open water season and is too strong and deep to ford in most places. However, the authors have done the majority of their research on the North Slope in a relatively narrow area on either side of the Dalton Highway, between the Brooks Range and the Beaufort Sea. At times, they write as if the conditions that are typical in this region are typical across the North Slope. For example (p. 31), they state the plant biomass is between 160–370 g/m³ near the coast. From the map on the next page this is true near Prudhoe Bay, but in most areas where there are currently villages the map shows a

higher biomass of 370–850 g/m³. At times, I felt as if the volume might more appropriately have been titled “The Natural History of the Dalton Highway Corridor.”

The highway corridor bias is also apparent in the illustrations. With the exception of a couple of satellite images of Teshekpuk (Tasiqpaq) Lake and some images of lemmings taken near Barrow, almost every image in the book is from Toolik Field Station, Atigun Pass/Gorge, Galbraith Lake, the Ivishak River, the Kuparuk River, Happy Valley, Oksrukuyik Creek, or various locations along the Dalton Highway. Even the picture of a polar bear, a marine mammal who visits land near the coast on a very sporadic basis, is one of a very anomalous individual taken at milepost 297 of the Dalton Highway.

While the authors have an impressive photographic collection, one wishes that they had used more images borrowed from others who have worked in the area. In too many cases, the photographs are not particularly good or representative, and the general reader might have been better served with other images. For example, the winter arctic fox pictured has a number of atypical black patches and is a poor specimen of this beautiful animal. Additionally, the layout of the images is not always logical, with images sometimes separated from the text by several pages. This may be an unavoidable function of limiting the number of printed color pages, but it doesn’t make for easy reference while reading.

A more serious problem with the images relates to the maps. The last part of the book is essentially a driving tour of the Dalton Highway from Atigun Pass to Deadhorse, with references to numbers on three accompanying maps. The maps are a bit small, and it might have been better to split the area into five or six maps at a larger scale. More importantly, at least in the review copy, the first of the maps (covering the southern end of the Dalton Highway from Atigun Pass to Galbraith Lake) was replaced by a duplicate of the second map. The driving guide looks like it would be quite useful for anyone planning to drive the Dalton Highway. I would suggest it for that use. If one wants to understand human occupation on the North Slope, there are better sources of information.

REFERENCE

- Reynolds, Patricia E., Harry V. Reynolds, and Richard T. Shideler
2002 Predation and Multiple Kills of Muskoxen by Grizzly Bears. *Ursus* 13:79–84.