

NOTES FROM THE DIRECTOR

By William W. Fitzhugh

Settling in after COVID-19 turned the past year into a learning experience we had not imagined. Nancy Shorey and I returned to find most colleagues working from home more than in their offices, meetings and most lectures and events hybrid, and there were many changes in administrative procedures—usually ever more remote and complicated. Nevertheless, those

of us in the Recovering Voices, Asia, and Arctic programs chugged on and had an interesting and productive year. Highlights at the Museum include a year under the Department chairmanship of **Rick Potts**, who turned over the reins to **Josh Bell** in January '24; the retirements of **Laurie Burgess** and **Bill Billeck**; and appointments of **Dorothy Lippert** as head of the Repatriation Office and **Celia Emmelhainz** as head of NAA/Archives, and **Matt Sanger** and **Marissa Shaver** joined the Repatriation Office as Tribal Liaison officers; however, losses to curator ranks continue.

Museum Anthropology—and museums in general—are facing major challenges that have been accelerated by the brooding surge emerging from covid. National discussions about the stewardship of collections and institutional responsibilities to interest groups and descendant communities, ranging far beyond issues of graves and sacred objects, are engaging museum curators and collection managers, stimulating changes in policy and regulations. Community engagement is felt at every level of museum life. New DOI and NPS regulations might require community approval before displaying or researching an arrowhead or potsherd. At

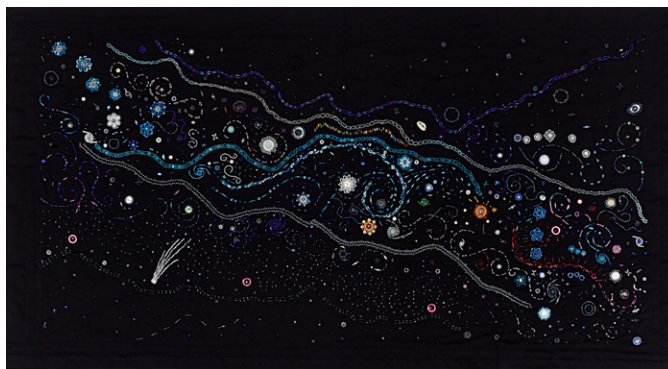
the ASC, we are fortunate that our Alaska Office has grown in step with changing museum responsibilities for access and education, with strong support from the Department, Museum, Repatriation, and Recovering Voices. But the relentless squeeze on research and collection management is a trend that will certainly increase.

Despite custodial complications, the ASC has enjoyed success in its research and education work. Our

Narwhal and Boreal Forest (Understanding Nature: Stories of the Boreal Forest) exhibits continue to travel in North America with S.I.T.E.S., and *Lights Out: Recovering Our Night Sky* opened to great acclaim in March with major input from **Stephen Loring**. We held a lively bow and arrow workshop organized with **Brendan Griebel** and members of the Kitikmeot Heritage Society of Cambridge Bay, Nunavut, with technical support from bow and arrow expert **Coline**

Lemaitre, who has been on a pre-doc fellowship with the ASC. In October, **Ted Timreck** presented his epic documentary, *Ancient Sea Peoples of the North Atlantic* in our Q?rius Theater, and in late November, **April Counciller**, Director of the Alutiiq Museum in Kodiak, Alaska, was the speaker for our annual **Ernest S. Burch** Lecture.

On the research front, I completed my last field season of the 23-year Quebec St. Lawrence Gateways project, excavating a small 16th century Basque whaling station in St. Paul River. This coincided with the decision to retire the *R.V. Pitsiulak*, our trusty partner on countless northern expeditions in Labrador, Baffin Island, and Quebec. Her decommissioning coincided with the passing of **Stearns (Tony) Morse**, who gifted the



Beaded artwork from the NMNH "Lights Out" exhibit: Milky Way, Starry Night #2 by Margaret Nazon, Gwich'in Tsiigehtchic, Northwest Territories, Canada. (NMNH-2023-00127-S; read more in Stephen Loring's Lights Out exhibit report. Photo by P.R. Lee, B.M. Hance, and J. Di Loreto)

vessel to the Smithsonian following the conclusion of his Labrador geological research. This year I published my Mongolian deer stone monograph, began preparing a monograph on the archaeology of the Mongolian Altai, and returned most of my remaining archaeological collections to Newfoundland.

For **Stephen Loring**, the exhibit *Lights Out: Recovering the Night Sky* brought a rewarding parade of media interest that had the exhibit team much in demand. Prior to a stint of fieldwork with Innu colleagues and associates in Labrador, he produced reports on past research projects and collections from the Aleutians, New England and Labrador, Tł̥ch̥q̥ (Dog Rib) ethnohistory, and new collection acquisitions. Stephen was honored by an invitation to join the External Advisory Council of the Center for Braiding Indigenous Knowledge and Science (CBIKS), a University of Massachusetts, Amherst group funded by the NSF, to “braid together Indigenous and western science to address the urgent and interconnected issues of climate change, care of cultural places, and food security”.

Dawn Biddison produced a booklet, DVDs, 15 videos, and a Smithsonian Learning Lab website for the *Batuk'enelyashi: Natural Dyes from Dena'ina Lands* project in collaboration with the Alaska Native Heritage Center and **June Simeonoff Pardue**. In January, with an Ahtna group she researched NMNH and NMAI collections for *Coming Home: Reclaiming Ahtna Knowledge through Museum Collections*. The project inspired an Ahtna symposium and research training documenting Ahtna Heritage. Dawn also created *Making Connections: Athabascan Lifeways and You* with Ahtna colleagues.

Aron Crowell completed a regional review of southern Alaskan archaeology demonstrating repeated (pulse) migrations by the Chugach (Sugpiat) between Kachemak Bay, the Kenai Peninsula, and Prince William Sound, correlated with warm and cool phases of the Pacific Decadal Oscillation. His Yakutat monograph, *Laaxaayik, Near the Glacier: Indigenous*

History and Ecology at Yakutat Fiord, Alaska, appeared in April 2024. With ‘Life on a Sustainable Planet’ funding, Aron continued isotopic and archaeofaunal research on a 7,400-year record of climate and ecosystem change in the Gulf of Alaska, and as ASC co-PI participated in science education projects in Alaska and Washington, D.C.

Another important outreach project was my collaboration with **Igor Chechushkov** that produced an archaeological webinar series titled “*Crossroads-2*” following in the footsteps of the ASC’s 1980s pioneering Russian-American exhibition. Seven lectures were conducted in 2023, translated into Russian, and broadcast through public media channels to Russian-language countries. The series continues in 2024 and may be extended into 2025.

Elisa Palomino continued her fish skin peregrinations in European and Turkish museums. With **John Cloud**, she researched ancient fish demi-gods in what is now Turkey, Syria, and Iraq, in connection with the circa 9,000 BC ceremonial site of Gobekli Tepe, exploring assertions made by **Graeber** and **Wengrow** in *The Dawn of Everything: A New History of Humanity* (2021). Closer to home, Cloud published “*Le Rendez-Vous de Virginie*” describing the final naval battles of the American Revolutionary War, which led to the surrender of Lord Cornwallis at Yorktown.

Freed from his service as Anthro Department Chair and production of the *Handbook of North American Indians* introductory volume, **Igor Krupnik** began museum projects, focused on historical Arctic ethnographic collections. He has been busy building new international teams, working with Polish colleagues on Stanislaw Poniatowski’s collection at NMNH, and in Wroclaw, Poland, with French colleagues on **Nikolai Gondatti**’s Chukchi collection in Paris, and lately with Norwegian colleagues in Oslo on their collections from the Arctic coast of Northeast Siberia.

I hope you enjoy this issue, which has grown like topsy this year due to expanding programs and scholarly networks.



Khoton Lake in the Mongolian Altai featured in a 2024 ASC publication

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To make a tax-deductible donation, please contact the NMNH Office of Development at 202-633-0821 or NMNH-Advancement@si.edu.

ANNUAL BURCH LECTURE

BURCH ENDOWMENT SUPPORT FOR ASC ACTIVITIES IN 2023

By Igor Krupnik

The Ernest S. ('Tiger') Burch Endowment was established with the NMNH Arctic Studies Center (ASC) in 2012 via the generous gift of the family of our late colleague and long-term research associate, **Ernest S ('Tiger') Burch, Jr.**, with the aim to support, promote, and interpret the study of Arctic Indigenous peoples and their cultures. The fund ensures that our work and the legacy of Tiger's many decades of collaboration with the Smithsonian and ASC continues. Over the past decade, the Burch Endowment remained the prime source of funding for the ASC operations, in addition to individual research grants, particularly for our collective activities. In 2023, the Endowment continued to provide its critical lifeline to the ASC.

With the softening and then lifting of travel and fieldwork restrictions, the ASC staff was able to resume most of its fieldwork and traveling activities. The Burch Endowment supported Stephen Loring's fieldwork in Labrador and Bill Fitzhugh's work in Newfoundland and Quebec North Shore in the fall and summer of 2023 respectively. It was a key source of travel funds for many of our conference travels, including those covered in this *Newsletter*, like Krupnik and Loring's trip to a conference at the New Bedford Whaling Museum and Dawn Biddison's participation in the annual meeting of the Association of Tribal Archives, Libraries, and Museums (ATALM) in Oklahoma City OK, in October 2023.

As in the previous years, the Endowment supported our main public event, "Tiger Burch annual lecture" that helps promote our activities at the broader NMNH, Smithsonian, and outside professional arenas. The annual 'Burch Lectures' began in 2015 to feature recent achievements in Arctic anthropological research to wider audiences and to our colleagues worldwide. We now have an impressive and diverse pool of the former speakers ('Burch alumni') that includes academic and Indigenous scholars from US/Alaska, Canada, and Greenland. Collectively, their lectures covered advances in archaeology, ethnology, Arctic resource management, biology, history, collection and Indigenous heritage, women's studies, and more.

Our 2023 Burch Speaker was Dr. **April Laktonen Counciller**, Executive Director of the Alutiiq Museum in Kodiak, Alaska. Dr. Counciller is an Alutiiq tribal member, who grew up in the community of Larson Bay and in the town of Kodiak, on Kodiak Island. She

began working at the Alutiiq Museum as a college intern and then returned to the museum to lead its educational and language departments, and to work to preserve, document, and teach the Alutiiq language, after earning her BA in Anthropology at Brown University (2002) and M.A. in Rural Development at the University of Alaska Fairbanks (2005). In 2010, she received her Ph.D. degree in Language Planning and Indigenous Knowledge Systems at the University of Alaska Fairbanks. April is one of the first people in her generation to gain fluency in the Alutiiq language that also helped her develop the Alutiiq Studies Program at the local Kodiak College. She served as executive director of the Alutiiq Museum since 2015 and was a member of the Alaska Native Language Preservation and Advisory Council in 2012–2022 that provides recommendations and advice to the Governor of Alaska and the State Legislature on programs, policies, and projects related to Indigenous languages. We were particularly interested in sharing April's experience in leading museum-based programs in support of Indigenous heritage, language, and culture with wider audience, including in our own museum.

Besides the Burch Lecture, the Endowment continued to provide funds for many ASC public-focused activities, such as the production, printing, and shipping of the annual ASC Newsletter—of which we produced two issues in 2023: a regular No.30 for 2022 and a special issue dedicated to the career of Bill Fitzhugh, both of 90 pages. It supported contracts for graphic and collection work for the ASC staff, the ASC membership in the Arctic Consortium of the United States (ARCUS), research work on other ASC-based projects, and our staff needs throughout 2023. We plan to continue using Burch Endowment to advance our research and public programs, for conference travel and fieldwork, and for promoting Tiger Burch's legacy to the international Arctic research community via publications, public programs and presentations, annual Newsletter, conferences, and professional exchanges.



April Counciller, Director, Alutiiq Museum, Kodiak

ALLANGALUTA, ALLANGAGKUNATA. WE ARE DIFFERENT, WE ARE NOT DIFFERENT: COMMUNITY RESEARCH IN THE KODIAK ALUTIIQ/SUGPIAQ REGION

By April G.L. Counciller

The Alutiiq Museum is a Native-run nonprofit cultural center and repository in Kodiak, Alaska, and a leader in community-driven research. Throughout the 20th century, Alutiiq/Sugpiaq tribal leaders from the Kodiak Archipelago raised concerns over researchers taking tribal material heritage to far-away museums and universities, while the Native community suffered from cultural disconnection and fading traditions. By the mid-1980s, the Kodiak Area Native Association (KANA) initiated culture and language programs and formed a culture committee to develop funding and plans for a tribal museum. Village bingo games became a source of seed funding for the committee's planning efforts.

The tragic environmental disaster of the 1989 Exxon Valdez Oil Spill resulted in legal settlements that included a fund for restoration. Governed by state and federal trustees, the fund was to support the study and stewardship of oiled resources. Due to the damage to coastal archaeological resources from the spill, as well as site looting during cleanup efforts, KANA successfully argued for funding to build a repository to house archaeological collections from the region. The resulting Alutiiq Museum & Archaeological Repository opened in 1995 with an all-Alutiiq Board of Directors and a staff of three.

Today, the Alutiiq Museum cares for over 250,000 objects and has a staff of twelve. This includes the heart of its holdings—large archaeological collections. It also cares for ethnographic, photographic, audiovisual,

linguistic, archival, and natural history collections. One of the collections that has grown the fastest in recent years are the photographic collections. The museum completed a community photo archive project during the COVID-19 pandemic, which resulted in digitization of over 45,000 photographs from communities

across the archipelago. The majority of Alutiiq Museum collections are on long-term loan from their owners, including Native corporations within our region. Our goal is to act as a community repository for the Alutiiq community, so that cultural objects can be preserved and shared, but not separated from their Native owners. We have also worked to bring collections back to Kodiak by negotiating curation agreements with the U.S. Fish and Wildlife Service, State of Alaska, U.S. Coast Guard, and others.

The collections are accessed by researchers, Native community members, and members of the public. Artists will sometimes look at and sketch ancestral items to serve as inspiration for modern creations. Educators and families like to view the collections as a more in-depth exploration of culture than available in our public exhibits. We have hosted researchers from high school age to

the postgraduate level. Undergraduate and high school internships are sometimes funded by museum partners or agencies and are intended to provide entry into the field for community members and local youth.

Research at the Alutiiq Museum is only sometimes focused on its collections. Some research combines inspection of collections with ethnographic research with community cultural bearers and Elders. Site surveys on the landscape are complimented by naming protocols led by a fluent Elders group. Our staff have been mentored by other scholars in our field, such as archaeologist **Don Clark** and linguist **Jeff Leer**.



Exterior of the Alutiiq Museum facility. Currently under renovation, the museum will reopen in 2025. Photo by Alutiiq Museum



Left: Alutiiq Museum staff member Chyian Heine shares information with visitors of the Mobile Museum at a local event. Photo by Alutiiq Museum



Right: Sydney Pestrikoff from the Native Village of Old Harbor shows her partially-completed beaded headdress during 2023 village workshop. Photo by Alutiiq Museum

When scholars approach us before securing funding for their work, we often help to guide proposal development to enhance fundability, cultural appropriateness, and community benefit. We are also approached to join ongoing projects to enhance community dissemination of research results, develop curriculum based on others research, or collaborate on publications.

It is easy to see the connection between the concerns that led to the museum's founding, and modern research priorities that focus on local control, storage, and access. The Alutiiq Museum archaeology team has been leading community-based investigations from the museum since our inception. Stemming from earlier community-based projects in Karluk and Larsen Bay, the museum's archaeology crews have included community field technicians, local interns, Native corporations, sponsored interns, students at all levels, and whole teams of local volunteers, depending on the location and focus of the excavation.

The key factor that makes the museum's archaeology program "community-based" is not necessarily the composition and inclusion of Native community members in fieldwork. Instead, we consider our archaeology program to be community-based because the archaeological questions are driven by local interests, issues, and needs. Additionally, community-based archaeology as done by the Alutiiq Museum is distinguished by the fact that collections are studied and stored permanently in our local archaeological repository. The entire research process is accessible to the community whose heritage it most closely reflects, from planning to the sharing of results and the storage of data.

Community-based archaeology also allows visiting researchers to gain a more comprehensive understanding of the environment Alutiiq people live in, the culture of the Alutiiq people, and the ways our traditions have changed from the deep past to the 20th century. Many researchers have expressed that interaction with Elders and culture bearers has enriched their understanding of features found in the archaeological record, even when cultural practices have changed over time. Local connections also foster

growth in public understanding of archaeology and support for heritage preservation. This is important, because in the Kodiak Archipelago, there is a long history of recreational "pot hunting" and the sale of artifacts, even in the face of state and federal laws that protect ancient sites. It has been a practice at the Alutiiq Museum to complement archaeological research with public information campaigns about the importance of protecting archaeological sites, and what to do if archaeological materials are encountered on the landscape.



Alutiiq community members assist with a community archaeology dig. Alutiiq Museum curator of archaeology Patrick Saltonstall carries buckets for screening. Photo by Alutiiq Museum

We have been highly fortunate to also have long-term staff members such as **Amy Steffian** and **Patrick Saltonstall** who could have spent their careers in academia, but instead decided to devote decades to community-based work at the Alutiiq Museum. Their focus on Kodiak has allowed them to build on each successive year of work. This has led to a much more comprehensive understanding of ancestral history, particularly in places like Womens Bay, where dozens of excavations have revealed the entire space of Alutiiq

history. Such research is allowing us to see how ancestral uses of fish, plants, and other resources changed over millennia.

Another area of special interest to the author is Alutiiq language research and education. The museum has had an active language program since 2002 when a master-apprentice project was funded by the Administration for Native Americans (ANA). In that groundbreaking project, six teams of Elder speakers and language learners in different communities around the archipelago worked to pass the language to the next generation. Only one Elder survives from that first project, and the number of fluent speakers of the Kodiak style of Alutiiq is now fewer than 20. However, our efforts continue to document and teach the language. A few National Science Foundation Documenting Endangered Languages grants were funded, including the "Preserving Words" project which created a collection of language recordings, and a "New Words" project in which new terms were developed with a council of Elders to modernize the lexicon.



An Alutiiq Museum staff member shares beaded regalia items made in a workshop with museum visitors. Photo by Alutiiq Museum. Photo by Alutiiq Museum

Subsequently, a number of language revitalization grants have been awarded to area tribes, and the Alutiiq Museum has served as a consultant to a suite of language projects. Another success of regional collaborative effort is the development of the *Alutiiq Studies* program at Kodiak College, as well as extensive materials development, such as the *Kodiak Alutiiq Language Orthography* book, co-authored by **April Counciller** and Jeff Leer, and an *Alutiiq Language Textbook*, which is currently in press and authored by Counciller and **Dehrich Isuwiq Chya**. Regional information, sharing, and partnering on projects is facilitated by the existence of the Qik'rtarmut Alutiit Regional Language Advisory Committee, which has been active for two decades.

In addition to research priorities coming from the Native community, and an emphasis on local access, the Alutiiq Museum's research program has a third pillar, which is intensive and multi-format community information dissemination. Results of research are shared in many ways to increase reach. Research shared in an academic article will also be summarized in a press release for news media, developed into lesson plans, summarized in handouts and brochures, shared in displays or a poster, or perhaps taught in video recordings or workshops. Budgets for special projects always include free copies of publications for area schools, tribes, and libraries to increase access and recently we have added ebooks to share digital versions of publications widely and for free. Similarly, social media posts help to transmit information on available resources to the Alutiiq diaspora in other parts of Alaska and the Pacific Northwest.



The Kodiak Alutiiq Dancers perform at the 2019 Alutiiq Museum annual meeting and Culture Fest in the museum gallery. Photo by Alutiiq Museum

When a 19th century beaded headdress set was loaned to the Alutiiq Museum from the Musée Bolougne-sur-Mer in France, experienced 'beaders' were brought in to study the garments, learn preservation techniques, and make copies of the originals for use in museum programs. Every bead was counted, and each string of beads diagramed. The information was compiled into a video documentary and digital and printed instruction booklets. Instructions for simpler pieces of beaded regalia were developed for beginners and students. The following year, an artist was commissioned to make a contemporary headdress, which was filmed for a tutorial series and developed into a pattern book for other beaders. This has been followed by multiple beaded headdress workshops and a local boom in the production of beaded regalia.

Efforts like the beaded headdress project are the ultimate goal of Alutiiq Museum research—to recover ancestral knowledge and place it back in our communities. Through archaeology, cultural studies, language preservation, and public education, our cultural center seeks to put Alutiiq community members in control of research priorities.

[Editor's note: The NMNH and Arctic Studies Center has a long history of collaborations with Kodiak Island and the Alutiiq Museum, including collection, research, and exhibition projects like "Looking Both Ways: Heritage and Identity of the Alutiiq People" (2002, by Aron Crowell, Amy Steffian, Gordon Pullar; Fairbanks: University of Alaska Press), "New Words"]

ASC ANCHORAGE, ALASKA OFFICE

NMNH SCIENCE TEAM VISITS ALASKA,
JUNE 2023

By Aron Crowell

If you come to Alaska at the height of summer for a whirlwind three-day visit to the Arctic Studies Center—as **Rebecca Johnson** (NMNH Associate Director and Chief Scientist), **Rick Potts** (Curator of Biological Anthropology), **Dorothy Lippert** (Program Manager, Repatriation) and **Katie Barker** (Senior Science Program Administrator) did in June—be prepared to throw off your jet lag, be on the go for 18 hours a day, and meet dozens of our project partners and supporters. **Dawn Biddison** and I were delighted to host this tour by NMNH leadership and to facilitate discussions in Anchorage and Juneau about ASC's collaborative programs in Alaska Native arts, heritage, history, culture, and archaeology.

Shortly after arriving, the Smithsonian group stretched their legs on a walk along the spectacular Turnagain Arm coastal trail where migratory sandhill cranes were feeding on the mudflats. That evening Smithsonian National Board member **Jo Michalski** and the Honorable **Peter Michalski** hosted a welcoming reception at their home, attended by long-time friends and donors to the ASC. The convivial gathering included artists, educators, jurists, university faculty, and civic leaders, among them **Victor Carlson**, **Morgan Christen**, **Heather Flynn**, **Sonya Kelliher-Combs**, **Stephen Haycox**, **Stephen and Gladys Langdon**, **John Levy**, **Jerry McEwan**, **Jenny McNulty**, **Cathy Rasmuson**, **Debra Reed**, **Fran Rose**, **Gail and Jan Sieberts**, **Jim Torgerson**, and

Doug and Kathie Veltre. Rebecca Johnson's engaging after-dinner talk focused on new directions at NMNH, from climate science and genomics to the museum's urgent priorities in community outreach, education, repatriation, ethical returns, and diverse representation

in the sciences. Guests expressed their appreciation for the Smithsonian and its mission, and we thanked Jo, Peter, and Smithsonian National Board alum **Betsy Lawler** for bringing this generous philanthropic group together in support of our work. Jo and Peter added greatly to the occasion by announcing a testamentary gift to the ASC that will help to secure our future, a shining expression of their sustained (and sustaining) generosity. A small but delightful surprise followed Rebecca's talk when she presented me with a covid-delayed Science Achievement Award for *Arctic Crashes: People and Animals in the Changing North*, co-edited with **Igor Krupnik** and published by the Smithsonian in 2022.

The next day kicked off at the Anchorage Museum, where we were welcomed by **Monica Shah**, Director of Collections, and **Aaron Leggett**, Senior Curator of Alaska History and Indigenous Cultures. We toured the *Living Our Cultures, Sharing Our Heritage: The First Peoples of Alaska* exhibition displaying hundreds of Alaska

Native cultural heritage items on loan from NMNH and NMAI, and discussed the statewide collaboration with Alaska Native knowledge keepers and advisors that shaped the exhibition's content and design. Artists **Melissa Shaginoff** (Ahtna), **June Pardue** (Sugpiaq/Iñupiaq), and **Mike Livingston** (Unangax[^]) met with us to discuss the knowledge and meanings embodied by objects from their communities—a bentwood hunting



Figure 1. Rebecca Johnson presents Aron Crowell with a Science Achievement Award at the home of Peter and Jo Michalski. Photo by Katie Barker



Figure 2. Melissa Shaginoff's talk on Ahtna heritage in the ASC Community Consultation Room. Seated L-R: Rick Potts, Dorothy Lippert, Rebecca Johnson, June Pardue, Charlie Pardue, Katie Barker, Aaron Leggett. Photo by Aron Crowell



Figure 3. Under the whalebone arch at the Alaska Native Heritage Center. L-R: June Pardue, Dorothy Lippert, Savanna Von Scheele, Rick Potts, Benjamin Jacuk, Rebecca Johnson, Katie Barker. Photo by Aron Crowell

by June Pardue and co-organized with the ASC (see “*Batuk’enelyshi, Natural Dyes from Dena’ina Lands*” by Dawn Biddison, ASC Newsletter 2023, p. 7-9). We toured the facility with Director and CEO **Emily Edenshaw** and Curator of Collections and Exhibits **Angie Demma**; met with resident historian **Benjamin Jacuk** about his study of the boarding school era; and ended at the Center’s carving shed where the Boarding School Healing Totem Pole was taking shape under the chisels of Haida carvers. The finished pole was raised in October 2023 “to pay homage and respect to the generation that endured the boarding schools,” said one of the carvers, **T.J. Sgwaayaans**, and it was blessed at a ceremony attended by Secretary of the Interior **Deb Haaland** (Anchorage Daily News, Oct. 24, 2023).

As the day ended, **Aaron Leggett**, who is the Dena’ina president of the Native Village of Eklutna in addition to his role at the Anchorage Museum, took us to see



Figure 4. Alaska Native Heritage Center director Emily Edenshaw with the Boarding School Healing Totem Pole. Photo by Aron Crowell



Figure 5. Visiting Joel Isaak’s sculpture of Grandma Olga at Dgheyaytnu (Ship Creek); a salmon drying rack at left is part of the installation. Photo by Aron Crowell

hat, woven grass socks, beaded moosehide mittens, kayak models—that had been brought from exhibition cases into the Community Consultation Room. The presenters emphasized the role that Smithsonian collections play in Indigenous teaching via ASC artist residencies, community workshops, collections access programs, language seminars, video productions, and online curricula. Participation in these programs by Melissa, Mike, June, and a host of other elders, artists, and educators has fulfilled a promise made by the Living Our Cultures co-creation team—that precious ancestral objects brought home to Alaska would serve communities as a resource for learning, healing, and empowerment.

After lunch, we visited the Alaska Native Heritage Center to learn about the ANHC’s cultural exhibits and programs, including a recent natural dyes workshop led



Figure 6. Sealaska Heritage Institute president Rosita Worl with Rebecca Johnson, Dorothy Lippert, and Dawn Biddison. Photo by Aron Crowell

a cast-bronze installation depicting **Olga Nikolai Ezi** (Grandma Olga) and her fish camp at the mouth of Dgheyaytnu (Ship Creek), a work created by Dena'ina sculptor **Joel Isaak** (Fig. 5). The monument is an outcome of Aaron's citywide project to restore Dena'ina place names and raise public awareness about the history of his people, on whose traditional lands Anchorage was built. We shared a moment of connection and reflection as Aaron spoke about this honored place where generations of Dena'ina harvested king salmon to feed their families through the winter.

An early flight the next morning took us to Juneau to meet with **Rosita Worl**, President of the Sealaska Heritage Institute (SHI) and SHI staff including **Chuck Smythe** (Senior Ethnologist), **Kristy Ford** (Education Director), and **Rebecca Soza** (STEAM Project Coordinator). SHI's current partnership with the ASC and NMNH, funded by a grant from the Smithsonian Office of the Undersecretary for Education, is for developing culturally responsive K-12 science education that interweaves Indigenous understanding of the natural world with scientific methods and principles. SHI is a national leader in this educational field and has welcomed the opportunity to work with us on connecting Southeast Alaskan students and teachers to Smithsonian science and collections (see *"Together We Thrive: Culturally Responsive Sustaining Education in Washington DC and Alaska,"* by **Margaret Benson** and **Aron Crowell**, ASC Newsletter 2023, p. 13-14).

At SHI, **Judith Daxhootsu Ramos** gave a presentation on ASC's partnership with the Yakutat Tlingit Tribe to research Indigenous history, archaeology, and ecological knowledge at Yakutat (see *"Climate Change and Indigenous Coastal Adaptations in the Gulf of Alaska,"* this issue of the ASC Newsletter). We toured the SHI's Walter Soboleff Building, which is filled with glorious monumental art including a full-sized house front carved by renowned Tsimshian artist **David A. Boxley** and his son, which depicts **Am'ala, Wil Mangaa da Ha'lidzogat** (Am'ala, He Who Holds up the Earth) (Fig. 7). Over lunch at the University of

Alaska Southeast (UAS) campus, we met with staff and high school students participating in SHI's Opening the Box STEAM Academy, where students work with Indigenous teachers and UAS science faculty to conduct studies of cultural and natural landscapes.

Encounters with Juneau's science community followed, beginning with a great discussion about the impacts of climate change on Southeast Alaska forests with terrestrial ecologist **Jason Feldman** at the Alaska Coastal Rainforest Center. We then toured the Auke Bay Laboratories of the NOAA Alaska Fisheries Science

Center with **Dana Hanselman** (Auke Bay Director), **Chris Lunsford** (Marine Ecology and Stock Assessment Program Manager), and **Mayumi Arimitsu** (Seabird and Forage Fish Ecology Program, U. S. Geological Survey). The Auke Bay facility, which is responsible for monitoring the health, ecology, and population dynamics of commercially important stocks such as salmon, sablefish, and rockfish, is a marine biologist's dream of saltwater fish tanks, industrial-scale wet labs, temperature and growth experiments, a DNA lab, and computational modeling, all to support sustainable fishing in the Gulf of Alaska and Bering Sea. Scientists there are frontline observers of ocean warming, acidification, and the ecological impacts of climate change, and our discussions with them were equally fascinating and sobering.



Figure 7. David Boxley's Tsimshian house front at Sealaska Heritage Institute. L-R: Dawn Biddison, Dorothy Lippert, Judith Ramos, Rebecca Johnson, Katie Barker, Aron Crowell, Rick Potts, Chuck Smythe. Photo by Sealaska Heritage Institute

The day ended on a high when Mayumi and Chris took us out on their boat to see humpback whales feeding in Gastineau Channel off Juneau, sharing their delight in this still wild and thriving marine world and feeding us with a smorgasbord of seafoods that they had harvested and prepared themselves, including some fabulous smoked salmon and lingcod. Then, a dash back to the dock and to Juneau airport, a return flight to Anchorage, and the end of our brief time together. We hope that this taste of Alaska and chance to visit with some of the amazing people who share in our work will strengthen ties with NMNH and lead to future visits—so please come back! And we look forward with great anticipation to the upcoming NMNH Board trip to Alaska this August, led by NMNH Director **Kirk Johnson**.

CLIMATE CHANGE AND COASTAL ADAPTATIONS IN THE GULF OF ALASKA

By Aron L. Crowell

Three studies in the Gulf of Alaska region by the Arctic Studies Center and collaborating researchers, one in progress and two recently published, explore how ancestral Sugpiat and Tlingit communities responded to changes in the marine ecosystem that accompanied periods of climatic cooling and warming over the last 7,400 years. The research taps cultural, biological, and isotopic data preserved in village sites and shell middens to reveal interconnections between climate cycles, ocean temperatures, ecosystem structure, and human utilization of marine resources. Collaborative relationships have centered this work in Indigenous communities and enabled the integration of traditional ecological knowledge with results from archaeology, ecology, and other scientific disciplines.

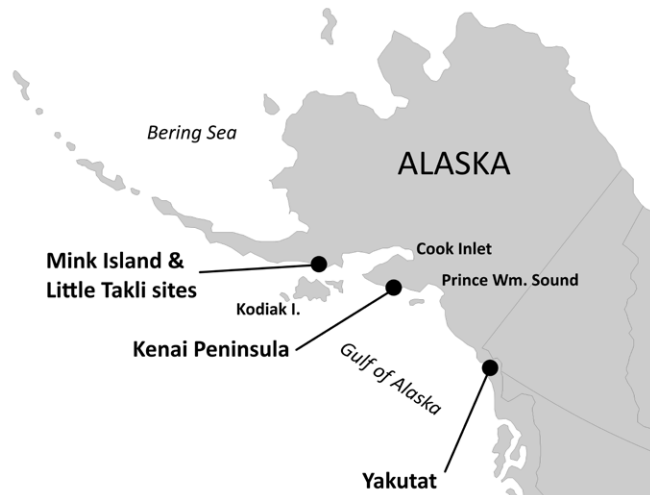


Figure 1: Gulf of Alaska research locations

A Deep-Time Perspective on Ocean Change and Indigenous Responses

A millennial-scale view of ocean change is emerging from the additional analysis of faunal remains found at two ancestral Sugpiat sites in Amalik Bay on the Alaska Peninsula, known as Mink Island and Little Takli (Fig. 1). Excavations in 1997–2000 led by **Jeanne Schaaf** of the National Park Service in collaboration with the Council of Katmai Descendants were undertaken to mitigate the loss of cultural information and human remains at the sites due to erosion by storm waves and active vandalism. Deep deposits of interlayered house floors, midden, and volcanic ash at Mink Island span 7400–300 cal. BP (calibrated radiocarbon years before present), with a hiatus from 3700–2100 cal. BP when the site was not inhabited (Fig. 2). Little Takli, on a neighboring islet less than a kilometer away, was

occupied during 3800–3200 cal. BP, partially filling this temporal gap, and together the two locations preserve one of the longest detailed records of coastal habitation in the Gulf of Alaska, yielding thousands of artifacts and over 83,000 identifiable animal remains from 70 taxonomic families. These include fish such as Pacific cod, rockfish, salmon, sculpins, and halibut; seabirds including murre, puffins, cormorants, sea ducks and albatrosses; sea mammals including porpoises, sea lions, seals (five species), sea otters, walrus, and whales; caribou, bears, and other land mammals; and



Figure 2: Jeanne Schaaf at Mink Island.
Photo by Mike Hilton

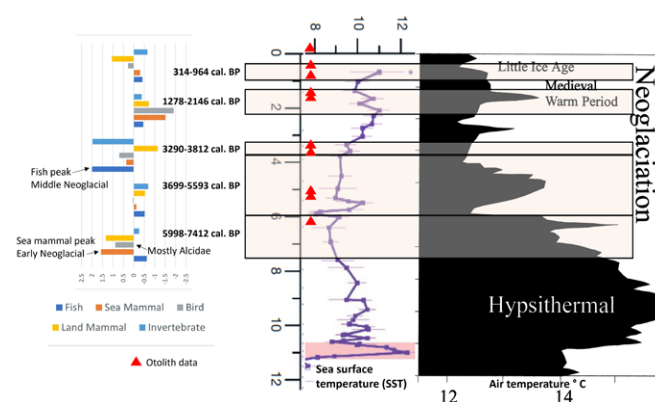


Figure 3: Normalized deposition rates for fish, sea mammals, seabirds, land mammals, and invertebrates from dated strata at the Mink Island and Little Takli sites (bar graph on left) compared to estimated sea surface temperatures and air temperatures during the Neoglacial, Medieval Warm Period, and Little Ice Age

numerous types of clams, cockles, mussels, snails, limpets, chitons, and whelks. This abundance and variety reflect the residents' intimate knowledge of the ecosystem and sophisticated technologies for fishing, hunting, and ocean travel, as well as the productivity and biodiversity of the Gulf of Alaska, especially in the coastal upwelling zone that encompasses Amalik Bay.

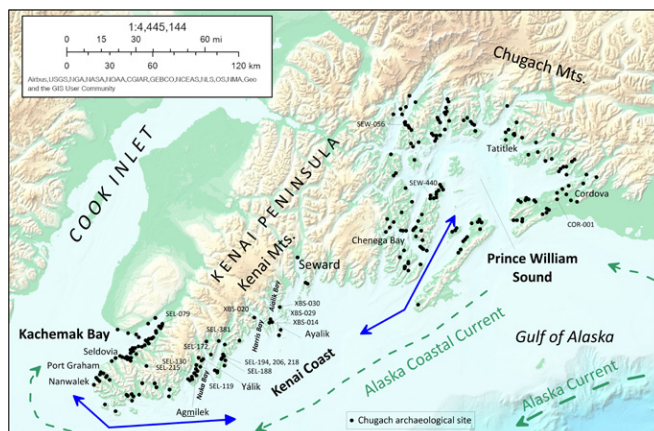


Figure 4: Chugach (Sugpiat) archaeological sites in Kachemak Bay, the Kenai Coast, and Prince William Sound, with migration routes between these areas

Preliminary analyses have been completed for the Arctic Studies Center project, funded by a Smithsonian “Life on a Sustainable Planet” research grant and the National Oceanic and Atmospheric Administration (NOAA). NOAA researcher and co-PI **Thomas Helsler** (Alaska Fisheries Science Center, Seattle) and colleagues at the University of Wisconsin-Madison and University Washington-Seattle conducted high resolution chemical analysis of 25 Pacific cod otoliths (ear bones) from different layers of the Mink Island and Little Takli sites. These methods employed laser ablation inductively coupled mass spectrometry to measure magnesium, zinc, strontium, and barium analytes (^{26}Mg , ^{66}Zn , ^{86}Sr , ^{138}Ba) used to identify changes in salinity, productivity, and upwelling, and secondary ion mass spectrometry to measure oxygen isotope ratios ($^{18}\text{O}/^{16}\text{O}$) to index changes in sea temperatures and levels of the ^{13}C carbon isotope to track primary productivity (plankton production).

Principal Investigator **Aron Crowell** (ASC), **Jeanne Schaaf**, and **Sebastian Wetherbee** (Katmai National Park) reanalyzed the Mink Island and Little Takli faunal remains by computing deposition rates for each taxon (the number of identifiable bones per cubic meter of cultural deposits per year), a measure that reflects the varying abundance of each taxon during different climate periods from the Neoglacial through the Medieval Warm Period and Little Ice Age, filtered by human behaviors including prey selection, hunting effort, and disposal practices (Fig. 3).

While multifactor correlation analysis of the faunal and isotopic variables is not yet complete, several preliminary findings are of interest. Accumulation rates for sea mammals were much higher in the oldest Early Neoglacial strata at Mink Island (5998–7412 cal. BP) than during subsequent periods when ocean



Figure 5: Artifacts from the Bear Cove site in Aialik Bay (310–915 cal. BP) including ground slate endblades for lances, arrow points, knives, and beads made of coal. Photo by Aron Crowell

temperatures trended upward (Fig. 3). A marked focus on sea mammal hunting during the Early Neoglacial has been reported on Kodiak Island and elsewhere in the GOA region, coincident with the Ocean Bay I and II cultural phases, suggesting that this was a period when top predators in the marine food web (seals, sea lions, porpoises, toothed whales) had ample prey and were thriving, as were murre and other seabirds of the Alcidae family. During the Middle Neoglacial Kachemak Period

after 3200 BP, fishing became much more important on Kodiak Island and at the Little Takli site (Fig. 3), indicated by high accumulation rates of all fish taxa except Clupidae (herrings) and the appearance of fishing artifacts such as stone plummets for hook and line rigs and notched pebbles used as net weights. Our further analysis of the isotopic and archaeofaunal data from Amalik Bay may reveal changes in ocean temperatures and chemistry that correlate with these major ecological and cultural transitions. Journal publication of our findings is anticipated in late 2024. We are grateful for the support and cooperation of the National Park Service, the Smithsonian Institution, the Council of Katmai Descendants, and the Bristol Bay Native Association.

Climate Change and Pulse Migration

A second interdisciplinary study by Aron Crowell (Arctic Studies Center, Smithsonian) and **Mayumi Arimitsu** (Seabird and Forage Fish Ecology Program, U. S. Geological Survey, Juneau) combined archaeological, archaeofaunal, and radiocarbon data, marine ecosystem surveys, paleoclimatic indices, and Indigenous oral traditions shared by residents of the villages of Nanwalek, Port Graham, and Seldovia to interpret 2,000 years of Sugpiat migrations from Kachemak Bay in Cook Inlet and Prince William Sound to the outer coast of the Kenai Peninsula, followed by returns to their home regions (Fig. 4). This research was published in 2023 in the journal *Frontiers in Environmental Archaeology* and is available as an open-access download at [Frontiers](https://doi.org/10.3389/fenv.2023.1151231).



Figure 6: Female harbor seal and pup at a glacial ice floe rookery. Photo courtesy of John Jansen, NOAA

The Kenai study was inspired by modern evidence of biological “regime shifts” in the Gulf of Alaska that accompany changes in the state of the Pacific Decadal Oscillation (PDO), a 20 to 50-year climate cycle. Through trophic mechanisms related to the timing of the spring plankton bloom, weak (cool) phases of the PDO support increases in Gulf of Alaska forage fish (e.g., herring, smelts, eulachon), sea mammals, and seabirds, while strong (warm) phases favor salmon and bottom fish such as halibut. This suggested that Sugpiat Chugach groups might have moved between areas where these alternating suites of marine fauna were periodically abundant, migrating to favorable sea mammal and seabird habitats on the Kenai Coast during cold PDO phases and returning during warm PDO phases to the rich salmon habitats of Prince William Sound and Cook Inlet. This type of periodic, climate-driven “pulse migration” has been reported elsewhere in the north including Northwest Greenland, Labrador, and the Melville Peninsula.

For the Kenai study, we identified gaps in regional radiocarbon sequences representing out-migrations and peaks indicating in-migrations and found that these coincided with PDO climate cycles as reconstructed from tree rings by **Greg Wiles** (Earth Sciences and Archaeology, College of Wooster), supporting the climate-linked migration model. We used marine fish, mammal, and seabird surveys by NOAA and USGS to profile the contrasting resources of Cook Inlet, the Kenai Coast, and Prince William Sound and ground-truthed the study by ecological analysis of two glacial fiords on the Kenai Coast (Aialik Bay and Harris Bay), both biologically enriched by glacial sediments. Archaeological sites in the two fiords were occupied during several cold PDO phases over the last 1,000 years, and archaeofauna harvested by the Chugach included harbor seals, porpoises, sea lions, murre, puffins, Pacific cod, and rockfish, with only a few salmon or land mammal bones. Artifacts such



Figure 7: Judith Ramos with a kittiwake egg collected from the bird cliffs at Haenke (Egg) Island in Disenchantment Bay, Yakutat fiord. Photo by Aron Crowell

as ground slate endblades for lances, harpoons, and arrows, bone harpoon heads, two-part bone hooks for deep sea fishing, and seal oil lamps are consistent with this subsistence focus (Fig. 5).

The study was enhanced by ecological and historical knowledge shared by Sugpiat elders of Kachemak Bay during the ASC’s Kenai Fjords Oral History and Archaeology Project (2002–2017). Accounts of migrations by skin boat to the outer Kenai coast for hunting and fishing are preserved in oral tradition. The late Chugach community scholar **Nick Tanape, Sr.** related stories told by his father about men from Kachemak Bay and Prince William Sound meeting at Aialik Bay for sealing. Visiting the seal rookery at Aialik Glacier in 2002, he said, “It would make a lot of sense to hunt in this area. You can sneak around this floating ice to get to the seals. They would be more abundant here in cooler weather, cooler weather for them, especially in the summer. And there’s probably more feed on the bottom for them” (Fig. 6).

We respectfully acknowledge that this research took place on the traditional lands and waters of the Chugach people and are thankful for the generous support, permissions, and cooperation of Kenai Fjords National Park, the Ocean Alaska Science and Learning Center in Seward, Chugach Alaska Corporation, English Bay (Nanwalek) Corporation, Port Graham Corporation, and the Native Villages of Nanwalek, Port Graham, and Seldovia.

Laax̄aayik, Near the Glacier—Ecological Knowledge at Yakutat

In partnership with the Yakutat Tlingit Tribe (YTT) and with funding from the National Science Foundation, the Arctic Studies Center conducted an 1,100-year longitudinal study of the cultural ecology of Yakutat

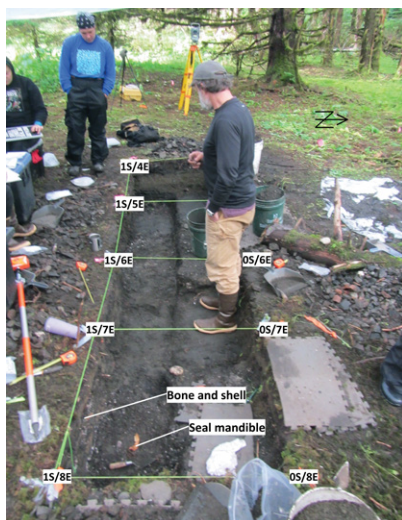


Figure 8: Aron Crowell and field school students excavating a test trench at Tlákw.aan, 2014. Photo by Mark Luttrell

fiord during 2011–2014. The results were published by the Smithsonian Institution Scholarly Press in early 2024 as *Laaxaayik, Near the Glacier: Indigenous History and Ecology at Yakutat Fiord, Alaska* (Aron Crowell, with a foreword by Yakutat Tlingit scholar **Judith Daxootsu Ramos**) (Fig. 7).

The goals of this community-based

project were to document Little Ice Age glacial retreat, settlement of the emerging fiord by migrating Eyak, Ahtna, and Tlingit clans, and utilization of marine and terrestrial resources by past and present residents. Today's community members are finely attuned to seasonal and spatial variations in the availability of key subsistence species, enabling them to harvest more than 100 varieties of fish, birds, sea mammals, land mammals, plants, and invertebrates totaling about 120 kg of wild foods per person each year—a sustainable way of life on the land made possible by ecological knowledge passed on by ancestors and taught to each new generation. The project design, co-developed with YTT, included archaeological and paleoenvironmental investigations to trace these cultural practices into the past, and extensive interviews with community members to record Tlingit oral historical and ecological knowledge.

An important perspective that emerged from this collaborative research program is the strong influence that glaciers exert on marine and terrestrial ecology, and thus on the resources available to Indigenous residents of Yakutat and other fiords in Southeast Alaska. Iron, silica, phosphate, and other minerals are scraped from mountain bedrock as glaciers descend to the coast, entering the ocean in meltwater and ice floes. These mineral nutrients foster abundant plankton growth, sustaining animal populations at all levels of the marine food web, and glacial calving produces floating ice that provides predator-safe haulouts for harbor seals and pups. On land, glacial retreat exposes new habitat for human settlement, and productive forests and watersheds develop over time, supporting salmon runs and a wide variety of terrestrial food species.

Because Yakutat has old growth forests, abundant terrestrial game, and salmon rivers as well as thriving populations of demersal and benthic fish, seabirds, seals and other marine mammals, it has sustained continuous human habitation through the climate variations of the last 1,100 years rather than being periodically abandoned like the Kenai Coast. This ecological contrast is illustrated by faunal remains from the village site of Tlákw.aan on Knight Island (Fig. 8). While the site's dates of occupation (440–200 cal. BP) were during one of the colder phases of the Little Ice Age, the Tlákw.aan midden contained salmon as well as abundant bones of harbor seal, fur seal, and harbor porpoise. The basket of wild foods is more diverse at Yakutat than on the Kenai Coast, giving rise to a larger and more permanent Indigenous population.

This research took place in Yaakwdáat Kwáan, the homeland of the Yakutat people. It was undertaken with permission from the Yakutat Tlingit Tribe and in collaboration with members of the community, whose cooperation, hospitality, and contributions are gratefully acknowledged.

MAKING CONNECTIONS: ATHABASCAN LIFEWAYS AND YOU

By Dawn Biddison

Making Connections: Athabascan Lifeways and You is a 36-page educational activities booklet with accompanying poster and website. With the booklet, readers can visit with Dene peoples of Alaska, look closely at their cultural belongings cared for by the Smithsonian Institution, learn about their ways of life, and make connections through activities people can do wherever they live. The guide was created with K-8 students in mind but suits learners of all ages. The Making Connections project, completed in September 2023, was a collaboration between artist, curator, and Knowledge-Keeper **Melissa Shaginoff** (Ahtna/Paiute) and Museum Specialist **Dawn Biddison**, Arctic Studies Center, Alaska office (ASC-AK). Layouts, graphic design, and illustrations were created by **Dimi Macheras** (Ahtna) and Casey Silver of 80% Studios. All content was reviewed by Knowledge-Keeper, language expert, and teacher **Kari Shaginoff** (Ahtna/Paiute). The content in the guide was drawn from knowledge shared by Athabascan collaborators on and research contributors to the Smithsonian exhibition *Living Our Cultures, Sharing Our Heritage: The First Peoples of Alaska* located at the Anchorage Museum, and from the collaborative project [Coming Home: Reclaiming Ahtna Knowledge through Museum Collections](#), which also has a site on Learning Lab with resources.



Maio Nishkian using the Making Connections booklet. Hatcher's Pass, Alaska, September 2023. Photo by Melissa Shaginoff

The project team developed fourteen activities that feature Athabascan Indigenous knowledge and community voices based on cultural belongings in the Smithsonian collections. Bonus content for each facilitates further cultural connections for readers. The booklet concludes with two additional activities that connect users with museum collections and their creativity. The [project website on Smithsonian's Learning Lab](#)

includes a downloadable PDF of the guide and solutions to the puzzles, along with additional resources. The site also features the content behind each activity: interviews, short essays and exhibition research by Athabascan Knowledge-Keepers.

Outreach for the Making Connections project included print distribution and meetings with local educators. Ten copies of the booklet and poster, along with a cover letter and flyer for the different educational resources on the main ASC-AK Learning Lab site, were shipped to 523 recipients: all elementary and middle schools in Alaska, all libraries on Athabascan lands and Athabascan Tribal organizations, cultural centers and museums. Booklets, posters and additional printed Learning Lab resources were also distributed to educators during a Saturday workshop at the Anchorage Museum, which was attended by Anchorage teachers, Anchorage School District leads of the Indigenous Education, Arts and Social Studies departments, and the curriculum developer for the Knik Tribe. Dawn also met with staff from the University of Anchorage School of Education and gave an online presentation to their Curriculum Theory and Design students. She also presented online to art educators statewide about Making Connections and other ASC-AK education resources online.

The project team would like to recognize the all the Athabascan Elders, Language Warriors, Knowledge Keepers, and Artists who contributed to the Making Connections activities. The creation and printing of the booklet was made possible through generous support from the Smithsonian Institution's Office of the Under Secretary for Education, with additional support from the Smithsonian Regional Councils, FedEx, and the Alaska office of the Arctic Studies Center.

AHTNA COLLECTIONS ACCESS AND COMMUNITY OUTREACH: *COMING HOME* PROJECT COMPLETED

By Dawn Biddison

In 2022-2023, Ahtna community members **Kiana Carlson, Agnes Denny, Jessica Denny, Dimi Macheras, and Melissa Shaginoff** collaborated on collections research and documentation with Ahtna cultural belongings in the care of the



Melissa Shaginoff and Jessica Denny presenting project work to Ahtna community members in Chistochina, Alaska, May 2023. Photo by Dawn Biddison

Smithsonian during a project developed and managed by **Dawn Biddison**. To begin, they researched collections online to find Ahtna cultural belongings currently located nationally and internationally. Next, they worked in-person with collections at NMAI and NMNH in Suitland, MD, and at the Anchorage Museum. To learn more about the background of this project and its development and research phases through February 2023, please see the 2023 issue of this *Newsletter*. The project was made possible through the generous support of the Margaret A. Cargill Philanthropies, NMAI, and supporters of ASC-AK.

Throughout the project, the Ahtna group documented resources for their communities, made recommendations to museum staff regarding cultural awareness and protocols, and built relationships with each other, which in turn established relationships with museum staff. Across time together, the group developed community outcomes that included making and gifting calendars, which they based on museum collections, conversations with Ahtna community members and reflections on Ahtna cultural belongings. They co-created a website on Smithsonian's Learning Lab to share project resources titled *Coming Home: Reclaiming Ahtna Knowledge through Museum Collections* (see the *New Media* in this Newsletter). Each of the three villages participating in the project was given a hard drive archive of digital resources and printed notebooks of research and resources compiled by Dawn to keep in their communities for future Ahtna-led work. In addition to a symposium organized by the Ahtna team in Anchorage, the project concluded with a community gathering and project presentation by Jessica and Melissa in May of 2023 at

Chistochina where a lunch of moose stew and fry bread was provided, along with gifts of project calendars, NMAI collections home care pamphlets, activity handouts and crayons for children, and gifts to Elders of tea, pilot bread, sage and beaded necklaces made by Melissa. The event was attended by Ahtna community members and leaders from Ahtna Inc., Ahtna Intertribal Resources Commission, Ahtna Heritage, Cheesh'na Tribal Council, Mt. Sanford Tribal Consortium, and the Native Village of Kluti-Kaah. One person attending shared, "I can't begin to tell you how good this makes my heart feel. It's filling up my spirit. I'm so proud of the work that you are doing."

The spirit of the *Coming Home* project was about "finding ways to bring personal experiences with museum collections into community, reuniting cultural belongings with their descendants." The Ahtna project collaborators also wrote: "We believe that our cultural belongings have teachings for us, and creating access for our communities is the purpose of this project and should be the purpose of all museum collections. Regaining relationships with cultural belongings happens through both personal and physical connections: this requires visits from communities and ultimately returning information to communities. As a descendant of Ahtna peoples, you have the right to access your cultural belongings at museums, and we encourage you to be a part of this homecoming. Search collections online. Visit museums with Ahtna cultural belongings. Connect with community members. Reach out to us for help. The doors are open."

WOVEN TOGETHER: A "TOGETHER WE THRIVE" PROJECT

By Dawn Biddison

The *Woven Together: Taperrnat Research and Art* project was co-developed by **Dawn Biddison** after reaching out to the Bristol Bay Foundation (BBF) and volunteering time in their Creating Cultural Competence program, which seeks "to enhance the cultural competence of educators" and "to result in more culturally inclusive classroom practices." After learning from BBF staff and their collaborators about issues and goals, Dawn recognized that ASC-AK could become a useful ally in their work. After Dawn's work was discussed, she asked BBF if they would consider collaborating on a project, and they agreed. During the fall and winter of 2023, Dawn met and corresponded with BBF staff and their collaborators at the Alaska Humanities Forum, University of Alaska Anchorage School of Education, and University of Fairbanks Bristol Bay Campus. She proposed a preliminary project framework based on what she learned from

BBF, asked for and incorporated advice, and the project was approved by BBF, along with plans to continue developing and adapting it. The *Woven Together* project was reviewed and approved by the Alaska Native Museum Sovereignty group and by tribal representatives in areas where the work will take place: the Native village of Eklutna, representing Indigenous peoples in the Anchorage area, and the Ninilchik Village Tribe. Staff from the King Salmon and Naknek Tribes were also contacted, and the project will be adapted to honor their guidance.

Woven Together will be based on work with Yup'ik, Sugpiaq, and Dena'ina community members—whom the Bristol Bay Foundation serves—as partners, participants, educators, learners and content-creators, along with other Alaska collaborators, for: 1) researching and harvesting *taperrnat* (beach rye grass in the Yup'ik language); 2) teaching how to prepare and weave *taperrnat*; and 3) creating and sharing resources for educators and learners. Alaska Native Knowledge-Keepers will be at the center of each element, and Alaska Native cultural protocols, values and expertise will be honored and shared throughout the project and in the co-created educational resources.

The first part of the project will support three small community groups focused on learning from Knowledge-Keepers and gaining place-based research experience through local field excursions to observe, document and sustainably harvest samples of *taperrnat* in the King Salmon, Anchorage, and Homer areas. The second project part will support three weaving workshops with a grass harvesting experience in the three research locations, led by Yup'ik and Sugpiaq Knowledge-Keepers who will teach educators and students. Each workshop will have a community gathering where people can share their grass art and interests. The third part of the project will focus on creating resources for educators and learners. A culturally responsive curriculum based on the project will be written for three grade ranges and additional culturally responsive lessons will be written by participating teachers. There will be a website featuring the voices and work of community participants and the free educational resources, along with content to support non-Native educators teaching Alaska Native content and support bringing Alaska Native community experts into classrooms to improve cultural inclusivity. The project will conclude in February 2025 with a gathering to bring together project participants, educators, and community members for sharing experiences and resources and for providing professional development workshops for teachers.

The goals of this project include centering Alaska Native ecological knowledge and protocols for harvesting from

the land, practices around environmental observations across seasons and changes for successful materials harvesting, and scientific principles demonstrated by techniques for preparing and weaving *taperrnat*; supporting intergenerational teaching and learning; creating culturally responsive education resources; and contributing to cultural competency for educators. *Woven Together* has received grant support from two Alaska Native non-profit organizations, the **Bristol Bay Foundation** and **The CIRI Foundation**, and from the **Our Shared Future, Reckoning with our Racial Past Initiative** at Smithsonian Institution.

The *Woven Together* project is part of a Smithsonian *Together We Thrive* project. The project was awarded in August 2022 for two years to work in two geographic locations, Alaska and Washington, D.C., in collaboration with the Smithsonian project team members from NMNH's ASC/AK, Dept. of Anthropology, and Office of Education), the National Zoo, and Conservation Biology Institute. The D.C. and AK-based projects, together, are an effort to co-create and situate more culturally responsive education experiences and resources specific to science and local community needs and cultures. To learn more about the TWT project, please read the article by **Aron Crowell** in the 2023 *Newsletter*.



Cover of the *Making Connections* educational activities booklet. Artwork by Dimi Macheras and design by Melissa Shaginoff

interdisciplinary educational activities booklet and poster, puzzle solutions, an introduction video, photos and information about the cultural belongings at the Smithsonian. These materials are featured in each activity along with Athabascan community members who provided information about them, research videos, archival photographs, and links to extension activity resources and related educational resources on the SASC site. The site also shares information about **Melissa Shaginoff** and about **Dimi Macheras** and **Casey Silver** of 80% Studios who worked with **Dawn Biddison** to create the resources.



January from the *Ahtna Coming Home 2023* calendar featuring Kiana Carlson and snowshoes at NMAI. Artwork by Dimi Macheras and design by 80% Studios and Melissa Shaginoff

The collection [Coming Home: Reclaiming Ahtna Knowledge through Museum Collections](#), also co-created by Dawn Biddison, features content from the collections access project discussed in the article "*Ahtna Collections Access and Community Outreach: Coming Home project completed*" in this issue. There are photographs of Ahtna researchers **Kiana Carlson**, **Agnes Denny**, **Jessica Denny**, Dimi Macheras, and Melissa Shaginoff, and short stories they shared about Ahtna cultural belongings cared for by the Smithsonian that they visited with during the project. There are also photos of and short interviews with Athabascan Elders and Knowledge-Keepers who provided community information about additional cultural belongings featured on the site: **Evelyn Beeter**, **Lena Charley**, **Emma Hildebrand**, **Tom Huntington**, **Joel Isaak**, **Kari Shaginoff** and **Sondra Shaginoff**. The website also provides downloadable copies of the 2023 calendar and Ahtna months poster, which were printed as gifts to Ahtna communities, and activities pages for children that were created for the project community gathering in Chistochina to report on the project. Copies of the NMAI Collections Home Care pamphlets are also provided.

NEW MEDIA

By Dawn Biddison

Two new collections have been added to the Learning Lab site [Smithsonian Arctic Studies in Alaska](#), and the following curricula have been checked and updated for numerous website links and language revisions: [Salmon Give Life: Learning from Alaska's First Peoples](#); [Gifts from the Land: Lifeways and Quill Art of the Athabascan Peoples](#); [Iñupiaq Lessons: Language and Culture](#); and [St. Lawrence Island Yupik Lessons: Language and Culture](#).

The collection [Making Connections: Athabascan Lifeways and You](#) provides a PDF copy of the

NEWS

NOTES ON AN ARCHAEOLOGICAL SITE GONE MISSING

By Ken Pratt and Matt Ganley

In June 2022, the authors located a previously unreported archaeological site during a helicopter survey of the Norton Sound coast between Solomon and Topkok Head. This section of coast is topographically uniform, consisting of a broad, low beach ridge backed by low hills, extensive marsh and wet tundra areas, and several barrier lagoons.

The newly discovered site consists of the remains of a semisubterranean house (Fig. 1) measuring about 6.3 m wide by 9.7 m long (including the entry tunnel). Herein, it is referred to as the “Lone House” site. After it was spotted, we landed and briefly searched for other possible cultural features, but none were found.

Locational coordinates were noted, and several photographs of the site were taken before we departed. Also in June, Bering Straits Native Corporation obtained LiDAR (Light-Detecting and Ranging) imagery for this stretch of coast that shows the Lone House site clearly (Fig. 2).

Several months after our 2022 field project concluded and LiDAR photography had been taken, a major storm event—Typhoon Merbok—struck western Alaska with devastating force. A few details about the storm’s impacts relevant to our area of interest are provided below.

A significant storm entered Alaska waters on September 15, 2022, as the remnants of Typhoon Merbok reached the waters of the Bering Sea. By late the next day, September 16, the record low pressure system had reached the coast along northern Norton Sound. Over the following two days maximum sustained winds of 31 knots were recorded in Nome, Alaska with gusts exceeding 41 knots. Prevailing winds from the south battered the coastline with impacts including flooding, coastal erosion, and the destruction of subsistence camps that dotted the shoreline east of Nome. High water

coincided with peak wind speeds on September 17th and 18th. The coastline east of Nome, composed of barrier lagoons and gently sloped, sandy beaches, was overrun by the waters of Norton Sound (National Oceanic and Atmospheric Association 2022). At Nome...the ocean was 10.5 feet (3.2 meters) above the low-tide line on Sept. 17, 2022. That’s the highest there in nearly half a century—since the historic storm of November 1974 (Thoman 2022).



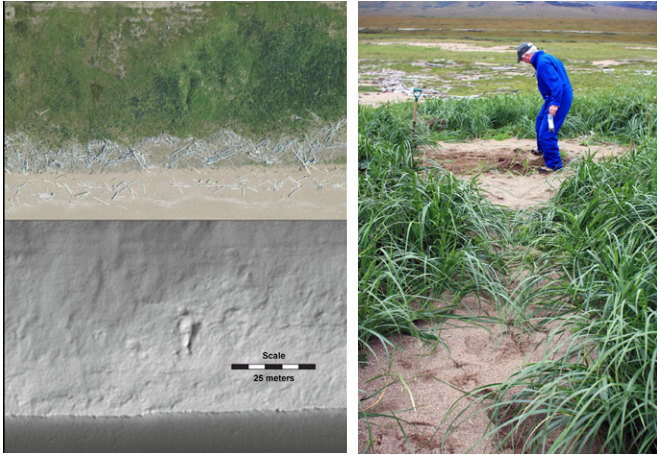
Figure 1. Southwest view of site area with the key-hole shaped house. Note accumulated driftwood along the shoreline fringe and lack of driftwood inland. June 2022.

Photo by Matt Ganley

In August 2023, the authors returned to the site area with the objective of testing the house in hopes of recovering an organic sample that might provide data concerning site’s chronology. After the 2022 coordinates (which had been checked against the LiDAR imagery) were entered in the helicopter’s navigational system, we flew to the area on 23 August but could not find the house—despite confirming we were where the coordinates indicated we should be and circling at low altitude several

times. Our failure to relocate the site was mystifying; but we had other work to do so decided to move on, then searched for the site again on another day. Back in Nome, we checked and verified that the Lone House site coordinates had been written down and entered in the helicopter’s navigational system correctly. Still confused about our inability to find the site on the first attempt, we were determined to return to the area, land and carefully search for the site on foot. That happened three days later, on 28 August.

In the ensuing surface reconnaissance, Ganley noticed a discreet sandy area with a suggestive key-hole shape and speculated that it could be the house. The edges of the keyhole-shaped area were defined by sparse grassy vegetation, and its “interior” was completely filled in with sand. We noticed a difference in soil (sand) density with less firm/dense sand within the keyhole, and more dense sand outside the margins when we pushed shallow probes into those areas. So, we excavated a shovel test in the approximate center of the in-filled area. Digging through only unconsolidated sand



Left: Figure 2. LiDAR comparison images of the Lone House site. Top: Digital Elevation Model (DEM) image showing house at center and driftwood accumulated along the shoreline fringe. Bottom: “Bare Earth” DEM, shaded to highlight elevation variability, shows house at center left. Right: Figure 3: Pratt finishes backfilling test hole; view from south, looking inland. August 2023. Photo by Matt Ganley



Figure 4: Image taken from southeast of the site area post-Typhoon Merbok, with key-hole shaped house “invisible” at lower left-center. Comparing with Figure 1.

(with the walls of the test hole constantly sloughing in), we saw nothing of interest until encountering some charcoal at 85 centimeters below surface. This convinced us the house had been found, so a charcoal sample was collected and the hole backfilled (Figs. 3, 4). Radiometric analyses of the sample (Beta-674484) returned a date of 240+/-30 BP.

Comparing a 2023 aerial photograph (Figure 4) of the site with the one taken in 2022 (Figure 1) reveals three obvious changes attributable to Merbok’s storm surges: (i) the house pit was filled in with sand; (ii) most of the driftwood that previously fronted the site was buried by sand, and some was transported inland; and (iii)

extensive sand deposition on previously vegetated areas created new expanses of sand-covered ground. Our novel experience involving the Lone House site and Typhoon Merbok made us quickly realize that this could not be the only time storm surges associated with powerful storms in western Alaska had buried archaeological sites. This is significant, because the long-standing tendency has been to assume that the primary impacts severe coastal storms have on coastal archaeological sites are to erode and/or destroy them. The Lone House site was subjected to a far different type of storm impact, one that could easily go unnoticed (see Figure 4). As this account demonstrates, if the authors had not photographed and recorded locational coordinates for the Lone House site in June 2022 the impacts of Typhoon Merbok several months later would likely have prevented it from ever being relocated.

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ALEUTIAN ISLANDS REPATRIATION UPDATES

By Eric Hollinger

The anthropological collections from the Aleutian Islands in the Smithsonian’s National Museum of Natural History (NMNH) are extensive and span thousands of years and many islands of the Archipelago. Archaeological collections made beginning in the mid-1800s and continuing through the late 20th century included human remains and funerary objects subject to the repatriation provisions of the NMAI Act. NMNH’s Repatriation Office (RO) has been working with representatives from the Aleutian Pribilof Islands Association, regional and village corporations, tribes, and Native Villages to document and assess the cultural affiliations for the remains and objects. Cultural affiliations are recognized to one or more IRA villages as having ancestor descent relationships that give them authority to make decisions for the dispositions of remains and objects subject to repatriation.

The RO approached the task by working with individual villages and island groups moving mostly



Helena Schmitz, President of Atux Forever, and Chris Dudar, Director of the Repatriation Osteology Laboratory, wrap ancestral remains for return to the Near Islands. Used with permission. Photo by Eric Hollinger



Atux Forever President Helena Schmitz and Vice President Theresa Deal hold the quilt Deal made to wrap remains returning to Attu

from west to east. Assessments have been completed for Unga Island, St. Paul Island, the Near Islands, the Hawadax Islands, the Andreanof Islands, Kagamil Island, and Umnak Island. Assessments for Ship Rock Island is nearing completion, and the RO is now working with communities to document and assess affiliations for Unalaska and nearby islands and the Port Moller area of the Alaska Peninsula. Repatriations have been completed with the Unga Tribal Council, St. Paul, and the Village of Atka for the western Aleutians.

A significant repatriation step occurred this past summer when the RO worked with Village of Atka, the Fish and Wildlife Service, and the non-profit group Atux Forever. The remains and funerary objects from the Near

Islands, Hawadax Islands, and Andreanof Islands were repatriated to the Native Village of Atka in 2019 and were placed on temporary loan to NMNH while Atka researched and planned for physical transfer back to Alaska. The Native Village of Atka decided to start with return of Saskinaax remains to the Near Islands for reburial on the islands from which they were removed. This was made possible with support from the Fish and Wildlife Service and the Alaska Maritime Wildlife Refuge, using their research vessel Tiġlaax to transport the remains and Saskinaax descendants and Atka representatives to the islands.

In 2023, **Crystal Dushkin**, President of the Native Village of Atka, asked NMNH to bring representatives of Atux Forever and the Atka Tribal Council to the Smithsonian to work with RO Tribal Liaison

Eric Hollinger to prepare the remains for the trip back to the Aleutians. Atka Tribal Council member **Nancy Zoachney**, Atux Forever President **Helena Schmitz**, and Vice President **Theresa Deal** traveled to Washington, D.C. to work with museum staff. The team wrapped the remains in muslin bundles, and Deal brought a beautiful quilt she made to wrap the remains from Attu Island. Helena asked **Ray Hudson** to assist in preparing a weaving to add as an offering, and Ray provided an unfinished piece begun in the 1960s by Attu weaver **Anfesia Shapsnikoff**, Ray's teacher. Ray added grasses from Attu, Atka, and Unalaska and sent the weaving to the Smithsonian to be placed with the remains for their journey home. Remains of 51 individuals from NMNH collections and 4 individuals being repatriated by the Fish and Wildlife Service were included for the return.

Once the remains were bundled and boxed, they were moved to NMNH where the RO and Unangaax teams were joined by Atka President Crystal Dushkin and students and teachers from Atka who were in Washington for the National History Day competition. The Atka students had won the Alaskan State History competition with a web site project titled [*A Geopolitical Frontier: The Aleutian Islands, Home of the Unangaax People*](#) and were joining 2,600 students and 600 teachers for the national level competition in College Park, Maryland. The Atka students won at the national level for their entry in the category, 'History of Place'. These young scholars joined museum officials, RO staff, and representatives and descendants to pay final respects to the individuals before their flight to Anchorage.

Once the remains were in Anchorage, Helena Schmitz coordinated with the Native Village of Atka and the Fish and Wildlife Service, and she and her family transported the remains to Homer where they were



Attu descendants at the reburial site on Attu Island, August 17, 2023. Photo by Helena Schmitz

placed with the Fish and Wildlife Service until the *Tigłax* was ready for the trip in August. A team led by Alaska Maritime National Wildlife Refuge Manager **Steve Delehanty** and Deputy Refuge Manager **Jeff Williams** coordinated the trip with FWS Archaeologist **Jeremy Karchut**, Captain John Faris, and his crew. With the remains safely on board, *Tigłax* picked up representatives of the Village of Atka and descendants and representatives from Atux̄ Forever and traveled four days and more than 3,000 more miles to Agattu, Attu, and Shemya, where community members and the FWS teams dug new graves, conducted a ceremony, and reburied the remains. On the return trip the team stopped at Atka where the community hosted a feast with song and dance to honor the completion of the repatriation.

Repatriation is an ongoing process requiring care and cooperation. The NMNH RO is grateful to the Fish and Wildlife Service Alaska Maritime National Wildlife Refuge, the Native Village of Atka, and Atux̄ Forever for their efforts and assistance, and we look forward to working together in the future. *Qāgaasakuq* to all who helped.

3D REPLICATION OF THE MOTHER BEAR HAT FOR THE TEIKWEIDI CLAN OF ANGOON, ALASKA

By *R. Eric Hollinger, Lori Collins, Jorge González García, Travis Doering, Carolyn Thome, and Chris Hollshwander*



Digital modeling from 3D scanning allowed for the digital separation of parts (González García, USF Libraries)

On the evening of November 10, 2023, Daniel Brown, clan leader of the Teikweidi Clan of Angoon, Alaska, as the Tlingit say, “walked into the forest.” His passing was a great loss to his clan, family, community, and those of us who worked with him from as far away as Washington, D.C., and Tampa, Florida. One of his last efforts as clan leader was



Left: Dan Brown removing the paws from the hat so they could be scanned separately. Right: USF CDHGI Travis Doering and Jorge González García with the full-sized 3D print

to work with a 3D digitization and replication team from the Center for Digital Heritage and Geospatial Information in the University of South Florida Libraries (USF CDHGI) and the Smithsonian Institution to make a 3D replica of one of his clan’s crest hats for the clan to use for educational purposes.

The Mother Bear Hat (as it is called), is a sacred ceremonial emblem called *at.oow*, and belongs to the clan and has been cared for by Dan and his ancestors. Dan had seen some of the 3D digitization and replication work previously undertaken with Tlingit clans by the NMNH RO, Smithsonian Exhibits, and the Smithsonian’s Digitization Program Office (Hollinger et al. 2013; Hollinger 2022). At a workshop at the 2019 *Sharing Our Knowledge Conference* in Juneau Dan asked the joint USF and Smithsonian team to digitize the Mother Bear Hat in the hopes that a 3D digital model could be created and then used to make a physical 3D replica. Dan said that a physical replica of the important hat would allow him to take it to schools and other places to teach about the history of the hat, the stories connected to it, and the workmanship of the artists who made it. A surrogate would allow for teaching without putting the original hat at risk, and it could be shown in contexts where it might not be culturally and spiritually appropriate to display the original without it being matched by the *at.oow* of an opposite moiety.

Digitization of the hat using a structured light scanner was led by **Jorge González García** with the assistance of **Thome, Hollinger, Hollshwander**, and the enthusiastic participation and supervision of Dan. Dan personally removed wooden paws to be scanned separately and dusted the glossy black paint with corn starch to reduce reflection from the scanner and then took a turn scanning the hat himself. The status basket



Carolyn Thome uses the original Mother Bear Hat and the Man-Who-Married-The-Bear Hat as reference while painting the replica

rings on top of the hat were also scanned as a separate stack. Other clan leaders gathered to encourage the team, share stories, and discuss other *at.oowoo*.

After returning to Tampa, Jorge processed the digital files to create a complete and accurate digital model. He added color to the surface using photographs and digitally isolated and separated the ears, individual shell inlays, copper eyebrows, and the tacks that anchored the eyebrows. In communication with Dan and the USF team, the project development was undertaken collaboratively, with Dan allowing physical 3D prints at ½ scale to be made and sent to him in Juneau for his comparisons with the original.

Dan suggested creating a full-sized print that could be painted to match the original and provided feedback. The hat was too large to print as a single piece. Jorge digitally divided it into seven parts to print separately. The sections had to be cut away from support structures and then fused together into one solid base just as the original wood hat is in one main piece. Shell inlays were removed using digital editing to create spaces where actual shell pieces could be inserted, and templates were made for 3D printed inlays and eyebrow pieces to be replaced with real materials.

Dan had hoped to cut the shell for the teeth and other inlays and shape the copper eyebrows using the 3D-printed versions as templates. He had also planned to visit Washington, D.C. with his hats so the Smithsonian could video record him discussing the history of the hats and his clan, and he could work together with the USF team and the Smithsonian's model makers to complete assembling and painting the replica. Unfortunately, Dan's illness worsened, and he asked that the replica be brought to Juneau, where it could be finished by Hollinger and Carolyn



The finished replica (left), next to the original (right)

Thome, and brought to him at the Hospital. The USF team handed off the main print and parts to Hollinger, and Smithsonian Exhibits generously allowed use of their workshop in Maryland, where Hollinger and Hollshwander cut and shaped the shell inlays and copper eyebrows.

With all the pieces, paints and tools ready, Hollinger and Thome hastened to Juneau and took the 3D print to Dan's Hospital room for him to see before the work began. The Brown family provided a workspace and access to the original Mother Bear Hat and the Teikweidi's ancient Man-Who-Married-The-Bear Hat as references. Dan wanted the replica Mother Bear Hat to be restored with the red paint so that it looked more like the original hat. The original hat had a red color similar to the paint on the Man-Who-Married-The-Bear Hat.

Thome and Hollinger worked several long days to paint the replica, attach the ears, copper eyebrows and leather chin straps, and glue in abalone shell eyes, teeth, and other inlays. Thome's decades of experience as an artist and Smithsonian model maker proved invaluable as she meticulously matched the colors and paint patterns. The 3D replica paws, just like on the original, were attached to the replica using real metal bolts and 3D printed nuts, allowing them to be removed at will, just as Dan had done during the scanning. Donated by Dan's stepson, Charles, real human hair was inserted into fine holes drilled into the print. Real ermine skins were also used to top the 3D-printed status ring stack. The new replica was finished, and Hollinger and Thome delivered it to Dan and his family in his hospital room three days before he passed away. Dan was pleased with the results as his vision had been fulfilled, and his last task as Brown Bear clan leader had been completed. With the help of the Smithsonian's repatriation staff and model makers and the USF

Libraries 3D specialists, the Teikweidi clan used 21st-century technology to make an exact replica of their ancient clan hat as an aid to educate clan members and others about Tlingit culture. The Smithsonian and USF team is grateful to Dan, the Teikweidi clan, and Dan's family for entrusting us with this work and great honor. *Gunalchéesh hó hó.*

TLINGIT GLACIER AND LAKES—A REPARATIVE INTERVENTION

By *Sasha Huber*

In 2007, the 200th anniversary of the birth of **Louis Agassiz** (1807–1873) was celebrated. He was not only a famous Swiss-American glaciologist, with over 80 places named after him on our planet, and even some on the Moon and Mars, plus seven animal species. After emigrating from Switzerland to the USA in



Huber, Tlingit Glacier and Lakes—A reparative intervention, film stills, 2024

1846, he became one of the most influential “scientific” racists of the 19th century. Following the theory of polygenism, he believed that human groups had different origins and that, in the social hierarchy, Whites were on top and people of color and Blacks at the bottom. Furthermore, he not only advocated strict racial segregation in his letters to **Samuel Fridely Howe** of the Freedmen's Inquiry Commission, but also suggested legislation for people of color that would “accelerate their

disappearance from the Northern States.” Agassiz's thoughts on “racial hierarchies” and his warnings against “miscegenation” can be traced later in the theories (and practices) of hard-core eugenicists, admirers of **Mussolini**, Nazi propagandists of racial hygiene, Ku-Klux-Klan activists, and contemporary creationists.

This part of his history has mostly been passed over in silence. In 2007, Swiss historian and political activist **Hans Fässler** took the Agassiz bicentenary as an opportunity to found the activist campaign “Demounting Louis Agassiz”. It was aimed at renaming the Agassizhorn peak in the Swiss Alps (elevation 3,946 m / 12,946 ft) to “Rentyhorn”. **Renty Taylor** was an enslaved man from the Congo, whom Agassiz had ordered (with six others) in

1850 to be photographed naked on the site of his suffering, a cotton plantation in South Carolina. From the accounts of his descendant, great-great-great granddaughter **Tamara Lanier**, Renty was able to read and was a spiritual man. This information was, of course, not documented when photographer **Josef T. Zealy** (1812–1893) was commissioned to make these daguerreotypes, with which Agassiz attempted to “prove” the alleged inferiority of Black people. The renaming of the Alpine peak was intended to honour Renty and all who endured similar fates. Fässler then formed a “transatlantic committee” in support of “Demounting Louis Agassiz”. I—visual artist-researcher **Sasha Huber** of Swiss-Haitian heritage based in Finland—became a committee member. In 2008, I started to engage artistically in the renaming efforts. First, in Switzerland with the symbolic, reparative renaming intervention, calling the peak “Rentyhorn”. Soon after, I continued this work elsewhere around the globe, including Brazil, Scotland, Switzerland (again), Aotearoa New Zealand, Canada (twice), the USA, and most recently Alaska—always in collaboration with local peoples and with Hans Fässler. The whole body of work has been exhibited and documented in the book *You Name It*, published at the end of 2022, initiated by *The Power Plant Contemporary Art Gallery* in Toronto and *Autograph* in London.

In Alaska I was looking to make contact with the Yakutat Tlingit Tribe to see if there was any interest among the Clans in developing new names for the Agassiz Glacier and the Agassiz Lakes. These are on the traditional lands of the Kwaashki'kwaan in the Malaspina Glacier area, in the borderlands of southeastern Alaska and northwestern Canada, respectively. The Agassiz Glacier was named in 1886 by **William Libbey**, a member of that year's New York Times expedition.

In 2022, I was introduced to Assistant Professor **Judith Daxootsú Ramos** from the University of Alaska. She kindly introduced me to Chief Operations Officer **Kaa Saayí Tláa**, **Amanda Bremner**, Cultural Heritage Director **Yéi Dika Kudaháan**, **Marry Knutsen**, and others. After several remote conversations, together with my cameraman **Jonathan Clabburne**, we arrived in Yaakwdáat (Yakutat) for the first time in August 2023. I was grateful to meet some of the community in person and to plan the journey to the glacier and lakes. On the first day, we were fortunate to meet Tlingit hunter, fisherman and skin sewing artist **Khaách Jeremiah James**, who was interested in joining us on the journey—the most important part of the reparative intervention. We were able to spend half a day in good weather conditions on the glacier, a half-hour helicopter

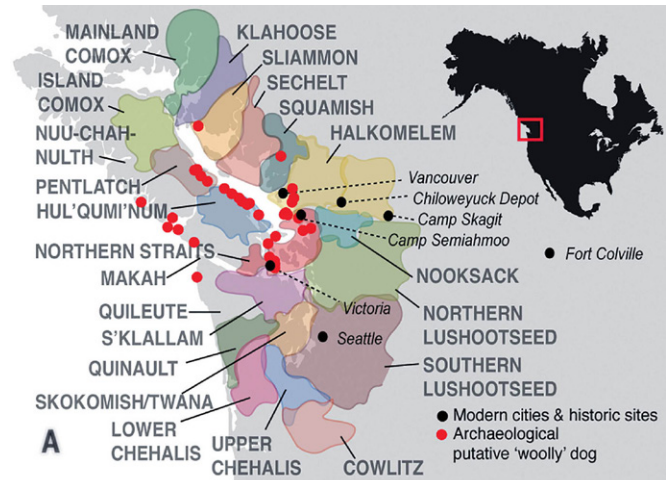
flight from Yakutat. We filmed the encounter in an incredibly beautiful landscape, and Jeremiah brought back a flask of glacial water for the future renaming potlatch ceremony in Yaakwdaat. Before that, the new name will be decided and hopefully made official. When that will happen is not yet clear, and it will be announced at a later date. Until then, I will be finalizing this short film, which I will present as a gift to the Tribe and show for the first time at the next *You Name It* exhibition in Sion, Switzerland, this year. Sion is in the Valais canton, which shares the summit of Agassizhorn, or rather Rentyhorn, with the canton of Berne.

RECLAIMING “MUTTON,” THE COAST SALISH WOOLLY DOG

By Audrey T. Lin

Ancestral Coast Salish societies in the Pacific Northwest kept long-haired “woolly dogs” that were bred and cared for over millennia, as supported by longstanding oral histories and traditional knowledge. Dog-wool blankets were prestigious cultural belongings, and were often blended with other materials, including mountain goat wool, waterfowl down, and different plant fibers. However, the dog wool-weaving tradition declined, and the population was lost by the third quarter of the 19th century. This decline in the cultural practice of dog-wool weaving had been attributed to the increased use of machine-made blankets by British and American trading companies in the early 19th century. However, this explanation neglects to consider the cultural importance of woolly dogs, as reflected through their enduring provision by weavers, particularly for high-status items such as regalia. These woven textiles were functional but most importantly, were spiritually protective and transformative within Coast Salish cultures.

Our aim was to investigate the ancestry of the woolly dog lineage, potential genes associated with the unique woolly phenotype, and the reasons for the decline of this important dog breed. To provide a cultural context for interpreting the genomic analyses, we interviewed seven Coast Salish Elders, Knowledge Keepers, and wool weavers about family histories and traditional knowledge surrounding woolly dogs. The interviewees



Map of Salish tribal areas (Courtesy of Science, the journal)

include several Coast Salish communities across both sides of the border, including Stó:lō, Squamish, Snuneymuxw, and Musqueam Nations in British Columbia and Suquamish and Skokomish/Twana in Washington state.

We analyzed genomic and isotopic data from a preserved woolly dog pelt and lower leg bones from “Mutton,” collected in 1859, and housed in the collections at the Smithsonian National Museum of Natural History. We found that Mutton is the only



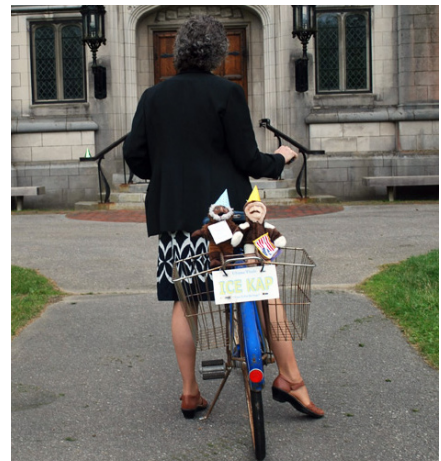
Left: Salish blanket and Mutton reconstruction of a woolly dog. (Photo by Smithsonian NMNH). Right: Fleece of George Gibbs' dog which he collected for the Smithsonian. (Photo: B1 - USNM4762_201808_002 NMNH Smithsonian)

known example of an Indigenous North American dog with dominant precolonial ancestry that postdated the establishment of settler colonialism. Molecular clock analyses that estimated the timeframe of Mutton's maternal lineage, suggest that his woolly dog lineage is between ~1,800 to 4,800 years old. We found that Mutton primarily has Indigenous North American

dog ancestry, but also a small proportion of European settler dog ancestry, roughly on the order of one-great-grandparent. We detected genetic signatures of inbreeding that is often seen in individuals that come from small breeding populations. We also identified 28 candidate genetic variants potentially linked with the dogs' distinct woolly phenotype, including genes linked to skin, hair follicle development, and unique hair morphology such as woolly hair in humans.

Finally, we integrated these data with the ethnographic interviews and historical information. Woolly dogs were disappearing by the time Mutton lived with the Smithsonian's Northwest Coast collector, **George Gibbs**. By 1857, in the Stó:lō territory where Gibbs most likely acquired Mutton, the settler population only consisted of a few dozen people, mainly fur traders. In 1858, more than 33,000 miners flooded into present-day British Columbia as part of the 1858 Fraser River Gold Rush, which had set off conflicts between miners, colonial governments, and Indigenous peoples. The partial contribution of European settler dog ancestry in Mutton's genome is reflective of the turbulent upheavals during this time. The loss of woolly dog is also attributed to the loss of the human caretakers of the dogs, due to the compounded toll of smallpox epidemics and steady depopulation due to infectious diseases between the 18th and 19th centuries. Residential schools that involved the forcible removal of children from their families and prohibiting languages other than English had further disrupted the transference of cultural knowledge. These compounding waves of colonialism interrupted the transmission of important knowledge relating to woolly dog husbandry and wool processing, spinning, and weaving. Contrary to what was previously thought, the dog-wool tradition was not abandoned because of the ready availability of important textiles. Today, Coast Salish weavers and artists continue to promote the preservation of traditional wool weaving, seen as sacred and honoring their ancestors.

[*Editor's note:* This research was published as 'The history of Coast Salish "woolly dogs" revealed by ancient genomics and Indigenous Knowledge' in February in *Science* by **Audrey Lin**, **Logan Kistler**, and other co-authors]



THE JOHN AND LILE GIBBONS CENTER FOR ARCTIC STUDIES, PEARY-MACMILLAN MUSEUM

By Bernadette Driscoll Engelstad

With a series of celebratory events, the John and Lile Gibbons Center for Arctic Studies opened in May 2023, providing a striking new home for the Peary-MacMillan Arctic Museum at Bowdoin College. Sharply angular in form, the building's exterior façade shifts from shades of grey to somber black in the New England sunlight. An architectural gem, the airy mass timber-framed structure is punctuated by multi-story glass panels that offer expansive interior and exterior views. With two floors of exhibit space, classrooms, an archaeology lab, staff offices, and collection storage, the new building reflects the generosity and commitment of a multi-generational family of Bowdoin alumni with strong [family](#) connections to Alaska.

The Museum, named for Arctic explorers/alumni, **Robert E. Peary** (1856–1920) and **Donald B. MacMillan** (1874–1970), was founded in 1967 with an initial donation of over 1,000 objects and an extensive collection of photographs from Donald and **Miriam MacMillan**. Guided by Director **Susan A. Kaplan** and Curator **Genevieve Lemoine**, the museum holdings currently contain over 41,000 artifacts, photographs, archival media, and contemporary work by Inuit, Iñupiat, and Yup'ik artists.

In addition to highlighting artifacts from the Peary and MacMillan expeditions, the first-floor gallery presents Inuit hunting equipment and domestic items showing diverse regional styles of ulus, snow goggles, stone lamps, fur and skin clothing, dressed dolls and incised ivory carvings—all under the watchful eyes of Arctic wildlife exhibited on the ledge above. This gathering

Left: The new Peary-MacMillan Museum at Bowdoin College. Right: Peary-MacMillan director Susan Kaplan traveling with some illustrious passengers! Photo by B.D. Engelstad

of a full-size walrus, polar bear, musk-oxen, caribou, seals, fox, and waterfowl comprises an impressive treat for visitors, young and old. A kiosk showing video interviews with students and faculty underscores Bowdoin's ongoing projects and collaborative work with Inuit researchers across the North.

The expansive third-floor gallery showcases the work of contemporary Inuit, Inūpiat and Yup'ik artists with prominent displays of carved masks, painted skin and beaded clothing, embroidered tapestries and contemporary sculpture, prints and drawings. A major gift by California art collectors **Robert** and **Judith Toll** in 2009, complemented by other recent donations, has established a solid foundation of contemporary art by Inuit artists from across the Canadian Arctic. The sculpture by Michael Massie portraying the mythical figure Koodlapoodlalook—commissioned as a memorial tribute to Maine artist **Bryce Muir**—and the exuberant Sedna relief carving by Kinngait artist, **Oviloo Tunnillie**, are only two of the many masterful works on exhibit.

The inaugural exhibition, *Inuit Qinigaani: Contemporary Inuit Photography*, curated by Inūpiat photographer **Brian Adams** emphasizes the museum's effort to further strengthen connections with artists and cultural leaders across the North. Individually and collectively, the works of these five photographers—**Jenny Irene Miller** (Alaska), **Jennie Williams** (Labrador), **Niore Iqalukjuak** (Kangiqtugaapik/Clyde River, Nunavut), **Minik Bidstrup** (Greenland), and **Brian Adams** (Alaska)—offer a provocative link to the archival media on display, thoughtfully juxtaposing historical events and contemporary images across the Arctic.

Already the John and Lile Gibbons Arctic Studies Center has served as an important site for international

meetings and conferences related to Arctic issues. Moreover, the museum [website](#) offers virtual visitors detailed descriptions of current research projects as well as a unique opportunity to explore the collection by subject matter or key word. On a decidedly humorous note, the [webpage](#), “Where in the World are Robert E. Peary and Matthew A. Henson?”, reports on the tiny crafted figures of **Admiral Peary** and **Matthew Henson** who are known to accompany staff and alumni on expeditions at home and abroad.

CAMBRIDGE BAY'S KUUGALAK CULTURAL CAMPUS

By *Brendan Griebel*

Pitquhirmikkut Ilihautiniq / Kitikmeot Heritage Society (PI/KHS) is an Inuit-directed cultural center based in Cambridge Bay, Nunavut, and project partner of the Smithsonian's Arctic Studies Center. In 2021, the organization launched a program titled *Nunamiutuqaq* to better understand how Inuit vernacular architecture and environmental values can inform energy-efficient infrastructure in the North. Over the last century, Arctic infrastructure—from buildings to land development and energy grids—has heavily relied on concepts imported from the South, leaving little space for Inuit and local populations to express their priorities and knowledge for the creation of living, learning and working environments. *Nunamiutuqaq*, meaning “Building from the Land” in the Inuinnaqtun language, aims to explore how longstanding Inuit understandings of sustainability, which emphasize coherence and respect between human and natural environments, can be seamlessly integrated into contemporary Arctic communities.

The *Nunamiutuqaq* project has resulted in the creation of Kuugalak, a 2550 sq. meter language and cultural immersion campus in Cambridge Bay that combines indoor and outdoor facilities, highly customized workspaces and equipment, and experimental landscaping with local plant species for climate adaptation, nutrition, and cultural use. The name *Kuugalak* refers to the waterway adjacent to the campus site; one that local Elders say used to run wide and deep, but which was reduced to a small creek due to climate change. With a dual focus on



Left: The second floor gallery looking down on first floor exhibits. Right: Inuit art from across the North American Arctic. Photo by Bernadette Driscoll Engelstad

climate adaptation and cultural revitalization, the new campus will draw from deep reserves of Inuit and local knowledge to foster innovation and enable knowledge and connection to landscape to once more flow deeply through the community.

In the fall of 2023, PI/KHS reached a major milestone in this project through the construction of a pilot 1300 sq. foot cultural workspace on the property. Designs for the building were drafted by local Elders based on physical memories of living in *igluit* and *tupiit* (skin tent) structures, incorporating their traditional strategies for light and temperature, circulation of air and venting, and spatial affordances for specific cultural activities. Key design considerations include the addition

of culturally-aligned flooring, with differential heat and surface material distribution to accommodate warm, soft areas for sewing and floor-based activities, and cooler, hard surfaces for meat butchering and skin preparation. The building's storage strategies mimic iglu entrance/vestibule designs with cold-trapping characteristics, allowing for skins, food, and tools to be cooled by outdoor air to their respective, optimal temperature profiles. Most importantly, the building was created to physically fit Inuit. With interior design led by **Nicole Luke**, Canada's first professionally accredited Inuk architect, the space's fixture heights, furniture and equipment have been entirely customized by local Elders and cultural producers to maximize the comfort and efficiency of those occupying and using the space.

As much as this building is a testament to old ways, it is also a monument to the future of Inuit culture. Climate change is an escalating concern in the Canadian Arctic, an area that sees the onset of change happening at rates between three and four times more rapidly than elsewhere in the world. Through partnership with the Green Building Technology Access Center at the Southern Alberta Institute of Technology, PI/KHS is positioning *Kuugalak* to

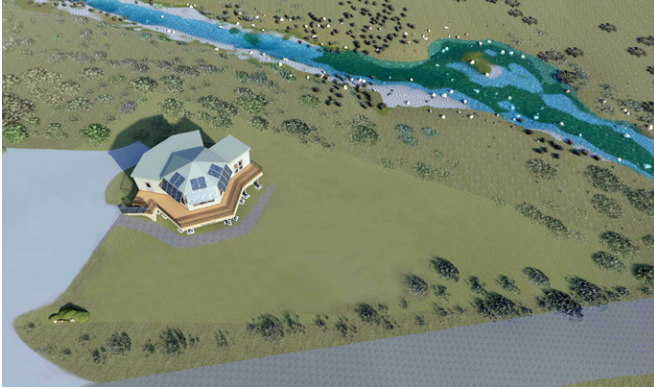
become the first net-zero targeted construction project in the Canadian Arctic. The space draws much of its electric power from a large photovoltaic awning and window system, designed to absorb heat during cooler months when the sun is low, and prevent passive solar heat buildup during warmer summer months of 24-hour sunshine. The entire structure is built from mold and fire-proof modular paneling, whose insulative value reduces energy needs by roughly 1/3 of traditional builds in Nunavut. Over the next two years, *Kuugalak* will become a testing ground to explore local ideas for energy islanding, which uses distributed renewable energy and battery storage systems that can operate independently of the community's diesel-fueled power grid. Arctic energy islanding has become increasingly important with the onset of extreme weather events and climate change, as it provides a means to continue operations, backup data, and generate warmth and light during periods of primary grid failure, leading to greater sovereignty and resilience in local communities.



Top: Kuugalak's Elder design committee overseeing the unloading of construction materials. Bottom: The Kuugalak workshop under construction. Photo by Margaret Thompson Photography

In terms of wider research applications, *Kuugalak* was designed for scalability and replicability across the North. To date, there is very little documentation as to what building materials, technologies and strategies are effective in Arctic climates. The new

structure's performance is accordingly monitored to produce a robust body of data to better understand the impacts of building typology, system, and material selection. With dozens of sensors providing real-time data on performance in areas such as thermal transfer, water usage, electrical consumption, room temperature and humidity management; and envelope/wall systems, the team is able to observe the building's real-time and long-term adjustments to changes in weather, occupancy and its surrounding landscape, drawing closer to Inuit understandings of built environments and animate spaces. Six families in Cambridge Bay have volunteered their own houses for additional monitoring, helping the team build comparative information across multiple different building, electrical, and mechanical types.



An early rendering of the Kuugalak campus site

As a community-led, designed, and built project, *Kuugalak* serves as an important case study in how Arctic knowledge and capacity can be partnered with modern materials and technologies to innovate at the intersection of architectural design, energy sustainability and cultural production. The campus plans to initiate its comprehensive programming schedule in March of 2024 with the delivery of daily, free public workshops relating to language, culture, and environmental sustainability. Additional information about the campus and its construction—including progress reports, monitoring results, and open-access research data—can be found on its [website](#).

REFLECTIONS ON A CONFERENCE AND VISIT TO THE NEW BEDFORD WHALING MUSEUM

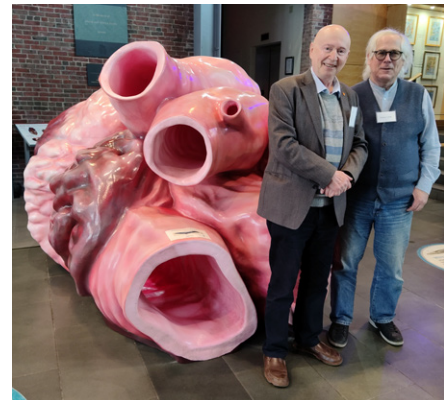
By Stephen Loring and Igor Krupnik

In March 2023, at the kind invitation of **Naomi Slipp**, Chief Curator of the New Bedford Whaling Museum, **Igor Krupnik** and **Stephen Loring** were invited to a symposium titled *The Wider World and Scrimshaw*, in anticipation of an exhibit with the same name to open at the museum in 2024. The curatorial and exhibition staff at the museum convened the symposium with 12 invited speakers to bring together researchers familiar with the cultures and artifacts of the Indigenous peoples of the Pacific Rim and the encounter they had with the 19th-century New England whalers. In characterizing the symposium and the future exhibition, Dr. Slipp wrote, “*Wider World* aims to radically redefine settler colonial notions of scrimshaw to encompass the broad global traditions of ivory carving across the Pacific Rim that sat in conversation with, influenced, and were influenced by Yankee scrimshaw.” An eclectic gathering of anthropologists, museum professionals and art historians spoke about the interactions and influences of the Yankee whalers—and the economic and socio-political changes they forecasted—on

indigenous communities in Hawaii, New Zealand, and the Arctic coasts of Siberia and Alaska as revealed (for the most part) by worked “ivory” objects, mostly of sperm whale teeth, walrus, and fossil mammoth tusks.

In his presentation, “From talisman to trinket: ivory art and industry in the Bering Straits,” Stephen Loring contrasted the world views of Yupik, Chukchi, and Inupiat and the centrality of their all-encompassing rapport and respect for the animals who shared their ancestral homelands, with that of expanding Western/Global economic influences. Some indications of the pervasiveness of change were apparent in the emergence of ivory carvings—trinkets, souvenirs, cribbage boards—created for an export market in the wake of the 19th-century whalers, prospectors and government administrators that stand in stark contrast to earlier charms and amulets and the narrative accounts on ivory bow-drills.

Igor’s paper, “The Bering Sea Meeting/Market Place: Making ‘Hybrid Arts’ and Trading It,” addressed the unique status of the (northern) Bering Sea-Bering Strait region as a historical ‘crossroads’ of peoples, cultures,



Loring and Krupnik beside the NBWM life-size model of a blue whale heart

and artistic forms, styles, and traditions. It was also the area where, since time immemorial, people had access to ample resource materials for making art, such as walrus tusks and teeth, animal skins, baleen, animal bone, grasses, and driftwood. Thanks to extensive work by archaeologists since the 1920s, we know of two different traditions of aboriginal walrus ivory carving, one featuring 2D engraved images and the other excelling in 3D sculptural forms, often lavishly ornamented.

During the late pre-contact era (1500–1800 CE) both artistic traditions evolved to being highly symbolic in imagery, laconic in style, and following established image canons. When American whalers arrived at the Bering Strait in the 1850s, they introduced a very different tradition of ‘scrimshaw’ carving, one that was detail-rich, naturalistic in style, with high image density, and generally mimicking European popular painting of the time. Thus, the history of the contact-era interactions in the Northern Bering Sea included



Clockwise: far left is Northwest Coast Mortar (Tlingit). 2001.100.2221: Gift of the Kendall Whaling Museum. Photograph courtesy New Bedford Whaling Museum. Top right: Smithsonian naturalist Frederick True (1858–1914) holding a similar specimen; middle right: a Bering Strait walrus ivory harpoon rest from Smithsonian collections; lower right: Detail of Inuit “scrimshaw” drillbow art, SI-45020

not only bringing ‘guns, germs, and steel’ (and liquor!) and commercial overhunting of whales and walruses, but also trade in manufactured goods in exchange for Native products, such as baleen, walrus tusks, decorated ivory, and emerging ‘tourist’ art.

In this ‘arts in contact’ situation, both sides borrowed, copied, and traded each other’s art forms; they also created new ‘hybrid’ art products, such as ornamented cribbage boards, paper knives, bracelets, napkin rings, but also more ‘Native style’ objects, like lavishly ornamented ivory pipes and small human figurines—the famous ‘billikens.’ As Igor argued, this remarkable story of cultural interaction at the Bering Strait crossroads included early anthropologists and museum collectors (who favored more ‘traditional looking’ forms), the burgeoning souvenir trade in Indigenous objects and frontier curios out of the city of Nome (after 1898), and the emergence of highly professionalized local

Indigenous artists who made their living by producing new types of Native art for sale to museums and tourists.

Prior to the formal symposium the conference participants were invited to briefly tour a carefully selected group of objects selected by **Michael Dyer**, Curator of Maritime History, that spoke to the world-wide range of the whaling industry whose participants brought back objects from far-away peoples and cultures—and to the incredible diversity of the Whaling Museum’s holdings, including unique objects and curiosities that predate the systematic collecting activities of anthropologists.

One such object, a large whale vertebrae carved in a tradition of Northwest Coast iconography caught the attention of the Smithsonian anthropologists for its striking similarity to a well-known photograph of **Frederick True** (1858–1914), a prominent Smithsonian naturalist holding a similar specimen. The chance encounter with the New Bedford Whaling Museum’s specimen is featured in the following account by **Stephen Godfrey**, Curator of Paleontology at the Calvert Marine Museum in Solomons, Maryland, which appeared in *The Ecphora* (Vol.38 #3, September 2023), the newsletter of the Calvert Marine Museum Fossil Club, and here, slightly edited with permission:

“...pictured is Dr. Frederick W. True, mammalogist at the National Museum of Natural History, The Smithsonian Institution. True first came to the Smithsonian as a clerk for the U.S. Fish Commission in 1878. In 1881, he became the acting curator of mammals and a librarian and in 1897 advanced to Head Curator of Biology. Later, he served as Assistant Secretary of the Smithsonian Institution from 1911, until his death on June 25, 1914. He was the first person who could be termed a curator of marine mammals at the Smithsonian because he studied both living and fossil baleen whales. In August, I [Stephen Godfrey] sent an email to **Leslie Overstreet** (Curator of Natural-History Rare Books) at the Smithsonian describing my interest in trying to find the whale vertebra that True was holding. Notice that it had been carved into a stylized raven. Apparently, that vertebra has been missing for many years...but wouldn’t it be great to find it? Thanks to Leslie, my initial inquiry was

cc'd and forwarded until it caught the attention of Dr. Stephen Loring, Archaeologist in the Department of Anthropology at the Smithsonian. His response was:

'Like yourself, and others, I too have wondered where this object d'art might have wandered off to. It doesn't appear to be in the Smithsonian collections, but I do have an abiding faith in the permanence of material objects and suspect it is somewhere. Somewhere obscure. Imagine my delight earlier this summer when visiting the New Bedford Whaling Museum, I was shown a NWC (Northwest Coast) carved whale vertebrae that—for a moment—I thought might be the lost Frederick True specimen. But alas it is not, although I am pleased to see that there are at least two similar versions of the same theme/idea. The New Bedford specimen was fashioned as a tobacco humidor and appears to be an eagle rather than a raven. Sadly, the New Bedford Museum specimen had been acquired at an auction and comes with next to no provenience information.'

Both Michael Dyer (Curator of Maritime History at the New Bedford Whaling Museum) and **Emma Rocha** (Curatorial Assistant) provided the following information on the carved whale vertebra in their collection:

'Northwest Coast Mortar (Tlingit), c. 1800–1900. Whale vertebra, 6.1 x 10.5 x 9.75 in. (15.6 x 26.7 x 24.8 cm.). Fashioned in the traditional manner; carved in the form of a bird's head, and incised/carved with a stylized human face and octopus tentacle/sucker motif. Whale vertebra (either neck vertebra of some larger species or spinal vertebra of an orca). Probably intended for grinding tobacco, it is fashioned in the traditional manner from a neck vertebra of a gray whale. The dominant image is a thunderbird head that, when the mortar is place upside down, becomes the head of a wolf or fox. It also has a stylized human face and octopus-tentacle suckers. Mortars of this kind were made from the neck and spinal vertebrae of gray whales and orcas. Analogous mortars were also gouged out of stone. Interestingly with respect to the carved decorations, this specimen is right-side-up when it is placed bowl-side-up for use and is also right-side-up when inverted for storage.'

As of winter 2024, we have not heard yet about the progress of the exhibit for which we attended this inspirational symposium on the cultural interactions between Yankee whalers and Indigenous whaling nations across the Pacific. But exhibits commonly take longer time to prepare than is initially thought. Meantime, we are considering another joint visit to the New Bedford Whaling Museum in 2024 to continue our explorations of its vast holdings related to the Arctic.

EMMANUEL KORNELIUSSEN AND THE 2023 DELMARVA PADDLER RETREAT

By Kenneth Michael Hamilton

Bridging the divides of time and culture, a few hundred *qajaq* paddlers in the United States have created a means by which the ancient *qajaq* technologies and techniques of Greenland (Kalaallit Nunaat) are preserved, propagated, and practiced locally. Please note that *qajaq* refers to a hunting craft of traditional construction; kayak refers to a *qajaq*-like craft of modern materials (*qajariaq*).

Qajaq USA is a nonprofit membership organization that is officially recognized by Qaannat Kattuffiat, the Greenland Qajaq Association. Committed to supporting the preservation, study and promotion of traditions and techniques of *qajaq*, Qajaq USA holds regional events in Delaware, Florida, New York, Michigan, Minnesota, and Washington. Events offer paddle skills classes (rolling, rescues, strokes, harpoon throwing) and workshops including paddle carving and *qajaq* building. The Delmarva Paddlers Retreat is a Qajaq USA event which occurs annually on Rehoboth Bay in Lewes, DE. In October 2023, 85 paddlers participated in the 34th annual gathering. In addition to learning and practicing new paddling skills, this year's paddle carving workshop produced nine new paddles and the *qajaq* build workshop constructed five West Greenland, two Aleutian *Iqyax* and one King Island *qajaq*.

The theme of this year's event was "Giving Credit Where Credit is Due." To achieve this goal, we had two objectives: 1) retell the story to the newest generation of paddlers of how a *qajaq* from Illorsuit, Greenland became the inspiration for the design of what would ultimately become the modern production sea kayak and 2) highlight and thank the man who built that *qajaq*.

In short, here's the story of the birth of the modern sea kayak. In 1959, **Emmanuel Korneliusen** of Illorsuit Island built two *qajaq* frames: one for **Ken Taylor**, a visiting Scottish Anthropology student at the University of Glasgow and one for historian **John Heath** of Texas. After a successful and popular series of demonstrations in Scotland, Taylor left the *qajaq* with friends **Joe Reid** and **Duncan Winning** and moved to the United States. In 1964, Duncan Winning measured the *qajaq* and produced a line drawing which was later used by **Geoff Blackford** to make a plywood version named the "Anas Acuta" (Northern Pintail). **Carel Quaife** and **Alan Hyde** adapted the design to fiberglass and then sold the design to **Frank Goodman** of Valley Canoe Products, Nottingham, England. The fiberglass Valley Anas Acuta was very popular and is still sold

today. Valley and other manufacturers used the Anas as inspiration and created a diverse array of kayak designs and the modern recreational sea kayak industry was born. This was not the only path of kayak evolution, but it is generally agreed to be the predominant one.

In 2004, Ken Taylor visited the Delmarva event and brought a *qajaq* which he had recently built using the survey drawing by Winning (the original Korneliussen *qajaq* is in the Kelvingrove Art Gallery and Museum in Scotland). He told the story of how he commissioned



Korneliussen to build the 1959 *qajaq* and his experiences while in Greenland. Before his passing in 2019, Taylor, with the help of his long-time friend **Vernon Doucette**, chronicled his Greenland experience in a [Wordpress article](#).

This year, we invited **Paninnguaq Korneliussen**, the granddaughter of Emmanuel Korneliussen, to attend our retreat and tell us more about her *aataa* (grandfather). Through sharing photographs and telling stories, Paninnguaq helped the audience get to know more about the man whose contribution formed the genesis of modern kayaking. Further, she helped us to see that the *qajaq* means a great deal to the Inuit, both culturally and spiritually.

Serendipitously, participant **Mark Heatfield** of Virginia had just finished building a replica frame of the Korneliussen design prior to the retreat. Paninnguaq, Mark and Peter Strand held a skinning demonstration to complete the *qajaq* and in doing so, Paninnguaq followed in the footsteps of generations of Inuit women. Having only been in a *qajaq* twice before, once as a child, which manifested in a frightful experience, and once more recently as an adult, Paninnguaq was reluctant to try it again. After encouragement and with some guidance, Paninnguaq paddled the *qajaq*, even learning to lay on the water in a balance brace!

Paninnguaq also reported that she had complicated feelings about using a *qajaq* for a recreational purpose as *qajaqs* are held as sacred in her heart, especially due to her grandfather. After seeing other participants learning and practicing the ancient maneuvers and witnessing the respect that we give to *qajaqs* and the Inuit who created them, she said that she now understands why we do what we do. As to whether she is comfortable with it remains to be seen; she is still working through these complex intellectual and emotional issues. Are we appropriating or appreciating?

Paninnguaq helped us to see that this story begins with the Inuit, not the European white man. She is justified in feeling both proud of her heritage and angry at those who benefit from it at the expense of the Inuit. We will continue to celebrate and help preserve a slice of her cultural heritage and do it in a way that is respectful, caring and gives credit where credit is due. While recognizing that kayaking comes from a place of necessity, hunting and migration, we must also recognize that kayaking meets the modern need for recreation, spirituality and growth.

By the way, the Inuit word for “thank you” is “*qujanaq*.” *Qujanaq*, Emmanuel Korneliussen!



Top: Group shot. Photo by Peter Gengler.
Bottom: Paninnguaq sewing boat cover. Photo by Mark Heatfield

MY HERITAGE, MY AATAANNGUA, AND THE WORLD

By Paninnguaq

First, I would like to thank **Igor Krupnik** and **William Fitzhugh**, for this opportunity to tell my story, and **Mike Hamilton**, who invited me to give a talk at the Delmarva *Qajaq* Event.

Second, I would like to recognize my heritage, and foremost, my family heritage. I would not be here without their lives hard work and, and for that I am forever grateful.

My mother **Birthe** was born in Illorsuit (Ummannaq) in 1956, one of nine siblings. Her mother died when she was about five and left her dad at a very young age to become a “*kiffaq*”(domestic helper) for the local store manager. Of the nine siblings, only three are still alive. **Rudo**, 70, my mom, 67, and **Lars**, 64. The two

brothers live in a small village in Tasiusaq, a village located north part of Greenland near Upernavik. They are both fishermen and risk their lives every day to provide for their families.

My mom's life was marked by her early struggles, but she managed to get an education and eventually had a very happy life. She now lives in Faroe Islands with her husband and is retired. She never knew how much an impact her father had before I, by a coincidence, found his name in a paper written by a Scottish man named **Cameron Taylor**. Little did I know how much an impact my granddad had to the whole *qajariaq* world; little did I know that someday I would be invited to the USA to talk about him.

My memories of my grandfather have always been very clear. His warmth and lovable person were my safe space. I still remember the smell of his cigars. I had him in my life for a very short period, and yet he meant a lot to me. We never spoke to each other, partly because of a brain hemorrhage in the early 60's. But somehow, we understood each other. I visited him at the elder's home when my mom was at work and spent time with him. I asked him questions without expecting answers. Oh, I wish he knew how much he meant to the world.

His life story wasn't easy and was marked by the fact that he came from a home where he lost his father when he was three and had to move from Upernavik to Illorsuit, maybe because of better hunting conditions, or maybe just to start over again. He ended up being a foster child to some family relatives-

He was born in Upernavik in 1906, with his mother **Karen**, father **Hans Ole**, with his two other brothers **Joas** and **Ludvig**. (We have no information about other siblings). He lived a life as a hunter for years, married and had children. Then his wife died, making him a widower with six children. We don't even have a picture of her. Then he married again and had three more kids my two uncles and my mother.

There was a story in the family about a white man who came to Illorsuit in the late 1960's and stayed for a year, and that my grandfather **Emmanuel** made a *qajaq* for him. They didn't know why this *qajaq* was made, but maybe Emmanuel needed some income. Cameron promised to write him a letter, but maybe because of miscommunication this didn't happen.

Emmanuel continued to live his life in Illorsuit as a hunter, using a *qajaq* to provide for his children. But in the early 1960's he had a stroke that paralyzed his right side, and he lost his speech. He ended up having his children taken away from him, and after that an accident resulted in his arm being amputated. He then moved to the elder home in Uummanaq. All this time, he never knew that his *qajaq* made a huge difference for a lot of people around the world. Without his knowledge, some white men used the *qajaq*'s measurements to make benefits for themselves, without giving him a voice,

without letting him know how much an influence he had given to the history of the modern *qajariaq* around the world.

Why shouldn't he be credited for his work? Why didn't his name ever make it to the wider world? I



Left: Paninnguaq. Center: Me and my aataa Emmanuel Korneliussen. Right: Emmanuell Korneliussen



My mom with her brothers, when they met each other again after 30 years apart



Paninnguaq practicing a balance brace. Photo by Mark Heatfield

asked Cameron Taylor if he'd ever reached out to him, and he did. But Emmanuel's conditions prevented him from making contact, because of his location, misunderstandings, and not able to speak English, or even Kalaallisut. But this should never be an obstacle for giving him the credit he deserves. When I saw the impact of his work and told my family about

how this *Anas Acuta* (Taylor's name for the *qajaq*) had an impact on the world, I was angry. I was very sad that he never knew how his lifework wasn't credited. I knew how hard his life had been, and maybe it could have been easier; maybe his children wouldn't have left, and he could have been living in Illorsuit until his death.

He died in Ummannaq in 1988, surrounded by some of his children, and me. I asked my mother who worked at the hospital if she could wake him up, because I didn't want him to sleep anymore. I kissed him goodbye, and that is the last memory I have of him. The funny thing is, that every single step I've been taking in my education was for him, to do his life story justice. To make him matter for more than me and my family. I never thought of him as a man who just survived, I saw him as a man who made a huge sacrifice for himself to give a better opportunity for his children. He didn't have an education. But that was never an obstacle. He was a humble man with a disability and could not speak, but always had a smile on his face, lived his life with huge losses, and tried his best his best to keep his family together, but failed. And that is okay. Or was it? Could things have been different if he, and the rest of the world knew him as I did? Would you ever consider who this Inuk man was from Cameron Taylor's writing if I had not contacted him? Should his name have been forgotten along with his huge impact on *qajariaq* world?

I never saw him as a man who couldn't do much, but more as a human being with only love for his surroundings. I loved to sit close to him and smell his cigar-smelling clothes and loved his laugh. He could laugh without a sound and smiled at every person

near him. I loved how he always offered me sweets without my mom's knowledge. And that is my heritage. My heritage has taken me to the USA. He made me travel more than 1,000 kilometers to give him voice again. Me, Paninnguaq Korneliussen granddaughter of Emmanuel Korneliussen, who has a voice, speaks multiple languages, is fortunate enough to have an education, so I can give him the voice he lost. I am forever grateful to have this kind of heritage, that my history did make a change to the world. I could not be prouder of my last name and my Aataanngua Emmanuel. The question is, can you give him the credit he needed, not because out of pity, but because of respect for him and for his legacy in the western world.

NARWHAL RESEARCH OF THE GLOBAL STAGE

By Martin Nweeia

I2I, the integrated knowledge model combining science and Inuit knowledge was discussed at three global conference venues by Dr. **Martin Nweeia**. The new method and approach for teaching science was announced at COP-28 in Dubai at the Technology Hub and at the Innovation Center for Dubai's Electricity and Water Authority. Based on six modules: Knowing, Observing, Change, Adaptation, Sustainability, and Gratitude, Nweeia's research in the high Arctic of Canada and Greenland has brought Inuit *Qaujimagatuqangit* (way of knowing) and *Isuma* (thinking) to the forefront of educational models. The Gratitude module was part of the opening remarks for the Harvard Business and Salata Institute Forum at COP-28, and the Sustainability pillar was the focus of Nweeia's comments at the Harvard-Crossroads Summit and 2030 Vision in Riyadh, Saudi Arabia.

The research value and input from Inuit Knowledge is the focus of a newly released article from Dr. Nweeia in the *Journal Annual Reviews of Animal Biosciences* entitled 'Biology and Cultural Importance of the Narwhal'. Among the noted findings are the first vocal recordings of narwhal sound files demonstrating a unique characteristic of cetacean's ability to carry a low frequency sound on a high frequency wave to create directed sound. The second result compares the homologous unique dentinal tubules found in narwhal with those in the Miocene *Odobenocetopsidea* housed at the Smithsonian. A third significant finding helps to explain the unusual flexibility of the narwhal tusk, able to bend and flex 12 degrees in all directions over a 6-foot section. Descriptions of the mineral to collagen ratios in narwhal dentine, help explain the Inuit observation of a tusk that is flexible and bendable while swimming.



Martin Nweeia addressing questions following his presentation at the COP-28 climate conference in Dubai.

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THE THRESHOLD AT WHICH SNOW STARTS DISAPPEARING

By Zoë Schlanger (excerpted from The Atlantic, 12 January 2024)

In January 2024, at long last, someone has figured out a formula of sorts for how snow reacts to climate change, and the answer is: It reacts nonlinearly... In a paper published Wednesday in the journal *Nature*, two Dartmouth researchers report finding a distinctly nonlinear relationship between increasing winter temperatures and declining snowpacks. And they identify a “snow loss cliff”—an average winter-temperature threshold below which snowpack is largely unaffected, but above which things begin to change fast.

That threshold is 17 degrees Fahrenheit. Remarkably, 80 percent of the Northern Hemisphere’s snowpack exists in far-northern, high-altitude places that, for now, on average, stay colder than that. There, the snowpack seems to be healthy and stable, or even increasing. But as a general rule, when the average winter temperature exceeds 17 degrees (–8 degrees Celsius), snowpack loss begins, and accelerates dramatically with each additional degree of warming... 80 percent of the Northern Hemisphere’s snowpack exists in far-northern, high-altitude places that, for now, on average,

stay colder than that. There, the snowpack seems to be healthy and stable, or even increasing.

Already, millions of people who rely on the snowpack for water live in places that have crossed that threshold and will only get hotter. “A degree beyond that might take away 5 to 10 percent of the snowpack, then the next degree might cut away 10 to 15 percent, then 15 to 20 percent.” **Alexander Gottlieb**, the first author on the paper, told me... “Once you get around the freezing point... you can lose almost half of your snow from just an additional degree of warming.”

Gottlieb and his co-author, **Justin Mankin**, figured this out by looking at how changes in temperature and precipitation drove changes in snowpack in 169 river basins across the Northern Hemisphere from 1981 through 2020. Using machine learning, they found a clear signal that human-induced climate change was indeed forcing changes in the snowpack in the places where most people live. The sharpest declines were in the watersheds of the southwestern and northeastern United States, and in Central and Eastern Europe. “In places where we are able to identify this really clear signal that climate change has reduced spring snowpack, we expect that to really only accelerate in the near term,” he said. “Those are places where the train has already kind of left the station.”

Hydrologists already worry about the future reliability of the region’s snow-fed water supply. Previous research found snowless winters in the Mountain West are likely to be a regular occurrence by mid-century. But crucially, Gottlieb doesn’t see any room for cheerfulness about individual years with off-the-chart snowfall, such as last year’s record snowpack in the Colorado River basin. “This work really shows that we can definitely still get these one-off anomaly years that are incredibly wet, incredibly snowy, but the long-term signal is incredibly clear”. Once you’re over the cliff, there’s no going back. The snow will keep disappearing.

AMERICAN CENTER FOR MONGOLIAN STUDIES CELEBRATES ITS 20th ANNIVERSARY WITH A NEW STRATEGIC PLAN

By Paula T. DePriest, Charles Krusekopf, and William Fitzhugh

In 2024 the American Center for Mongolian Studies Celebrates (ACMS) is celebrating the 20th Anniversary of the opening of its permanent office in Ulaanbaatar. Over the past 20 years the ACMS has raised over \$6 million to support a wide range of programs aimed at building capacity and the Mongolian Studies

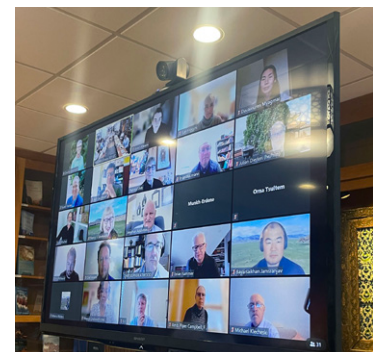
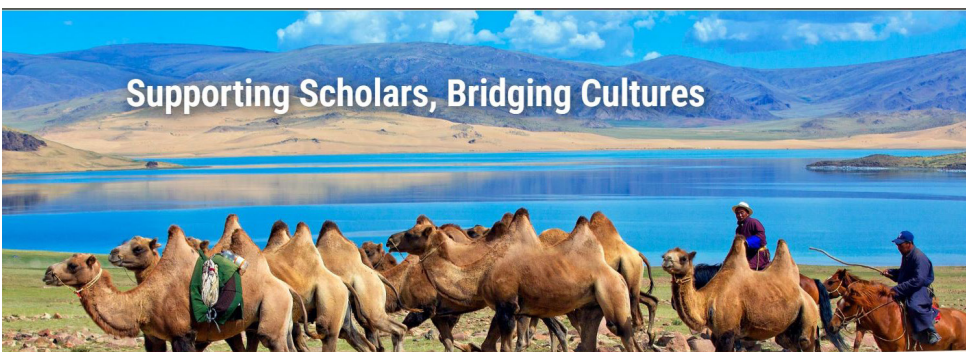
community through support for individual scholars, research, dissemination, resource development, training, cultural and physical heritage documentation and preservation, and partnerships. To support the continued development of the organization and field of Mongolian Studies, the ACMS has developed a Strategic and Operational Plan to guide institutional priorities and activities for the period 2023-25, with the intention to continue to review and update this plan on an annual basis. The Plan was developed by consultants Simon & Associates with support from the [Council of American Overseas Research Centers \(CAORC\)](#), a private, not-for-profit association of centers that research, conserve, and record cultural heritage and modern societies.

To support the development of the new Strategic Plan, Simon & Associates led a membership and stakeholder survey, interviews with key stakeholders, and a comprehensive review of the organization. The survey had 139 respondents, 25% identifying as university

the ACMS was becoming a leading institution for Mongolian Studies, recognized for its contributions to scholarship, cross-cultural understanding, and sustainable development in Mongolia.

The following near-term goals were highlighted in the Strategic Plan:

- Increase member engagement in all aspects of the ACMS
- Reconstitute an active Board which meaningfully participates in all aspects of the ACMS
- Diversify revenue streams to ensure long-term viability and the ability to meet the organization's mission.
- Build an organizational structure which supports the core administrative and programmatic needs of the ACMS and promotes employee engagement.



faculty, 20% as general researchers, 16% graduate of post-doctoral students, and 4% undergraduate students, with the remaining 35% selecting “other.” The survey results reinforced the need for focus in three areas—providing connection for researchers, maintaining a strong online library, and offering logistical support on the ground in Mongolia. Among all respondents the most pressing barrier to undertaking research in Mongolia was the lack of funding. However, Graduate and Undergraduate Students were more likely to cite lack of contacts or connections as a barrier, and for those who chose “Other”, the primary issue was language barriers, both in terms of their own skills and lack of qualified translators on the ground.

The Strategic and Operational Plan endorsed the current mission of the ACMS to support the development of Mongolian Studies and academic exchanges with Inner Asia through the development of academic resources, student and research support and the fostering of academic partnerships in all fields of study related to Mongolia. The Plan's vision for

To finalize the plan and clearly define a set of initiatives and goals that enable the organization to meet its mission for many years to come, the ACMS hosted, and Simon & Associates facilitated, a Strategic and Operational Plan Retreat, October 28–29, 2023, in-person at the Edward B. Bunn S.J. Intercultural Center (ICC), Georgetown University, and on-line via Zoom. At least 47 individuals participated in the two-day retreat. The group was excited about the potential for the ACMS but recognized that there is a lack of awareness about its overall mission, breadth of service offerings, and vision for the future. The group also realized that additional fundraising is necessary to fully meet the needs of the stakeholder groups the ACMS serves. Foundational work needs to be done on a number of fronts—membership database cleanup, bylaw refinement, donor list creation, external relationship building, physical infrastructure improvements in the Ulaanbaatar office, and technological enabling.

*ACMS strategic planning workshop zoom participants.
Photo by Adam Simons*

The Retreat group identified three initiatives as the next steps:

1. Membership Engagement—Use new software to reestablish our membership list (led by **Isaac Hart**, ACMS Resident Director)
2. Board 2.0—Establish a Nomination Committee and receive suggestions and nominations from the group (led by **William Taylor**, ACMS Board)
3. Fundraising—Develop a donation drive to support fellowships in 2024 to celebrate the 20th anniversary of our office in Ulaanbaatar and plan for a longer-term campaign to create a sustainable endowment for ACMS (led by **Charles Krusekopf**, ACMS Founding Director)

The ACMS has already begun work on all three initiatives with 2023-2024 membership and fundraising drives and naming of a nominating committee with a goal of seating a new board by summer 2024. In addition, the ACMS has named a new Residential Director for the Ulaanbaatar office—Dr. Isaac Hart. Members and stakeholders can follow our progress through our [website](#) and social media.

MONGOLIAN STUDIES CONFERENCES 2023, 2024

By William Fitzhugh

For the past several years the Arctic Studies Center has hosted, at the National Museum of Natural History, the annual Mongolia Studies Conference, organized by **Saruul Erdene** and the D.C. area Mongolia Cultural Center, Embassy of Mongolia, and the NMNH. Before the covid pandemic, when the NMNH Education Office had sufficient staff, the conference included a family day on Sunday that included display of traditional Mongolian costumes, artwork, children's games, and musical performances—even in one year, the erection of a full-side felt ger tent in the middle of the Q?rius hall. This has not been possible in recent years, when the Museum faced staff attrition, and so the 2023 and 2024 conferences were restricted to lecture formats. The Mongolian Embassy offered travel grants that enabled Mongolian scholars, artists, and performers to come to D.C. and present. In addition to presentations, the conference features traditional Mongolian food (yes, including khoshuurs!) prepared by DC area Mongolians for breakfast and lunch on both days. The event usually ends with a reception at the Mongolian Embassy.

This year the 2024 16th Conference was held in Q?rius on February 2 and 3 and featured opening remarks by Mongolian Ambassador **Batbayar Ulziidelgeriin**,

William Fitzhugh, and **Saruul-Erdene**, and panels on history and archaeology, literature, performing arts, the Owen Lattimore Studies Center, IT and Library Science, Arts and Culture, women's gender issues, and education. As in previous years, Saruul-Erdene and the Mongolia Center miraculously produced a volume of proceedings in time for the opening.

This year's conference was supported by contributions from the Mongolia Cultural Center, Arctic Studies Center, Mongolian National University of Art and Culture, Mongolian American Cultural Association, Pyramid Granite LLC, National Council of Language Policy, Mongolia. In addition to papers, the event included poster sessions, a photography exhibit, and a presentation by the American Center for Mongolian Studies. Much thanks to the Q?rius Center for the use of its spaces, and to Saruul-Erdene, **Nancy Shorey**, and **Narantseteg Tseveendulam** and others for planning, logistics, and fine Mongolian food.



Lunchtime at the 2023 conference. Photo by Alex Jansen

IMMERSIVITY AND THE FIRST-STEP-FOR-MANKIND INNOVATION OF SMALL WATERCRAFT

By Charlie Morrow

Extending podcast iMMERSE! with **Charlie Morrow**, the iMMERSE Helsinki event and media scheduled for October 2024 explores immersivity in art, science, technology, and philosophy. Audio environment reflects changes in air, ice, and underwater. Here is a [link](#) to the podcasts.

The goal is to raise awareness of immersivity in uniquely Finnish settings. Inspired by Arctic immersive environments, Arctic innovation of small boats and their effect on the world, we present forms of the immersive, free to the public in events and streaming, as follows.

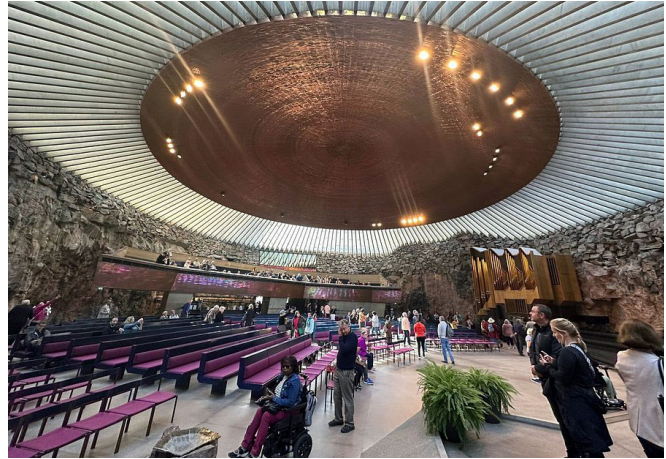
- iMMERSE! installation Studio Gallery. Kohta Taidehalli Helsinki: Oct 16–Nov 10, 2024. Charlie Morrow, **Bart Plantenga**, Forty iMMERSE! Podcasts: **William Fitzhugh** and **Harri Luukkanen**: the small arctic boats that changed history.
- iMMERSE! Concert at Church in the Rock. post streamed, free to public, Oct 24 19–22h, exploring spatial sound, music and arctic space in Helsinki's iconic sanctuary
- iMMERSE! Experience: Arctic atmosphere in Aalto Uni Acoustics Laboratory, Oct 25, hearing arctic sounds with discussion on their discovery and implications, 13–16h, bus ride to Kohta Taidehalli
- iMMERSE! Next step Talks and Music. Kohta Taidehalli: Studio Gallery Oct 25 with display of participants books, 17–20h.

My First Immersive Experience and Disruption

My view as a composer and sound artist is shaped by my intentional recall of experiences and sounds from pre-birth. From my mid-twenties, from roughly 1967 forward, I have been driven to spend years in the process of remembering back to that transitional moment.

I do it by identifying key sensory experiences, going back in memory time, milestone by milestone. The thrashing and squeezing of the birth passage is my starting point. As one experience is remembered, I mull it over and over until I can trust that it is true. Then I look back further into my memory for another milestone and so on. So as one perceptual bubble dissolves, another one becomes visible. Driven to return to earlier and earlier moments in my life, I get there and there is my earliest being. It is a place both large and small, somewhere nondimensional. It's an experience of listening to a world beyond my mother's body. There I am, timelessly floating from one moment to the next, more a sensory body than a physical body. I am part of a vibrating mass, my mother's internal organs—already listening, observing and remembering.

From that earliest awareness, my recollections of being can then be traced forward. In recollection, I then began to float forward in time, and everything began to make sense. This recollection turned into forward time travel, recalling the growing of my body and receptors. First came an awareness of sound followed by an awareness of bursts of light in what I would come to know as my eyes. Until birth, I am attached to my mother's umbilical cord and her chemistry



*Tempeliaukio Lutheran Church in Helsinki.
Photo by Charlie Morrow*

and emotions. Now, even as an old guy, I think that I can at will mentally return to points in my life to re-experience them, a moment of *deja vu* of sorts, my first experience-bubble in essence. What follows is the story of many more experience-bubbles.

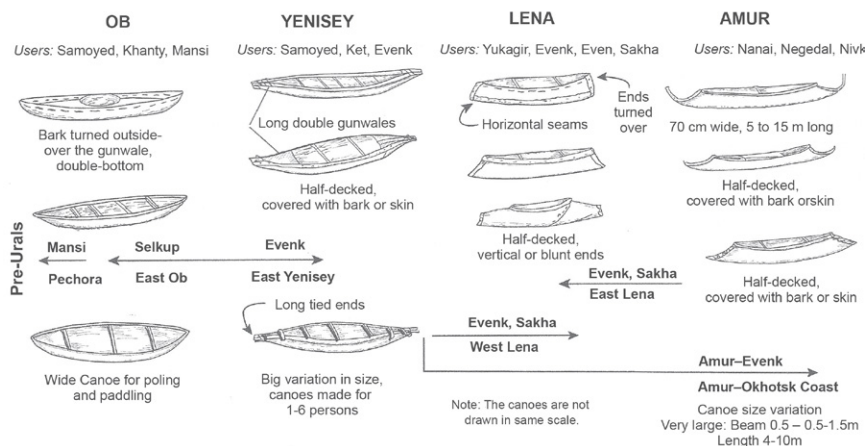
Exploring Immersivity Through Interviews with Collaborators in Immersive Experiences

The book and podcast, iMMERSE!, is a collection of interviews and writings about immersive experience components and design from prehistory to the future. It is a story about the bandwidth of human perception from a pre-birth, birth and media point of view. It is the story of making observations in that bandwidth and of breaking the boundaries, going beyond. My work proceeded one project with its team of collaborators at a time. The timeline is the conceptual spine of this book. I could not have made this professional and reflective journey alone. It unfolded in collaborations that opened doors.

The celebration in Helsinki is staged the famed Rock Church where all attending are surrounded by ancient rock. All music and arctic soundscapes presented engage the rock environment.

All of Us Have Our Own Immersive Experiences and Memories

There are over 200,000 years of human cultural experiences without electricity, and only about one and a half centuries of technological media such as photography and film. These technologies are paradigm shifts that alter all our experiences. Technological interruptions of experience-bubbles stretch and expand the locus of life. These disruptions tend to point both to our origins and our future technologies.



Harri Luukkanen's sketches of bark canoe types across Siberia, by river systems. (from Luukkannen and Fitzhugh 2020: fig. 2.2)

What is raw immersive experience?

In the earliest days of our species, there was live performance, which was simply life as it happens and human memory. The spell of attention was something that involved total engagement. Our senses were available to instantly detect activity so we could negotiate the challenges of survival, action, and reproduction in real time. Our memories stored information to help inform and identify, reflect and project. Scientists have looked for parallel processes in other species, each with their own bandwidths of experience.

For a sound person like me, it is striking that before sound recordings and playback, sounds were uncaptured and originated solely from events that occurred in life, in the here and now—such as birds singing in a tree, the wind blowing through tall grasses, or people singing songs just for us. Actually, we continue to experience a world of life events only in realtime, if we consider playback as always being a part of the now.

In our Barton, Vermont home, I love to hear the wind arriving in the forest near us and continue on into the distant forest past us. I do not believe that it is only humans who experience this sensation. Sound moving through space speaks to us. We hear it moving near and far (the Doppler Effect). But so do other sonically responsive lifeforms.

The Disruptive Innovation of Small Arctic Watercraft

In prehistoric times, small boats provided the first disruption of the bubble in which humans were bounded by the locus of where our arms and legs propelled us. Before small watercraft, the places where we were born and live formed a bubble that described our perspective and territory of life activities. With

these small craft we were able to start to live on as much of the Earth as we could navigate. This story is well told in William Fitzhugh's interview for iMMERSE! and in the Harri Luukkanen and William Fitzhugh book, *The Bark Canoes and Skin Boats of Northern Eurasia*, published by Smithsonian Press in 2020.

Thus, the history of bark canoes and skin boats is not simply a history of boats; it is also, inescapably, a history of the peoples who built and used those boats for many millennia to master waterways; to migrate, fish, trade, wage war, and spear reindeer at river crossings; and to hunt seal, walrus, and whale on bays and oceans. This way of life became imperative at the end of the Pleistocene, 12,000 years ago, when forests expanded and human hunters and environmental change resulted in the extinction of mammoth, mastodon, and other tundra and taiga megafauna. No longer could people count on large stocks of land mammals for food, fuel, clothing, and construction materials. Melting permafrost and advancing forest cover required them to develop new ways of life that depended on waterways for transport, communication, and food. Fish and sea mammals became an important part of the human diet. Without the invention and refinement of the bark canoe and skin boat, hunters and fishermen, their families, and their peoples never could have survived Northern Eurasia's harsh climate and environment.



Holiday card from the Alaska State Library and Archives staff, Courtesy of Director Amy Phillips-Chan, December 2023. Photo by Brian Wallace

RESEARCH

EXCAVATING A 16th CENTURY BASQUE WHALING STATION IN ST. PAUL RIVER ON QUEBEC'S LOWER NORTH SHORE

By William Fitzhugh



Figure 1: Aerial view of Bonne Espérance-4 excavation. North to right. Photo by Francisco Rivera-Amaro

Twenty-three years of ASC research on the Quebec Lower North Shore concluded in 2023 with the excavation of a small Basque whaling station, Bonne Esperance-4 (EiBk-61) on Bonne Esperance Island. The site is one of two small Basque stations discovered by an ASC-University of Montreal team in 2019 on a protected waterway known to local fishermen by its 16th c. Basque-derived name, 'Chaloupe [i.e. small boat] Channel'.

BE-4 is located on a shore ledge on the west side of Bonne Esperance Island where the hillside drops steeply to the shore. The narrow ledge was cramped, but it served the Basque requirements for butchering whales, constructing ovens, assembling barrels, preparing food, and bringing *chaloups* and small ships alongside. Another requirement was protection from wind and sea swell; narrow Chaloupe Channel met that need as well, as it is only a short distance from the whaling grounds of the open Gulf.

Excavations were conducted in a 5-meter wide strip of shore ledge.



This space was suitable for Basque activities, but it collected precipitation from the hillside that resulted in a 50-60 cm of peat and low shrub vegetation, making the excavation pits into major water-collectors. In the northern part of the site, we excavated 40-60 cms of sterile peat to reach the Basque occupation level with its roof tiles, charcoal, wood, nails, and ceramics. Peat build-up was less extensive in the southern part of the site, where bedrock was close to the surface. BE-4 has three structural zones: **Zone 1**, a southern area consisting of a stone wall ending in a pile of boulders; **Zone 2**, a refuse pit at the north end of the boulder pile; and **Zone 3**, a domestic work area north of the refuse pit extending to the north end of the site. Eighty-eight square meters were excavated.

The Zone 1 wall was constructed with layers of laid-up rocks positioned 2-meters west of a ledge outcrop (Fig. 2a, b). A midden of charcoal mixed with burned, broken, and blubber-encrusted rock and tile extended from the wall to the shore. The wall seems to have been constructed as the foundation for a timber frame structure that supported the tryworks. A small piece of blubber-encrusted sheet copper and a fragment of a cast iron pot are probably fragments of cauldrons. A few large iron spikes suitable for nailing logs indicates an open-sided tryworks structure had been erected. At its north end, the wall ended in a pile of fire-cracked, fat-encrusted boulders.

Zone 2 consisted of a meter-deep pit, excavated in 2022 filled with stratified layers of charcoal, baleen, and tile, barrel staves, sticks, and log fragments. Our 2023 excavation produced nails, fragments of one or more marmite earthenware pots, a twisted and knotted strand of baleen, tiles, and masses of raw baleen. Lacking blubber residue but with lots of discarded baleen, the pit may have simply been for refuse disposal.

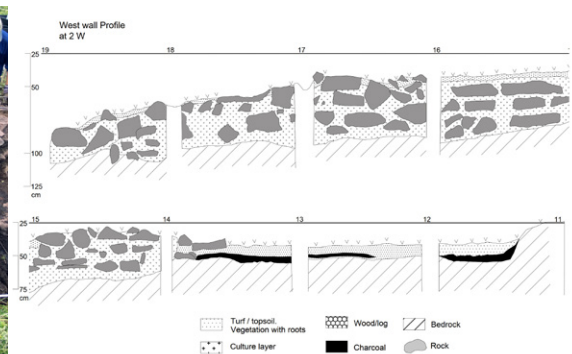


Figure 2a, b: (a) Wall/tryworks foundation at the south end of the site, and beyond, a midden of blubber cinder, fire-cracked tiles and rock, and charcoal. Photo by W. Fitzhugh). (b) West profile at 2W. Graphic by S. Vakhunitsky, A. Miulli, and D. Chechushkova



Figure 3a-c: (a) Stacked layers of baleen from the pit edge; (b) heel fragment of a leather shoe, and (c) a twisted knot of baleen. Photo by W. Fitzhugh; graphics: D. Chechushkova

Zone 3 was a 3-4 meter wide section of the ledge where Basques conducted trywork support activities. We opened two parallel trenches leaving space between them to provide a corridor for excavator access. The West Trench bottomed out on granite ledge and contained a Basque layer sandwiched between layers of peat. In this layer we found tiles, preserved bark and wood, a few nails, and clusters of plain or lightly-glazed earthenware. A cluster of blue-and-white glazed faience ceramic was recovered at the north end of the trench. The East Trench (alias ‘mud pit’) paralleled the base of the hillslope. Its thick peat deposits were saturated with water, causing the trench to fill overnight. Below a thick layer of sterile peat, we recovered barrel staves, tops, and bottoms. The southern units were nearly barren of tiles and artifacts. Northern units had large amounts of earthenware, leading to the conclusion that this was a place for food preparation or consumption, while the central areas may have been for assembling barrels. If

wood floors or timber structures had been present, no evidence remained.

The site was used for a short period of time—perhaps only a single or a few seasons. The stone wall and stone pile served as foundations for the blubber works that produced the cinders, burned tile, stone, and charcoal. However, we did not find the usual oven piles with pot depressions known from Red Bay or other Basque sites. These characteristics configure BE-4 as unique, suggesting different strategies for rendering oil. Perhaps some other type of trywork system was used to produce the burned material surrounding the wall and boulder pile.

The prevalence of baleen, which was especially evident in and around the pit, was a conspicuous feature (Fig. 3a, c). Basques used baleen between the roof frames and the tiles. This might explain why baleen was found throughout the site, but it does not explain the large



Figures 4a-c: (a) A marmite cooking pot recovered by Parks Canada divers in Red Bay (credit: Parks Canada Red Bay Museum); (b) barrel staves and end-pieces; (c) fire-starting European flint nodule Photo by W. Fitzhugh



Figure 5a-c: Three unusual finds from BE-4: (a) a soapstone pipe bowl with a removable stem; (b) a metal belt buckle; and (c) a silver(?) pendant. Color bars = 1 cm. Photos by Anja Herzog; graphic by D. Chechushka

masses in and around the pit. Nails—always abundant on Basque sites where large spikes were required to fasten logs and timber framing—were rare; only four or five large spikes were found, along with larger quantities of medium-size nails. Smaller nails were more common in the Zone 1 industrial area than in the northern zones. The absence of large spikes in the domestic areas suggests that timber structures were not present here, or that these nails were scavenged by later Basque explorers or Inuit who arrived after ca. 1600, but the absence of burned timber frames makes this scenario unlikely.

Unlike nails, domestic ceramics were common in the northern part of the site (Fig. 4a-c). Almost all were thin-walled, low-fired earthenware vessels known as marmites. Decorative vertical bands were present on some body sherds, and many fragments bear remnants of burned glaze and food or oil residue. A half dozen sherds of tan or grey stoneware were present, indicating some early availability of this ceramic type not generally common until the 17th century. The other unusual ceramic appearance was a highly fragmented blue-and-white glazed faience vessel, possibly a teapot.

Nodules of European flint were common as were flakes struck off for starting fires, and a flake of Ramah chert scavenged from an indigenous site may have been collected for the same purpose. Several gunflints were present including one of quartz. Highly unusual was a small, thick-walled, cup-shaped bowl made of soapstone with a tapered hole in its lower side and charred residue on the inside opposite the hole, exactly reproducing the form of a clay pipe bowl. Basques, who did not have their own soapstone industry, could have obtained the soapstone by trade with Inuit, who used this material extensively, or else

found it at the nearby Inuit site on Grand Isle. Other curious items are bronze belt buckle and a small silver(?) pendant with a grooved top and an arrow or harpoon mark on one side—possibly a whaler’s talisman (Figures 5a-c).

One of the many unanswered questions is the site’s date. One indicator of a pre-1600 date is the absence of clay pipes. Smoking and clay pipes were rare in Europe until 1600, so BE-4 should date before then. The abundance of baleen also suggests a date before it became a valuable commodity in the 18th century. A radiocarbon date on baleen, corrected for marine reservoir effect, produced a 2-sig date of 1458-1523 calAD and 1573-1628 calAD (B-683545), while a wood twig produced a 2-sig date of 892-932 calAD and 941-994 calAD (B-683545). The twig must have come from the pre-Basque peat layer. The baleen sample suggests a likely date in the 16th century.

Given their physical proximity, it seems unlikely that BE-3 and BE-4 were separate operations. We did not have time to investigate BE-3, and this should be a priority for future work. Possibly BE-3 was a second station operated by another whaling team connected with a mothership supporting both sites. The character of the BE-4 operation may be imagined in a 2009 rendition of the Middle Bay Basque site produced by the artist **Martin Lowe**, on exhibit in the Middle Bay Museum (Fig. 6).

A summary of our 2023 project appears in a short film by Alyssa Miulli titled “Life Among the Coasters”, prepared for the Whiteley Museum to orient visitors to the history and heritage of the Lower North Shore.

Acknowledgments. 2023 excavations were conducted with assistance of **Alyssa Miulli, Sofia Vakhunitsky,**



Figure 6: An artist's reconstruction by artist Martin Lowe of a Basque store-shed, tryworks, and shore operations at the Middle Bay Basque site. (Source: Middle Bay Museum)

Kody Shugars, Marie Trottier, Clarence Laliberté, and Thomas Garneau-Lelièvre, Francisco Rivera-Amaro, and Perry Colbourne. Financial support was provided by the Arctic Studies Center, University of Montreal, the LNS Littoral School Board, and the Whiteley Museum of St. Paul River, Quebec. Logistical arrangements and hospitality were generously provided by the Whiteley Museum. **Garland Nadeau and Eileen Schofield** were our guardians, food and information-providers, and institutional hosts.

UPDATE ON CLIMATE, PACK ICE EXTENT, AND HARP SEAL FLUCTUATION IN THE NORTHWEST ATLANTIC

By Jasmine Sov

In **William W. Fitzhugh's** paper, *“Riding the Harp Seal Highway: Modeling Climate, Sea Ice Pulsations, and Inuit Migrations in the Eastern Subarctic”*, the author proposes that climate change-related reductions in pack ice around the Northwest Atlantic are precipitating regional changes in the harp seal population. Fitzhugh describes the annual harp seal migration as a “relatively dependable phenomenon” for the seal hunters of Labrador (Fitzhugh 2020:88). However, due to changing winter conditions—namely, loss of breeding ground ice—the harp seal population of the Gulf of St. Lawrence is losing pups. As a result, the herd may be shifting its range to the Labrador Front. This would have had devastating consequences for prehistoric Dorset and Thule Inuit populations occupying the northern Gulf of St. Lawrence and Newfoundland who relied on harp seals as a key source of food and clothing. The most recent statistics on the Arctic climate, pack ice extent, and fluctuations in harp seal populations lend weight to Fitzhugh's theory.

In the past decade, climate change in the Arctic has only grown more extreme. According to the 2023 NOAA Arctic Report Card, Arctic sea surface temperatures in August 2023 were around 5-7°C warmer than the mean temperatures of sea surface temperatures from 1991–2020. Mean surface air temperatures from August 2023 were also higher than average; 2023 was the 6th warmest year for the Arctic since 1900 (Nakamura 2023).

As temperatures rise in the Arctic, pack ice extent around the Northwest Atlantic region has waned. Monthly sea ice extent in the Arctic as a whole has shown a consistent downwards trend since 1978 (Fig. 1); as of 2023, the monthly sea ice extent was 6th lowest in the satellite record since 1979 (Nakamura

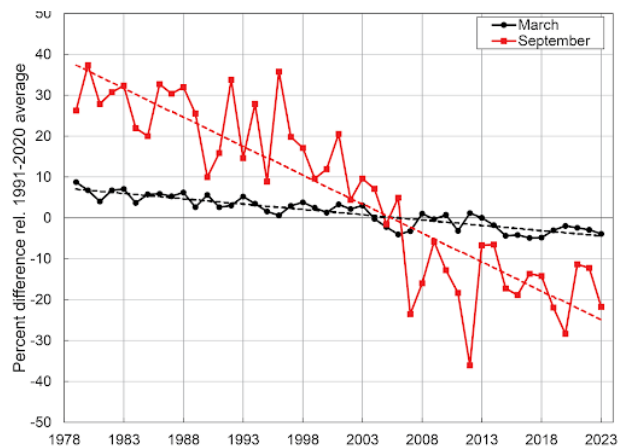


Figure 1. Monthly sea ice extent anomalies (solid lines) and linear trend lines (dashed lines) for March (black) and September (red) 1979 to 2023. The anomalies are relative to the 1991–2020 average for each month (see Table 1). (Nakamura 2023)

Values	March Monthly Average	March Daily Maximum	September Monthly Average	September Daily Minimum
Extent (10 ⁶ km ²)	14.44	14.62	4.37	4.23
Rank (out of 45 years)	6	5	5	6
1991-2020 average (10⁶ km²)	15.03	15.26	5.58	5.37
Anomaly rel. 1991-2020 average (10⁶ km²)	-0.59	-0.64	-1.21	-1.14
Trend, 1979-2022 (km ² /yr)	-39,100	-41,200	-78,500	-77,600
% change from 1979 linear trend value	-10.2	-10.7	-43.0	-43.1

Figure 2. March and September monthly averages and annual daily maximum and minimum extent for 2023 and related statistics. The rank is from least sea ice to most sea ice of the 45-year record (starting in 1979) (1 = least, 45 = most) (Nakamura 2023)

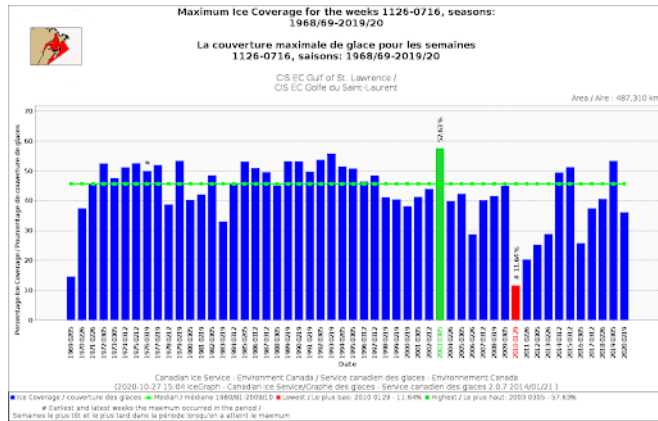


Figure 3. Maximum ice coverage of the Gulf of St. Lawrence region from 1968–2020 (Environment and Climate Change Canada)

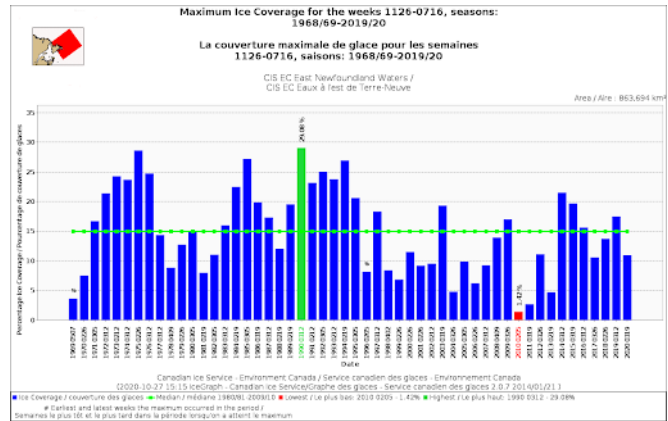


Figure 4. Maximum ice coverage of the East Newfoundland region from 1968–2020 (Environment and Climate Change Canada)

2023). Changes in Northwest Atlantic sea ice extent also align with the overall trend of the Arctic. In the 2014/15 season, maximum ice coverage in the East Coast was 29.68, but dropped to 18.60% by the 2019/20 season. Within the same time frame, maximum ice coverage fell from 19.69% to 10.97% in East Newfoundland and 51.28% to 36.15% in the Gulf of St. Lawrence (Environment and Climate Change Canada 2020).

Beginning in late October to early November, the Northwest Atlantic harp seal population migrates south to this pack ice to breed and whelp. The largest of these whelping patches lie around the Gulf of St. Lawrence, followed by the “Front” (southeast Labrador and northern Newfoundland). Once they reach the ice, much of the population remains there until February and March, when the adult females give birth to and take care of their pups. When the pups are able to swim and feed independently and the pack ice begins to melt (around April and May), the harp seals journey north once again.

Without ice in these regions, however, female harp seals are forced to give birth in the water or on shore. Their pups then drown, die on land, or are lost to predators (op. cit., p.93). As anticipated, the proportion of pups in yearly Northwest Atlantic harp seal catches has decreased. Since the late 1990s, the proportion of YOY (Young of the Year) in the total annual catch was over 97%; from 2016 onwards, proportions of YOY have averaged 90% annually (Canadian Science Advisory Secretariat 2023).

Fisheries and Oceans Canada’s 2019 report on Northwest Atlantic Harp Seals corroborates these findings. In 2012, harp seal pup production in the southern Gulf of St. Lawrence was 115,500; in 2017, it was just 18,300. The northern Gulf of St. Lawrence

saw similar declines in pup production, falling from 74,100 in 2012 to 13,600 in 2017 (Fig. 3). Meanwhile, pup production in the Front actually increased from 626,200 in 2012 to 714,600 in 2017 (Fig. 4). The report also mentions that the timing of births in 2017 was later than usual in the southern Gulf and earlier in the Front, suggesting that some female harp seals from the Gulf herd moved to the Front seeking suitable ice to give birth (Fisheries and Oceans Canada).

Rather than a harp seal “boom-and-bust” population model, Fitzhugh hypothesizes that the Gulf harp seal herd may be changing its geographical range in accordance with recent climatic patterns. True to form, as the Arctic climate warms and pack ice in the Northwest Atlantic (particularly the Gulf region) melts at higher rates, harp seal pup production and the proportion of YOY in annual catches have declined. Consequently, the herd has begun to move to the Front, which has experienced less severe reductions in ice extent than the Gulf. The data presented above thus continues to support Fitzhugh’s theory. Should the Gulf herd shift its range entirely to the Front, Subarctic coastal groups (Inuit and Euro-Canadian) would lose a crucial resource.

[Editor’s note: **Jasmine Sov** is a senior at California’s Pasadena High School who volunteered for a research project with the ASC.]

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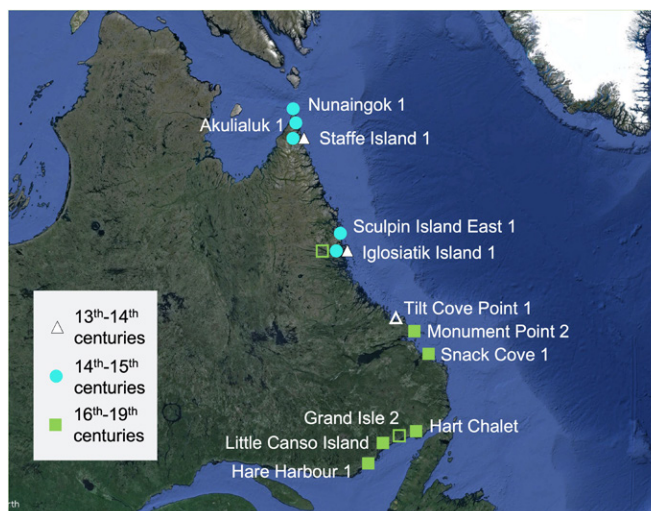
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CALIBRATING 55 YEARS OF RADIOCARBON DATES FROM LABRADOR

By Kevin P. Smith

Since 1970, members of the Smithsonian Institution's Arctic Studies Center and their colleagues collected and ran more than 400 radiocarbon dates on samples of wood, charcoal, bones, baleen, and sediments from archaeological sites and lakes in Baffin Island, Labrador, Newfoundland, and Québec's Lower North Shore. These dates have been available to researchers for years, forming the foundations for models of culture history and processes of change in the eastern Arctic and Subarctic. These dates also provide important documentation for the time-depth of First Nations communities. Yet, while these dates were being collected, protocols for sampling, handling, and processing have changed, and several of the labs have closed. The dates were reported in different publications and reports and the programs used to transform, or calibrate, dates into calendar years have changed, as well. Improving their comparability and accessibility through a comprehensive publication has been one of ASC's goals for several years.

In 2023, we brought all of these dates together in a single format, with consistent information on the materials dated and how and when they were recovered, and then calibrated them through a single program (OxCal 4.3.2), using the currently most accurate calibration curves (IntCal20 and marine20.14c). Using a single system allows them to be compared now as a coherent set, without having

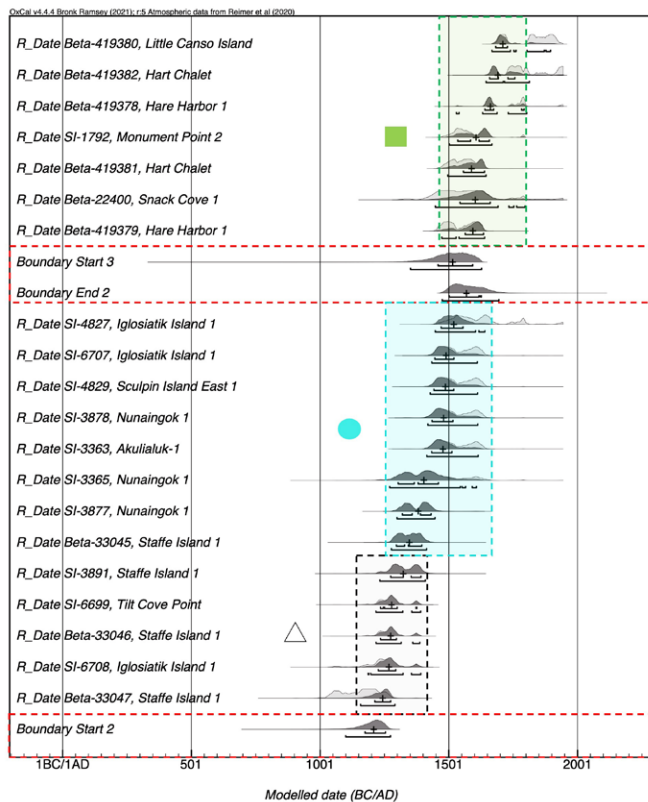


Thule and Labrador Inuit sites and date ranges by symbol. Iglosiatik Island-1 and Staffe Island-1 have dates from more than one period. Open symbols identify sites with either uncertain cultural attribution (Tilt Cove-1) or dates that do not match the ages of European artifacts (Grand Island-2, Iglosiatik Island-1)

to consider which programs or which calibration curves were used to estimate individual dates' ages in calendar years. We are also now able to present the dates not only with their standard one- or two standard deviation ranges (with 68.3% and 95.4% probability, respectively), but also with internal probabilities of the dated samples' ages within those ranges, allowing researchers to estimate the samples' ages more flexibly.

In addition, calibration allows us to analyze dates statistically, using new tools such as Bayesian statistical modeling. Bayesian models allow us to ask questions that consider not only the radiocarbon dates themselves but also other information such as sample location within stratigraphic sequences, the ages of other datable artifacts within those strata, or documentary sources to re-examine our chronological sequences or identify patterns that suggest new questions or reasons to revisit those sites or the samples that were dated.

One example may suffice to give a sense of the new utility. The arrival of Inuit in Labrador and their southward expansion into the northern Gulf of St. Lawrence has been a subject of discussion for several decades. Some researchers argued that Thule Inuit ancestors arrived in northernmost Labrador as early as the 13th century, while others see no evidence before the late 15th century. Similar questions have been raised about whether Inuit expanded into the Gulf of St. Lawrence before Basque whalers and fishermen arrived there in the 15th or early 16th century, or whether the Inuit only moved southwards after the arrival of Europeans in the Strait of Belle Isle provided opportunities to acquire European goods.



Calibrated Thule and Labrador Inuit sites in Labrador and Quebec Lower North Shore. The lower triangle box identifies sites with samples dated to the 13th-14th centuries; the middle circle box identifies samples with mid-14th to mid-16th century dates; and the upper square symbol box identifies samples from sites or contexts with European items. Horizontal dashed lines indicate start and ends of Phase 1 (lower), Phase 2, and Phase 3

To test these ideas, we ran a Bayesian analysis of 22 radiocarbon dates on samples of wood and wood charcoal from 12 Labrador Thule sites, eliminating any known to have been contaminated with marine mammal oils. We divided these into two sets—those from sites with, and those from sites without, items of European material culture—and used a date of 1050±50 AD to model the earliest date at which Thule culture groups began to move eastwards from northern Alaska.

Sites with early radiocarbon dates, from the late 13th and early 14th centuries AD, are found not only at the northern tip of Labrador (Staffe Island 1) but also in the vicinity of Nain (Iglosiatik Island 1), and possibly as far south as Tilt Point Cove 1, where a very ephemeral site, possibly of the Thule culture, is located north of Hamilton Inlet. Sites with consistent dates from the late 14th to the mid-16th century, but without any documented European items, are found only from Nain northward to the northern tip of Labrador (Iglosiatik Island 1, Sculpin Island East

1, Staffe Island 1, Akulialuk 1, and Nunaingok 1). However, sites with dates from the early 16th through 17th centuries and with European goods are all located southwards from the mouth of Hamilton Inlet to Québec's Lower North Shore (Monument Point 2, Snack Cove 1, Hart Chalet, Hare Harbour 1, and Little Canso Island).

Bayesian analysis of these dates suggests that the Thule ancestors of the Inuit arrived in Labrador between 1185 and 1257 AD, expanded down the coast as far south as Nain during the 13th century and may even have explored as far south as Tilt Point Cove. Ancestral Inuit communities appear to have become more numerous in northern Labrador from the 14th through the early 16th centuries, prior to any sustained contact with Europeans, and then spread south from Hamilton Inlet to Québec's Lower North Shore rapidly during the 16th and 17th centuries, acquiring European trade goods there from the Basques, English, and French. While this synopsis suggests a relatively simple pattern of arrival, consolidation and expansion, two sites' dates provide reminders of the complexities that underlie any such analyses.

House 15 at Iglosiatik 1, near Nain, produced both a small assemblage of European items and charcoal with a calibrated date of 1301–1396 AD (68.3% probability); while charcoal from the floor of an Inuit *qarmat* (sod-walled tent) at the site of Grand Isle 2, on Québec's Lower North Shore, provided a date of 1427–1452 AD in association with both European items and Ramah Chert debitage. Neither of these sites' radiocarbon dates match the ages of the European objects found at the sites and since the *qarmat* at Grand Isle 2 was built on top of an Ancestral Innu encampment, it is possible that older charcoal was mixed into the *qarmat*'s floor during its construction and use.

As other researchers have discussed, factors such as the use of driftwood, the reuse of older structural timbers, reoccupation of earlier sites, and the contamination of wood and charcoal with marine mammal oils can all produce radiocarbon dates older than the period when the site was occupied. Thus, while the systematization, calibration, and statistical analysis of ASC's corpus of radiocarbon dates suggests that the Inuit arrived in northern Labrador late in the 13th century, consolidated their communities in northern Labrador, and then expanded southward around the time that the Basques first arrived in the Gulf of St. Lawrence, anomalous dates within the models also alert us to the need to reassess the dates themselves critically, along with the materials dated and their contexts, in order to re-evaluate and re-assess patterns of change at regional levels.

pXRF IDENTIFICATION OF LITHIC SOURCE MATERIALS FROM STOCK COVE, NFLD

By Christopher B. Wolff and Kevin P. Smith

The Stock Cove (CkAl-3) is a multicomponent site at the base of Trinity Bay in southeastern Newfoundland. Research began in the 1980s to examine its Dorset PaleoInuit occupation. That early work demonstrated the richness and importance of the site, but it was not until over twenty years later that Wolff and colleagues returned with more questions. We now know the site was used by every culture that inhabited the island except the Norse. However, due to the poor organic preservation, what has primarily been recovered are lithics. The various cultural strata contain a diverse collection of local and non-local lithics, among which the most abundant is Trinity Bay Chert (TBC). This material is a fine-grained, medium gray to green chert that through diagenesis develops a soft, chalky white patina, based on some experimentation by Wolff and Dr. **John Erwin**.

The source of TBC is still unknown, although it is probably in the vicinity of Trinity Bay. This is because the geographical distribution of the material is concentrated in the bay and there is distance decay in its frequency at more distant sites. To further complicate the source identification, there are other cherts in eastern Newfoundland and other parts of the island that superficially resemble the material. This makes it difficult for researchers not familiar with TBC, to properly identify it. For that reason, Kevin Smith and Christopher Wolff investigated whether a portable X-ray fluorescence (pXRF) device could be used to non-destructively identify variation in lithic source materials collected from different locations and assess if TBC comes from a distinct source location.

Methods

Six archaeological specimens from Stock Cove that shared properties of TBC were analyzed with the pXRF; a Dorset harpoon endblade and five pieces of debitage from Archaic and Dorset contexts. Two pieces of debitage were broken, allowing separate analyses of each piece to assess the comparability of results. These were compared to archaeological samples of TBC collected by Wolff, and samples collected by colleagues from geological outcrops of Conception Bay Chert (CBC), Pouch Cove Chert (PCC) from southeastern Newfoundland, Lawrence Harbour Chert (also known as Strong Island formation chert, SIC) from Notre Dame Bay, and Port-aux-Port Chert (PPC) from Newfoundland's west coast, as well as samples collected by Smith from primary or secondary

sources of the Fortune Harbour (FHC) and the Shoal Arm (SAC) formations in Notre Dame Bay, the Watts Bight (WBC), Northwest Arm (NAC), and Berry Head (BAC) formations at the tip of Newfoundland's Great Northern Peninsula, and both Cow Head (CHC) and Green Point (GPC) cherts from the island's west coast. Although we recognize that this sampling of geological sources does not exhaust the full range of cherts present across Newfoundland, it incorporates examples of many of the major chert types known from pre-contact sites on the island.

The readings from all four chert sources separate cleanly. However, the two geological sources closest to Stock Cove (TBC and CBC) have geochemical signatures similar enough to suggest they may be related geologically. The geochemical signatures of both PCC and LHC, the next most proximate sources, are distinct from these two and from one another. Most of the readings on Stock Cove debitage have values that cluster tightly with readings with the TBC reference samples; but some could be either TBC or CBC. While the Dorset endblade is visually similar to the debitage from the site, its readings fall somewhat outside the range of variability currently documented for TBC, CBC, or debitage from the site, which raises questions about whether it was made from TBC or a different, potentially related, chert source, or if it represents variability of the source itself. None of the items from Stock Cove can be related to either the PCC sources, located just 80 kilometers away, or to LHC outcrops, more than 200 km distant.

These results, although preliminary and limited by the small number of items analyzed, suggest that pXRF has potential for differentiating major sources of lithic raw materials from Newfoundland and for associating debitage and finished tools to geological formations, if not specific outcrops. However, they also suggest that these methods work best when geological sources are separated by significant distance, as Wolff and colleagues have also demonstrated with slate from Newfoundland and Labrador. In other words, pXRF is better at identifying lithic materials from geological sources that are the result of significantly different formation processes. The results also confirm prior assumptions that Stock Cove inhabitants relied heavily on local Trinity Bay Chert, and perhaps also Conception Bay Chert, for producing stone tools, while the tight grouping of data of the site's debitage suggests the possibility that occupants prioritized specific outcrops or beds of this chert, still to be found.

[Editor's note: The analytical data that could not be included here will be available in other publications by the authors.]

“VIKING RAINCOATS” AND THE USE OF VARARFELDIR (PILE WEAVING) IN THE NORTH ATLANTIC

By Michèle Hayeur Smith

One summer a seagoing ship, owned by Icelanders, arrived from Iceland. It had a cargo of sheepskin cloaks. They steered into the Harthangerfjord, because they had heard that a great multitude was gathered there. But when people came to bargain with them, no one wanted to buy the sheepskins. Then the skipper sought out King Harald, because they were acquainted, and told him about his difficulty. The King said he would go see them, and so he did. King Harald was a kindly disposed man and of a very cheerful disposition. He arrived there with a fully manned skiff and looked at their wares. He asked the skipper, “Will you give me one of your cloaks?” “Gladly,” said the skipper, “and several if need be.” Then the King took one of the sheepskin cloaks and hung it over his shoulders, whereupon he boarded the skiff again. But before they rowed away every one of his men had bought a sheepskin. A few days later such a multitude came there who all wanted to buy the cloaks that not a half of them got any. After that, the king was called Harald Gráfeldr. (Snorri Sturluson, Hollander (trans), 1964: 137).

This event in the life of the Norwegian king **Harald Greycloak** (b. ca 935, d. ca. 970), described by **Snorri Sturluson** in his 13th century history of the Norwegian kings, *Heimskringla*, appears to lie at the root of some conclusions that have been drawn about the origins of the shaggy pile weave in Norway, known as *röggvarfeldur* or *röggvarvefnaður* in Iceland. *Vararfeldir* is another term used to describe woven mantles with a piled surface that had been in vogue around Northern Europe from the 6th century to the late medieval period. Their true origins are to be found in antiquity, with the earliest documented examples of this cloth type known from Bronze Age Sumeria, 5,000 years ago (Guðjónsson 1962:70)

It has been suggested that the weaving of pile textiles was quite popular in Iceland during the 10th and 11th centuries and may have been a premium item exported from Iceland to mainland customers (Guðjónsson, 1962; Gelsinger 1981). According to *Heimskringla*, as quoted above, the Norwegian king Harald “Greycloak” or “Greyskin” purchased a cloak (incorrectly translated as sheepskin in the text) for himself and also encouraged his entire retinue to purchase the full cargo of cloaks from an Icelandic merchant docked in Norway. His name *Gráfeldr* seems to refer to “skin” and not cloth, but according to Guðjónsson (1962), mantles of skin were called *skinnfeldir*, whereas

the terms *vararfeldir* and *röggvarfeldur* referred to cloth woven with a piled surface (Guðjónsson 1962: 68). *Vararfeldir* does indeed emulate the appearance of sheepskins, but by being woven presents a more resilient, waterproof, and longer-lasting equivalent. Its base is produced as a basic woven twill or tabby, into which individual tufts of wool from the Northern Short-tail sheep are interspersed at regular intervals to produce the appearance of an animal pelt.

Largely on the basis of this tale, scholars have assumed that this type of cloth was uniquely Icelandic although possibly based on similar items brought over from Ireland with the early settlers, as Irish scholars have also claimed this cloth type was produced abundantly in Ireland (Pritchard 1992:98). Pile woven textiles are described in detail in the medieval (12th–13th century) Icelandic law code *Grágás*, reinforcing the idea that it was an important item of value, trade, and commerce. However, archaeological examples of this type of cloth are extremely uncommon in the corpus of excavated Icelandic Viking Age (870–1050) and Early Medieval (1050–1300) textiles but are common on the Norwegian mainland.

Only twelve examples are known from Iceland, in periods spanning the 9th–19th century, and Greenland has just three. In contrast, the early trade and harbor site of Borgund, on the west coast of Norway in the vicinity of present-day Ålesund, has 37 fragments of this cloth out of a corpus of 306 fragments of cloth. Seven of these 37 fragments were analysed for 87Sr/86Sr isotope ratios, following the method pioneered by Frei (2009) and successfully reproduced at Brown University and a commercial lab, Isobar Laboratories, in Miami, Florida.

Most of these textiles returned results consistent with local Norwegian baselines of 87Sr/86Sr 0.7095–0.7107 and none matched the baselines for bioavailable strontium in wool from Iceland, which exhibits a range of 0.7042–0.7086. Therefore, there is no indication that these textiles came to Borgund Kaupang from Iceland, and it seems more likely that if these were not produced from sheep that grazed near the town itself, they are likely to be from somewhere in Norway.

The origins of shaggy pile woven textiles and cloaks seem clearly to be found in antiquity and in the Mediterranean region. The technique made its way across the continent and became popular during the Iron age in Northern Europe and persisted in Ireland through the medieval period. Clearly, pile woven textiles were locally also produced in Iceland during the Viking and Medieval periods, but were they exported to Norway in great quantities, as has been inferred from the short description of King Harald’s purchase of them in *Heimskringla* and the records

of their value in medieval Iceland's law codes? Did the technique come to Iceland via Ireland or from Norway with Iceland's early settlers? This part of the narrative remains unclear. The preliminary strontium isotope data from Borgund suggests that Norway had its own tradition of pile weaving during the late Viking Age, if not before, and that vararfeldir do not seem to have been a significant component of the textile trade between Iceland and Norway, even when it picked up in intensity after the 13th century (Steinmann and Hayeur Smith, forthcoming).

The persistence and lengthy survival of these shaggy pile weaves in Scandinavia and Northern Europe, despite the labor required to produce them, is most likely because they were so well suited to the climatic conditions of the North Atlantic. Apparently, such cloaks were relatively impermeable, since the pile would keep out rain during the difficult weather that characterizes the North Atlantic's land- and sea-scapes (Wincott Hecket 1992: 164). While **Wincott-Hecket** called it the "raincoat" of the Irish, I would suggest it was the "Viking raincoat" and that the visual cliché of hairy Vikings crossing the North Atlantic on their ships really reflects them wrapped in their pile woven cloaks!

[*Editor's note:* Data graph and bibliography were dropped during publication for space reasons. Google the in text cites or contact the author for details.]

GÖBEKLI TEPE: ANCIENT NATURAL HISTORY AND SHAMANIC NARRATIVE OF A DELUGE?

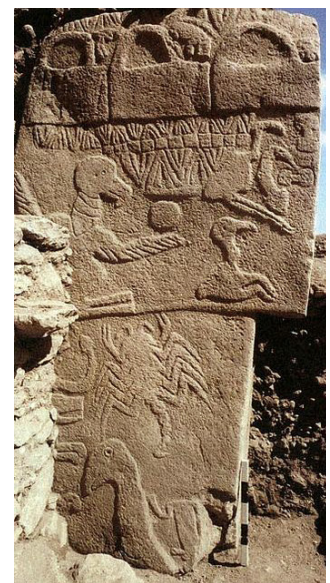
By Elisa Palomino and John Cloud

The thread through my recent Ph.D. research has been humans and fish, in historical and contemporary context. My original focus was on Indigenous Arctic Peoples and their respective fishes, but thanks to **Bill Fitzhugh**, I recently benefited from a post-doc award at ANAMED, Koç University's Research Center for Anatolian Civilizations which has enabled me to expand my scope. I am now delving into the dynamics between fish and people in ancient Mesopotamia.

Fish, in a largely arid landscape, inhabit springs and pools and rivers like

the celebrated Tigris and Euphrates. They also inhabit lakes, many of which are the shrunken remains of much larger lakes that existed back when climates were different. On one of my research trips, I traveled to the city now known as Urfa, in southeast Turkey, thirty miles north of the Syrian border in search of the sacred carp. **John Cloud** had also suggested I seek out the famous Urfa peppers, a local specialty. Urfa originally was Ur, a very ancient city, critical to many religions, as it was the home of **Abraham the Patriarch**. The ancient story is geographically depicted in the Pool of Abraham, where sacred carp still swim. In this narrative, Abraham is cast into flames by the Assyrian **King Nimrod** for contesting the king's faith in idols, yet he is miraculously saved by an angel. Divine intervention transforms the fire into water and the very logs of the fire into the revered carp.

Six miles from Urfa were the ruins of Göbekli Tepe, which I visited. Initially explored and disregarded in the 1960s, it wasn't until 1994 that German archaeologist **Klaus Schmidt** properly discovered them. Since then, Göbekli Tepe has been revolutionizing the fields of archaeology and anthropology. It is a set of monumental structures, dating to about 9,000 BC, resting on the top of a hill without any evident nearby water. Göbekli Tepe has many sets of large pillars of various sizes, with central T-shaped pillars standing up to 5.5 meters tall depicting an abstract representation of the human form from a side view, featuring low relief depictions of arms, hands, and items of clothing like belts and loincloths. The surrounding smaller yet more intricately decorated pillars predominantly display zoomorphic decorations, facing towards the central pillars, with benches between them suggesting the impression of a gathering, possibly representing ancestors or even deities. One



Left: Pillar 43 in Enclosure D decorated with a wide array of animal depictions. Right: Overview of enclosure C. Göbekli Tepe, Sanliurfa, South-east Anatolia. (Credit: Wikipedia Commons)

hundred and forty-three bas-relief sculptures have been uncovered thus far, including animals, phalli, and human-animal composite sculptures, and various animal species, including mammals, birds, and fish—a virtual natural history museum—all identifiable from osteological records and ethnographic descriptions of the Euphrates region. These include species such as the fox, jackal, leopard, wild boar, aurochs, gazelle, mouflon, and common crane. Some interpretations suggest that the snake-like creatures represented on the pillars may actually depict fish, particularly species like the Mesopotamian spiny eel, which inhabits the region. In my discussion with Prof. Dr. **Necmi Karul** from Istanbul University, he affirmed that amidst the array of animal bones recovered from the site by the team's archaeozoologist, **Joris Peters**, numerous fish bones were unearthed suggesting their potential use for sustenance or sacrificial purposes.

The enclosures at Göbekli Tepe, believed to have served as venues for nightly performances, feature complex scenes involving terrestrial and aquatic animals, possibly indicating totemic significance. The presence of predatory animals portrayed in unfavorable conditions, along with depictions of death and rebirth, aligns with symbolic themes common in rites of passage, such as initiation ceremonies. Ethnographic and archaeological evidence at Göbekli Tepe, suggests shamanistic practices through figurative art (Watkins 2020; Peters and Schmidt 2004). Animal representations, particularly snakes, wild boars, and foxes, may have facilitated spiritual encounters in shamanic rituals at Göbekli Tepe (Gheorghiu 2015). Monumental architecture like that found at Göbekli Tepe was utilized for novel forms of shamanistic practices. The enclosures with their benches between pillars suggest the presence of large audiences, possibly engaged in communal rituals, while also serving as places for the disposal of corpses to be consumed by necrophagic animals, indicating a shift in religious ideologies. Göbekli Tepe provides a glimpse into the spiritual and cultural practices of prehistoric societies, where shamanism played a central role in mediating between the natural world and the supernatural, and where the landscape itself served as a canvas for storytelling and ritual enactment. One can envision this prehistoric sanctuary as a stone-carved world dominated by water, revolving around the Balikh and Euphrates rivers. Catastrophic events like floods, depicted in Enclosure D, are associated with water. Animal representations in Palaeolithic art signify distinct moments, reflecting hunter-gatherer communities' seasonal rhythms and temporal constructions. Enclosure D's iconography suggests a narrative of flooding and riverine landscapes, evoking ancient stories of cataclysmic events like the

Biblical Flood. This narrative evokes parallels with ancient flood myths, including the biblical narrative, underscoring the resonance of these primordial stories (Albayrak 2023).

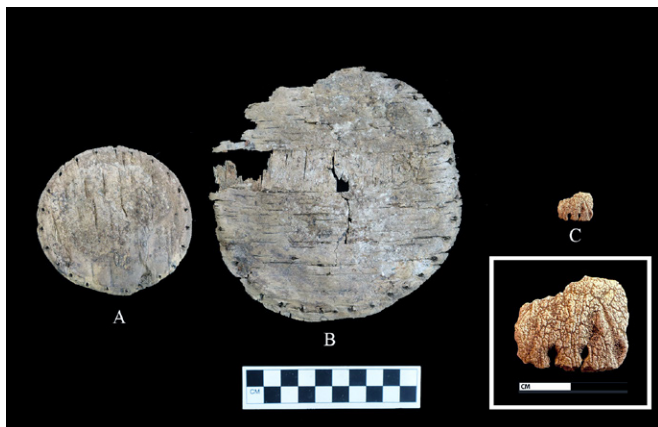
Despite speculation about the meaning of the structures and the specific activities that occurred there, what can be stated with confidence is that Göbekli Tepe was a very large ceremonial site, erected long before agriculture developed in the region. Hence, its existence becomes an article of evidence in the argument of **Graeber** and **Wengrow's** book, *The Dawn of Everything: A New History of Humanity* (2021), that the long-established theory of the evolutionary progression of human settlements and social order, from hunting and gathering to pastoralism to agriculture, etc. was not obligatory. Particularly hunter-gatherers are traditionally believed to have lacked complex symbolic systems, but the mythical characters depicted on the bas-reliefs of Göbekli Tepe prove differently. The fact that the pillars appear to have been deliberately buried, all at once, around 8200 B.C., some thirteen hundred years after their construction, and that Göbekli Tepe was subsequently abandoned, might provide evidence supporting the thesis of NMNH's own **Noel Broadbent**, that human history has been shaped by near endless cycles such as floods or roving plagues, which can depopulate local landscape, "wiping the slate clean" for a new occupation by other cultures.

Whatever else, my fieldtrip to Urfa and Göbekli Tepe revealed a very rich history and prehistory of people and fish, and my recent fellowship in Istanbul, Turkey, was highly fruitful and productive.

RITUAL BIRCH BARK TRADITIONS IN PREHISTORIC EURASIA: A CASE STUDY FROM THE MONGOLIAN GOBI

By Christina Carolus, Asa Cameron, Bukhchuluun Dashzeveg, Chunag Amartuvshin, Byambatseren Batdalai, Gabat Dashzeveg, Davaakhuu Odsuren, and Molor Adiyasuren

The exploitation of birch bark (*Betula sp.*) and its byproducts is well documented throughout the northern hemisphere. Birch bark is a versatile material with a wide variety of practical and artistic applications, including building materials (Usenyuk et al. 2015, Rybníček et al. 2020), storage and cooking vessels (Vogt 1949, Piezonka 2021), clothing (Pozdnyakov et al. 2018), canoes and sleds (Densmore 1929; Adney and Chapelle 1964; Luukkanen and Fitzhugh 2020), and bases of ceramic motifs (Kashina and Petrova 2019). When processed, it can generate tar that produces an adhesive (Rageot et al. 2019), sap that



A and B: Birch bark container lids recovered from EX.19.08; C: fragment of a sewn birch bark container lid recovered from Baga Chuluu Agui. Photo by A. Cameron and C. Carolus

produces sugar syrup (Chamberlain et al. 2009), and byproducts traditionally used in tattooing and medicine (Batchelor 1927).

Birch trees also feature prominently in circumpolar cosmologies. They are especially prominent in the subarctic boreal forest and forest-steppe regions of Eurasia, where groups such as the Buryat of northern Mongolia and Transbaikal incorporate raw birch materials and bark-based craft objects directly into shamanic rituals and initiation rites (Wu 1996). These practices continue across northern Siberia, where the Yakuts and Nenets (among others) hold cosmologies founded in a birch world tree or “birch god” (Lintrop 2001; Lehtisalo 1924) and whose mortuary rites require symbolic interment or ritual burning under layers of its bark. Similar practices have been documented in prehistoric graves in southern Siberia as far back as the first millennium BCE. However, despite their widespread use as technological items and components of religious practice, we find the physical movement and trade of birch bark in prehistory to be underexamined.

The Siberian Ritual Economic Sphere

Southern Siberia has been emphasized as an important core of cultural genesis and regional interaction during the Bronze and Iron Ages (Syvatko et al. 2021). Starting at 3100 BCE, Western Eurasian steppe pastoral and indigenous Siberian traditions coalesced to varying degrees in Southern Siberia with the arrival of the Afanasievo and their later expansion eastward and southward through what is now Mongolia. The movements of the Afanasievo and subsequent groups such as the Okunevo (c.2600–2000 BCE)



*The birch bark container from Zuun Khotgor Ders contains a broken bronze mirror and is found on a red pine (*Pinus sylvestris* L.) grave lining, another import from the boreal zone. Similar containers are known throughout circumpolar boreal zone. Photo by Byambatseren Batdalai*

and Chemurchek (c.2700–1900 BCE) introduced major transformations across the steppe: pastoralism, monumental mortuary traditions, and copper and bronze metallurgy, as well as novel ideological, symbolic, and ritual concepts (Honeychurch et al. 2021).

Scholars have previously tracked the developing ritual sphere of Siberia-steppe belt interaction through the circulation of durable items like the ceremonial bronze knives and daggers produced by the Karasuk Culture (c.1200–700 BCE) in the Minusinsk Basin. By the Late Bronze Age (c.1500–1000 BCE), ritual bronze knives appear in the monumental graves of the earliest known Gobi pastoral culture, the Prone Burial tradition, indicating long-distance material and symbolic connections to Southern Siberia (Honeychurch 2015). Their Early Iron Age successors in the Gobi, the Slab Grave culture (c.1000–400 BCE), are known for burying their dead with a wealth of inorganic luxury goods, especially the bronze daggers which have been extensively looted in the past and present (Wright 2021).

We propose that a similar process occurred with ritually significant birch bark objects by at least the Xiongnu Period (c.250 BCE–150 CE) with the emergence of the steppe’s earliest nomadic polity, and perhaps beginning as early as the Late Bronze Age. The circulation of birch bark objects by the end of the first millennium BC is associated with ritual deposits, particularly in graves. Their documentation serves as a useful index of relations between the steppe and Gobi regions of Mongolia and a broad boreal zone that included Southern Siberia, Transbaikal, and possibly portions of Inner Mongolia and Manchuria.

The Shiriin Chuluu Archaeological Project

The Dornogovi province of southeastern Mongolia, the locus of our team's archaeological research since 2018, is characterized by a desertic stacked granite environment that could not be more physically alien from these distant birch forests. Birch is a drought sensitive species (Gradel et al. 2017) and while two very isolated pockets of birch-willow stands described as "mountain forest islands" are reported in the Gobi Altai Mountains approximately 600–900 km west of the study area, no other forests appear within less than 500 km to the south or east (Miehe et al. 2007). The vast majority of birch forest cover in eastern Eurasia begins about 250 km north of our study area at the southernmost edges of the boreal forest zone (Glauner and Dugarjav 2018).

Nevertheless, an unexpected throughline of practice and meaning has emerged. The Shiriin Chuluu Archaeological Project focuses on aspects of habitation, subsistence, mortuary customs, and political and social complexity in the Gobi-steppe from the Neolithic (c.6000–3000 BCE) through the Xiongnu Period (c.250 BCE–150 CE).

An overarching research interest centers on charting the establishment and expansion of trade networks which linked emerging complexity on the Gobi-steppe of Mongolia to relationships with distant groups.

Birch bark artifacts recovered from habitation and mortuary contexts at Shiriin Chuluu have provided unexpected evidence for exchange networks between boreal and Gobi populations in the form of whole and partial birch bark containers from three Xiongnu ring graves located in two cemeteries: Kheree Khad and Zuun Khotgor Ders. Kheree Khad is a small ring grave cemetery associated with the local elite of Shiriin Chuluu. Excavations in 2019 produced two birch bark discs identified as lids of round birch bark containers. Both discs were manufactured by sewing round sheets of birch bark together. Similar lids have been found in contemporaneous sites in central Mongolia (Amartuvshin and Honeychurch 2010) and northwestern Manchuria (Wei and Songlin 2015).

Zuun Khotgor Ders is located approximately 1 km north of Kheree Khad, and with 18 burials total, it is

the largest Xiongnu ring grave cemetery in Shiriin Chuluu. Excavation of EX.21.09 yielded a container lid similar to those found previously. The most significant find was recovered from grave EX.21.10 in the same cemetery that produced an intact birch bark container with a broken bronze mirror wrapped in silk. The outside of the box was inscribed with images of a procession of carts, tree-like forms, and representations of a traditional Mongolian ger or yurt.

Birch bark objects are a well-documented but inconsistent feature of Xiongnu ring graves (Honeychurch 2015). At Shiriin Chuluu, they were present in 20% of burials. This disparity could reflect either the frequency of Xiongnu individuals buried with birch bark objects or issues of preservation and looting. Xiongnu birch bark artifacts in graves thus

tend to be recovered in fragments and as container lids alone (Amartuvshin and Honeychurch 2010). Their scarcity might explain why these artifacts have not been discussed more frequently as "trade" objects.

Lastly, other newly discovered evidence includes birch bark fragments from two multi-period cave/rock shelter habitation sites (Baga Chuluu Agui and Aduun Ordon). The first, Baga Chuluu Agui,



Incised imagery on the birch bark container from Zuun Khotgor Ders. Photo by B. Dashzeveg

was investigated in 2023 and yielded a fragment identified as the sewn edge of a birch bark container lid. Radiocarbon dates for the site are forthcoming. This site has also yielded textiles, human remains, and evidence from Upper Paleolithic through Neolithic to the Early Iron Age. The second site, Aduun Ordon, is a stratified cave habitation site with occupation dating from at least the Late Bronze Age (c.1400 BCE) and containing material cultural sequences associated with the Prone tradition, Early Iron Age Slab Grave culture, Xiongnu, Khitan, Mongol, and Manchu periods. Birch bark fragments recovered from levels associated with Xiongnu through Khitan (c. 5th century CE) occupations are presently being radiocarbon dated. The fragments are too small to link to object types, but we surmise they may represent containers. In later-dated strata they may represent manuscript fragments, as at least one partial manuscript with Mongol text has been recovered from the site. Birch bark has a long history in Eurasian manuscript production and was used until the

Late Medieval period to record Mongolian legal and religious texts (Chiodo 2000).

Concluding Remarks

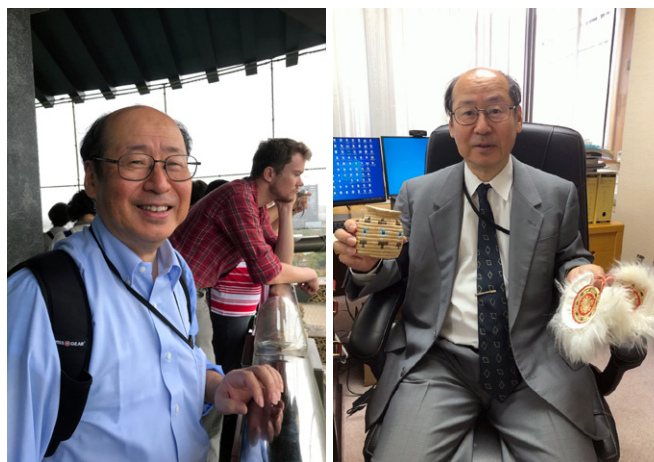
Recoveries of archaeological birch bark objects are uncommon globally despite evidence of their widespread importance in the past. A study by Orsini et al. (2015) notes that “birch bark objects are preserved for long periods of time only under peculiar burial conditions, such as very dry conditions in arid or cold climates, or wet conditions in sediments and glaciers”. In combination with their general fragility and the destructive effects of looting, we speculate that the extant record of birch bark objects in Mongolian burial contexts underrepresents their presence and may misrepresent their distribution spatially and temporally. The general underrepresentation of stratified habitation sites in Mongolian archaeology, especially in regions with ideal preservation conditions, further skews our knowledge about the nature of their uses and distributions. The relatively high incidence of birch bark recoveries from our Gobi excavations suggests that circulation of these objects may well have been wider and earlier than expected.

The appearance and nature of these archaeological birch bark objects in the Gobi offers new insight and research directions. The first and most general: that the subarctic boreal regions and the forest steppe continued to be a core of long-distance trade through the end of the Iron Age. In particular we are prompted to delve further into the nature of these relationships with respect to Xiongnu social and political apparatus. The predominant recovery of these objects in specialized mortuary contexts, excellent preservation of ritualized design features and depositional contexts, and the sheer distance by which the objects traveled to reach these desert-steppe populations, suggests their likely status as exotic prestige goods. Portable craft goods with distant procurement and production outside of local elite control tend to be imbued with special power and allure that exceeds use value (Helms 1993). This is further amplified if tied to cosmology. We have little doubt that possession of these exotic objects aided relatively far-flung Gobi elites in maintaining status and legitimizing established political associations with the Xiongnu political heartland. While not much can currently be said about the precise origins or social lives of these objects, this preliminary work suggests that the meaning, incidence, and ritual economic significance of birch objects deserves further research as a category of portable material culture present among steppe and desert groups distant from the boreal zone.

[*Editor's note:* space limitations precluded inclusion of the authors' reference list.]

NOBUHIRO KISHIGAMI AND THE NORTH PACIFIC PREHISTORY SYMPOSIUM

By Ben Fitzhugh

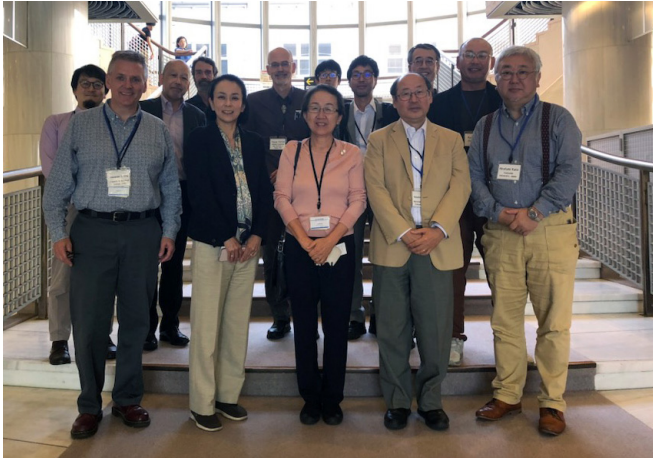


Left: Nobuhiro Kishigami. Right: Alaskan craft gifts presented on behalf of ASC and friends.

Photo by B. Fitzhugh

In early November 2023, I participated in the “Symposium on Northern Prehistory, Language and Culture of North Pacific Peoples” hosted by longtime ASC friend **Nobuhiro Kishigami** at the National Museum of Ethnology in Osaka, Japan. Kishigami sensei (Nobu) organized the three-day workshop that brought together three American and nine Japanese scholars to discuss issues in archaeology, linguistic anthropology, and ethnology of North Pacific Rim. Nobu opened with a masterful synthesis of research trends, and in the spirit of comparative research, reviewed the last quarter century of North Pacific scholarship in each of the Boasian subfields, synthesized the state of the research, and offered a vision for the future, centered around Indigenous collaboration using comparative research from Japan, Russia, the U.S., and Canada to support community efforts to address environmental and political challenges.

In the archaeology session, I explored Indigenous fisheries management in the Kodiak region and future plans to bring archaeology and oral history to bear on needs for co-management and sovereignty of local fisheries. **Hirofumi Kato** and **Kaoru Tezuka** individually explored issues related to late Pleistocene hunter-gatherer adaptations to marine environments and seafaring in Siberia, Japan, the Kurils and Kamchatka. **Yu Hirasawa** explored the technological relationships between Late Pleistocene Alaska microblade technologies and those of Japan and Siberia. On the linguistic front, **Alexander King** provided a rich discourse analysis of Koryak storytelling based on his



The Symposium participants. Photo by B. Fitzhugh

Kamchatka research, and **Baek Sangyub** fascinated the assembly with a map-based linguistic analysis of Tungusic lexical borrowings. **Tom Thornton** reviewed SE Alaskan Tlingit resource “cultivation,” that entails promoting predictable resource availability. He reflected on the knowledge developed by these communities to promote healthy kelp forests, herring schools, clam beds, and salmon runs. The remaining speakers showcased the continuing interest among Japanese scholars in the ethnography of Alaskan Native culture. Toshiaki Inoue examined Gwich'in



Left: Kishigami-sensei and his wife, Miwa. Right: Ben and Nobu in relaxed mode. Photo by B. Fitzhugh

concepts of “tradition” and their relations to US and Canadian colonial powers. **Hiroko Ikuta** reported on her social network research into Native Alaskan food sharing and food security, and **Ryo Kubota** reported his research into history and the role of Alaska Native Corporations and commercial development of natural resources. In the afternoon of the third day, **Hiroya Noguchi** compared Suqpiaq and Unangan hunting visors in terms of their potential historical and

social implications. **Kishigami-sensei** closed out the conference with a second full-length lecture on “Social Change and Indigenous Prints of Northwest Coast Peoples of North America,” a talk that reflected on a century of Indigenous print-making and building on a temporary exhibition he curated, which we viewed in the NME temporary exhibit hall.

Nobu organized the symposium as a “last hurrah” of his NME curatorship. After thirty years conducting research in the Arctic, curating exhibits, and hosting conferences at NME—including the 8th Conference on Hunting and Gathering Societies in 1998 where I first met him—this gathering celebrated Nobu's impending retirement in March 2024. To celebrate the milestone and in cahoots with ASC staffers (**Aron Crowell**, **Bill Fitzhugh**, and **Igor Krupnik**) who could not attend, I presented Nobu with retirement gifts of Alaska Native grassworks (a small rye grass basket and two dance fans) woven by Yup'ik artist, **Nellie Pauk** of Togiak, Alaska. The artworks had been scouted by ASC's **Dawn Biddison** at the Alaska Federation of Natives art sale and were purchased by **Sven Haakanson, Jr.** It was nice to be able to honor Nobu-sensei's decades of service to cross-cultural and international research and scholarly community building. He assures us he plans to continue publishing well past his retirement. We wish Nobu well as he settles into a new phase of his career, one with more time with his wife **Miwa** and less in committee meetings! And, of course, we look forward to seeing him at future conferences he has not organized and reading his forthcoming work.

RESEARCH ON WOMEN'S EXPLORATIONS IN GREENLAND

By Joanna Kafarowski

As part of my research for my next book, I recently had the pleasure of chatting with **Bill Fitzhugh**, **Stephen Loring**, and **Bernadette Driscoll Engelstad** in Washington, D.C. and viewed Smithsonian collections relating to Arnarulunnguaq and the *Fifth Thule Expedition* (1921–24) as well as *Tookoolito and the Polaris Expedition* (1871–73). I am a Canadian independent scholar and geographer currently based in Victoria, British Columbia. I originally worked with Inuit women in the Canadian Arctic on gender and natural resource issues before focusing on writing biographies of polar women. My current project is tentatively titled, *Where Bold Women Go: Exploration and Climate Change in Greenland*, and it's more wide-ranging and ambitious in scope than my previous work.

It presents a story of women's exploration of Greenland and a portrait of Greenland as revealed



Joanna Kafarowski examining the relics collected by Charles Francis Hall in Nunavut during his 2nd Arctic Expedition 1864-1869. She is holding a large Thule ground-slate endblade or knife on which Hall had written "Found by Esquimaux Joe Aug. '69". Photo by Stephen Loring

by this exploration. An accurate and comprehensive understanding of the historic exploration of Greenland is only gained through investigating issues related to gender, race, and class. Women, and particularly Indigenous women, have been written out of the literature of Arctic exploration despite their active participation as guides, translators, seamstresses, photographers, etc. The first part of the book will investigate the lives of **Tookoolito** who worked with **Charles Francis Hall** on the *Polaris Expedition*; **Josephine Diebitsch-Peary** who accompanied her husband **Robert Peary** and lived and worked with him in northern Greenland in 1891 and 1894; **Arnarulunnguaq** who travelled with **Knud Rasmussen** on the *Fifth Thule Expedition*; botanist

Isobel Wylie Hutchison who lived in Greenland during the late 1920s, and geographer/photographer **Louise Arner Boyd** who organized and participated in five expeditions to Greenland in the 1930s and 40s. During their collective travels throughout Greenland in the nineteenth and early twentieth centuries, these women documented the land and its culture in diverse ways and shared their discoveries with the world. This book will examine their historic legacy, the forces that shaped their work in Greenland and the country that inspired them.

Today, the Arctic region is a harbinger of climate change. The second part of the book argues that, in this context, exploring Greenland assumes a broader meaning. Women who explore face a country struggling with the physical and social upheaval wrought by climate change and the trauma induced by an entrenched colonial heritage. Scientists are tackling the greatest environmental challenge of our time, but climate change is a complex problem that cannot be solved by conventional Western science alone. Exploring Greenland today means looking at this "wicked" problem from various perspectives and asking different questions. The women who explore Greenland today do exactly that. Scientists including pioneering paleoclimatologist **Dorthe Jens-Dahl**; fearless artists such as Greenlandic visual and performance artist **Pia Arke**; community activist turned politician **Mariane Paviasen**, and "new" explorer **Felicity Aston**, display innovative responses to this issue. Due to climate change, these women experience a different land than did their historic predecessors. They explore Greenland through science, the arts, community activism and entrepreneurship, but their profound, deeply felt commitment to this vibrant country remains the same.

To date, fieldwork has been conducted in Greenland, Denmark, England, Scotland and the United States, and further research will be carried out in Greenland in 2024. *Where Bold Women Go Exploration and Climate Change in Greenland* will be published in 2026 by Princeton University Press. Joanna can be contacted at joannakafarowski@gmail.com

COLLECTIONS

“WAITING TO BE REUNITED”? AN INTERNATIONAL TEAM TAKES ON THE PONIATOWSKI AMUR COLLECTION

By Igor Krupnik, Joanna Dolińska, Stefania Skowron-Markowska, and Marta Nowakowska

A quick recap...

ASC Newsletter No.30 featured an article about a new study of some 150 ethnographic objects from the Amur River region in Siberia now housed with the NMNH Anthropology Arctic/Siberian collections (Krupnik 2023). The objects are associated with the name of Polish anthropologist **Stanisław Poniatowski** (1884–1945), who collected them (or most of them?) on his field trip to the Amur River in 1914. He himself called it “going to the land of the Goldi and Orochon (people)” (Poniatowski 1966). Today’s names of these Siberian Indigenous nations are the Nanay and the Udehe, respectively.

Poniatowski’s trip of 1914 was undertaken on behalf of the Smithsonian Institution and was initiated by Dr. **Aleš Hrdlička**, curator of physical anthropology at the U.S. National Museum (hereafter USNM). Hrdlička charged Poniatowski to collect physical evidence, such as anthropological measurements and photographs of living individuals, plaster masks, and skeletal remains to support his theory that Indigenous people of South Siberia preserved the original type of the early populations that had peopled North America from Asia many millennia prior. Poniatowski was one of several people commissioned by Hrdlička to collect materials in 1912–1914 for the display on ‘early human races’ at the Panama-California exposition in the city of San Diego in 1915. The outbreak of WWI in summer 1914 changed Poniatowski’s plans and caused a hasty ending of his Amur River expedition and the subsequent fragmentation of his original collection. The bulk of ethnographic objects that Poniatowski collected eventually made its way to Washington, to the USNM, but not his anthropometric measurements, photographs, plaster masks, skeletal remains nor any other evidence he was tasked to collect for Hrdlička.

The 2023 *Newsletter* article introduced a preliminary survey of Poniatowski’s collection and its history at NMNH by **Igor Krupnik**. It argued that the Amur River objects that arrived at the USNM in 1918 and were recorded as two separate accessions, no. 63969 under the name of Poniatowski and no. 63972, under the name of **Vladimir K. Arseniev**, then the-director of the Khabarovsk Museum in the city of Khabarovsk on the Amur River, were actually parts of one collection.

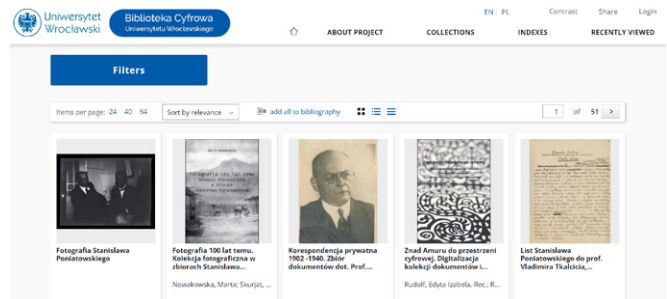


Figure. 1. Poniatowski collection website screen, Wrocław University Library

It was most probably assembled by Poniatowski and was left upon his departure in the care of Arseniev, who eventually shipped it to the USNM.

By that time, Igor was already aware that a significant portion of Poniatowski’s collections from the Amur River was also preserved at the Polish Ethnological Society (Polskie Towarzystwo Ludoznawcze, hereafter PES), in Wrocław, Poland. In included, among other items, his original field diary in Polish from 1914 (published in full in Polish in 1966 and in Russian in 2007–2009), his original photo collection of 120+ glass plates, films, and negatives, paper drawings by the Nanay people, stencils, cut-outs and birch bark pieces, clothing patterns and ornaments, object drawings, and scores of anthropological measurement sheets (that never reached the USNM). All these materials were studied and digitized in 2014–2016 by a Polish team at the University of Wrocław (UWr) and posted online on his memorial [website](#) (Fig. 1). The team leaders, Dr. **Stefania Skowron-Markowska** at the UWr School of Philology and Dr. **Marta Nowakowska** (then with the UWr) published two collection volumes in Polish that described their work on Poniatowski’s collections. One covered the history of digitizing Poniatowski’s legacy at the PES a full century after his Amur River expedition and the other dealt specifically with Poniatowski’s photos and other visual materials. It was clear that the dispersed elements of Poniatowski’s legacy that survived for over 100 years without knowing of each other should be ‘re-united’ and introduced ‘in total’—to museum professionals, northern specialists, and the Indigenous communities in the collections’ ‘home area,’ as a heritage resource.

Building an International Team in 2023

In spring 2023, while Igor was completing his summary of the Poniatowski’s collection at NMNH, Dr. **Joanna Dolinska**, a specialist in Mongolic and Tungusic languages at the University of Warsaw’

Figure 2. Poniatowski's 1914 anthropometric data sheet on the UWL website

Center for Research and Practice in Cultural Continuity in Warsaw, Poland, received a two-month fellowship with the 'Recovering Voices' program at NMNH Anthropology. She was looking for a local project that she could explore while at NMNH and was thrilled to learn that she could join a study of Poniatowski's collection as a linguist. In May 2023, Joanna arrived in Washington with a load of Polish publications on Poniatowski, digital copies of his materials, and some preliminary results of her own explorations at the National Ethnographic Museum in Warsaw.

Also in March 2023, Igor reached out to Dr. Stefania (Stenia) Skowron-Markowska at the Institute of Classical, Mediterranean, and Oriental Studies, School of Philology, University of Wrocław in Wrocław, Poland. Stenia's main research field is in the Chinese martial arts and associated tourism; but her initial training was in the history of Anthropology. Her first book published in 2012 was about the life and work of a famous Polish anthropologist, **Maria Czaplicka** (1884–1921), who traveled to Siberia roughly at the same time, as Poniatowski was on the Amur River. In 2014–2016, together with her Polish colleague, Dr. Marta Nowakowska, then at the University of Wrocław, they led a two-year survey of Stanislaw Poniatowski's records at the PES that produced the above-mentioned online database and publications on Poniatowski's records from the 1914 expedition. They were aware of Poniatowski's materials at the Smithsonian, mainly of the letters he exchanged with Hrdlička, but never heard of his objects preserved at the NMNH. Both Stenia and Marta were keen to get on board, and so the 'team of four' for a joint Smithsonian-Polish study of Poniatowski's collections was born.

In summer 2023, the team began having regular zoom meetings. We made our first goal to take stock of what we knew about the various aspects of Poniatowski's legacy that left its marks from the Amur River to Poland to Washington, D.C. Over the next few months,

the team revisited materials associated with the Poniatowski's 1914 trip and produced a summary paper of 30-some pages, with several appendices. We were up for a few pleasant surprises...

What Did We Learn?

Certain elements of Poniatowski's Amur River legacy, like the ethnographic objects and accession records at the Smithsonian, his correspondence with Hrdlička's, or his photography at PES, were already covered in various other writings. Other elements, even if known, were hardly touched. Below are the snapshots of some additional studies, undertaken in 2023.

1914 Anthropometric Measurement Sheets. For individual measurements, Poniatowski used the standard anthropometric data sheets of the U.S. National Museum supplied by Hrdlička (Fig. 2). According to Poniatowski's preliminary report from 1914, he was able to take measurements of 109 Nanay (Goldi) and 25 Udehe (Orochon) individuals; he took the anthropometric sheets with him to Warsaw upon leaving Khabarovsk in August 1914. Miraculously, they survived WWII and were retrieved after his death; they were later donated to the PES and preserved there with other Poniatowski's records. Anthropometric data collected by Poniatowski in 1914 were analyzed in the 1960s by Polish biological anthropologists **Josef Glinka** and **Franciszek Wokroj** and published with scores of photographs of the individuals he measured. Since these sheets were digitized and are now accessible as a part of Poniatowski's digital collection at the Wrocław University Library (WUL), the online database displays the full set of 134 original sheets filled in pencil and 96 final sheets in ink. These were the materials that Hrdlička never had a chance to look at and use.

Besides being a source of morphometric data that are hardly in use by today's biological anthropology, Poniatowski's anthropometric sheets have additional value that neither he nor Hrdlička could ever foresee. Each sheet was assigned a number and displayed personal names (first and last), age and sex of the individual, as well as the place where the measurement was taken, often with a date. Because of this added data, anthropometric sheets serve as a key source to cross-reference Poniatowski's other types of records; the sheets also constitute the most complete list of Indigenous people (over 130), with whom Poniatowski interacted. They provide personal names of many people in group photographs that were identified in captions only by their sheet number. Besides personal names and age, many sheets display maiden clan names for women, family status, and residence. People's names on sheets may be also cross-referenced for

their contributions to other types of Poniatowski's collections, by making drawings, papercuts, stencils, ornamentations or providing linguistic materials and ethnographic objects.

Another important aspect of Poniatowski's fieldwork was his keen interest in Indigenous languages and, specifically, in the Nanay and Udehe cultural terminology for spiritual objects and symbols. His 13-page publication, *Materials on the Vocabulary of the Amur Gold* (Poniatowski 1923—Fig. 3), contained the list of over 300 words, preceded by a short introduction and accompanied by tables representing conjugational forms in the Nanay language. From Poniatowski's diary we know that one of his key informants was **Semen Aktanka** ("Gendzu"—Fig. 4) from Sikachi-Alyan, and that Poniatowski collected information on vocabulary and grammar from him on July 7, and July 24, 1914. Gendzu also shared the Nanay cultural and religious knowledge during their trip in July–August 1914. Compiling a vocabulary or an organized list of words in a local language was a common practice followed by researchers, missionaries, and educated travelers of the era. Therefore, it might have seemed natural to Poniatowski and explains his effort to compile a short Nanay wordlist (a vocabulary), with some added Udehe words.

The value of Poniatowski's Nanay 'vocabulary' lies primarily in the sociolinguistic dimension of the words he recorded in several semantic categories. Altogether, he included ca. 360 Nanay terms that can be loosely classified into the following categories: [1] time, [2] animals, [3] religious beliefs, [4] human beings according to their age, [5] human body, [6] weather, [7] hunting, [8] verbs, [9] numerals, [10] prepositions, and [11] housing. The very choice of selected categories confirmed his strong ethnographic interests and probably reflected on the topics of conversations with his Nanay informants.

The group of words related to 'religious beliefs' deserves special attention, as it offers a glimpse into Poniatowski's venture into the spiritual world of the Nanay people. In his brief description of [the] Nanay grammar, Poniatowski perceived it through

the lenses of a speaker of an Indo-European language and, primarily, as an anthropologist. He missed some typical features, like the vocal harmony present in all Tungusic languages. What makes his work outstanding, by today's standard, was his attention to the names that local communities used for themselves, but also how their neighbors called them, as well as [to] the neighbor's ethnonyms. It is unfortunate, from a linguist's perspective, that Poniatowski's list of the Nanay and Udehe words, with short explanations, was not followed by a more thorough analysis or by a sample text in the Nanay language to offer insight on how the terminology was used.

With such material lacking, Poniatowski's Nanay 'vocabulary' can be best used when read alongside his field diary filled with drawings of the objects, charms, and spiritual figures he mentions. In the diary, he also recorded stories concerning the origin of humankind and certain taboo topics. In these accounts we also find words for the objects he collected. Lastly, his vocabulary documented the likely Nanay pronunciation common in the Sikachi-Alyan community around 1914. Therefore, his 1923 publication opens a window to the world of beliefs, rituals, and prayers of the Nanay people from the sociolinguistic perspective and is a valuable source for studies in historical linguistics of the Tungusic languages.

And in 2024...

The team has ambitious plans for activities in 2024. With the preliminary survey phase completed at both NMNH and the PES in Wrocław, the next step will be to start converting this new knowledge into tangible 'products.' According to our vision, it should be an illustrated book, a catalog on the American side published with the ASC, and an interactive open portal,

presumably hosted in Poland. The two products should be compatible, perhaps with more Polish language options available on the portal. At this time, we view them structured by the main components of the Poniatowski's collections (in plural), ethnographic objects, photographs, stencils and ornaments, drawings, anthropometric sheets, and also the associated documents, like the Poniatowski-Hrdlička correspondence (at both NAA and PES), excerpts from Poniatowski's 1914 diary, and other personal records.

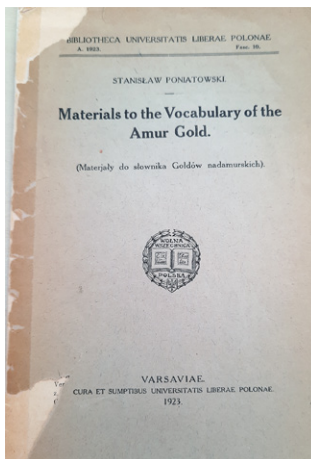


Figure 3. Title page of Poniatowski's *Goldi* vocabulary publication



Figure 4. Olenka Gendzu, Poniatowski key partner and language expert

Fot. 9. Gold Gendzu Olenka w stroju odświętym w fotografii en face. Fot. Stanisław Poniatowski, 1914.

Both formats should include a narrative on his 1914 expedition and major resources for further exploration of his legacy.

We anticipate two academic papers published in 2024 from our studies that have been already submitted to *Arctic Anthropology* and *Sibirica*, respectively. The texts will serve as a base resource for more extensive writings for a future web portal and printed catalog. In Warsaw and Wrocław preparations have begun for a major proposal to one of Polish grant agencies for a funding award for travel, portal development, international conference on museums, heritage management, and endangered languages, perhaps in 2025. There should be support for scores of students from Skowron-Markowska's seminar at the University of Wrocław, who may join the project for professional training in museum research and collection care. Therefore, outreach and mentoring the next generation of museum professionals will be a new addition to the 'Poniatowski project.'

This work is to pave the way for the next phase, bringing Poniatowski's collections, even if in a digital format, back to its 'home area,' to the descendants of people he surveyed in 1914. Even more critical would be to seek insight from Indigenous and local cultural experts from the Amur River region into Poniatowski's linguistic, ethnographic, visual, artistic, and other records, both in Poland and the U.S. For today's communities in the Russian Far East, Poniatowski's materials may provide a heritage resource to strengthen Indigenous cultures and languages. Unfortunately, the prospects for such an effort remain distant as long as Russia's war against Ukraine continues, yet another war that interferes with Poniatowski's Amur expedition legacy. We may only hope that in the future such crucial local expertise can be added to his collections and that the journey once started by a young anthropologist from Warsaw may be completed.

THREE-DIMENSIONAL TECHNOLOGY AND COMMUNITY-BASED CAPACITY BUILDING IN SÁPMI

By Paaula Rauhala

The Smithsonian Institution (SI) safeguards and houses 158 million artifacts and other materials, with approximately 58 of them originating from Sámi communities (Magnani et al. 2023). The Sámi people are the Indigenous people of Norway, Finland, Sweden, and Russia. These countries constitute the heartlands of the Sámi people, called Sápmi. Cultural artifacts originating from Sámi communities are scattered around the world due to expropriation, state policies,

anthropological interest, tourism, World War II, trade, migration, and expeditions. One can find a pair of reindeer fur shoes from Washington, D.C. and an ancestral Sámi drum from Italy. Very often, Sámi artifacts made of reindeer fur and leather were treated with mercury or arsenic in the 1900s for pest control.



Paaula Rauhala

The museum institution I work for, called Sámiid Vuorká-Dávvirat (SVD), operates as an Indigenous-run and community-based museum in Sápmi, located in Karasjok, Norway. In July 2022, I joined my colleagues, Dr. **Jelena Porsanger** and **Anne May Olli** from SVD along with Dr. **Matthew Magnani** (University of Maine) and Dr. **Natalia Magnani** (University of Maine), on a research trip to the SI. This collaboration was centered around three-dimensional (3D) technology, cultural heritage research, and community engagement.

As members of the UArctic Thematic Network on Digital North: Three-Dimensional Technologies and Arctic Education, we arrived in Washington, D.C. with enthusiastic spirit, eager to meet and greet the Sámi cultural artifacts. Dr. **Eric Hollinger** and Dr. **Igor Krupnik**, the professionals at the SI, welcomed us with fantastic hospitality and facilitated research practices throughout the week. Prior to our visit to the SI, we at SVD, collaborated with our community elders to select specific artifacts of special interest from the SI catalog, representing the Sámi collection. The objective was to create 3D digital representations of the chosen artifacts and address potentially toxic elements within them. As a North Sámi conservator at SVD with a focus on the material science of Sámi methods related to reindeer skin processing practices, I was particularly interested in reindeer fur shoes and coats. As a master's student at UiT the Arctic University of Norway with a focus on 3D technologies and heritage preservation in Sápmi, I was drawn to challenging 3D imaging methods with intricate shoe design. The chosen artifacts were digitized using photogrammetry at the SI Museum Support Center. In addition to creating photogrammetric digital models, we were able to test the pair of reindeer fur shoes for possible contaminants. Under the leadership of Dr. Eric Hollinger and



Sámi reindeer fur shoes in the Smithsonian collection. Photo by Paaula Rouhala

Anne May Olli, we detected mercury residue with a handheld pXRF spectrometer. Excited for the mercury compound discovery, SVD is now part of generating research on contaminated Sámi artifacts in Norway.

Our local community elders, many of whom are professional artisans and craftsmen, expressed interest in the same pair of reindeer fur shoes chosen by the museum staff at SVD. Following the visit, we at SVD presented the 3D digital version of the reindeer fur shoes to the community elders. The digital model they studied and examined raised questions and interest regarding the inventive traditions of craftsmanship. The 3D digital model caused our local community to mobilize. The shoes, collected from Alaska, present sewing and design methods that appear distinct from those employed in Sápmi. Integration of 3D technologies enables us to connect remote Sámi artifacts with our local community, without the risk of inhaling toxic vapors accumulated in the air.

This collaboration with the SI is rooted in capacity building with the local Sámi community. This trip provided a learning opportunity for me outside university lectures, which is how I came across with the Arctic Studies Center. The outcome of this collaboration has shifted my research focus from viewing 3D technology as an alternative practice in heritage preservation to actively exploring its potential in identifying key factors for addressing complex craftsmanship methods and conservation practices.

Reference

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EXPLORING ARCTIC COLLECTIONS IN NEW ENGLAND MUSEUMS

By Igor Krupnik

Following the “World and Scrimshaw” conference in New Bedford, I set out on a short tour of the nearby museums across southern New England. This coastal area of southern Massachusetts, Rhode Island, and northeastern Connecticut was once a thriving hub of American colonial trade, commercial whaling, and port facilities with connections to distant lands, including to the North. It was and still is the home to a large Portuguese and Azores diaspora that shares a century-old whaling tradition from the eastern Atlantic. Today, this maritime legacy is mostly preserved in coastal towns with historical buildings and other landmarks, and in local museums that house many insightful objects from the Arctic, like the New Bedford Whaling Museum described above.

My first destination was the storage facility of the Haffenreffer Museum of Anthropology in Bristol RI,



Haffenreffer Museum Collection Research Center in Bristol, RI. Photo courtesy: museum webpage

once a farm owned by the museum founder, **Rudolf F. Haffenreffer, Jr.** (1874–1954). A successful entrepreneur and philanthropist, Haffenreffer collected Native American artefacts (very much like **George Heye**, the founder of the Museum of the American Indian, now the Smithsonian NMAI). After Haffenreffer’s death, his family donated his massive collection to Brown University in Providence RI, whereas the farm located on the outskirts of Bristol, on the shore of the Mt. Hope Bay, became the museum’s Collections Research Center. It also serves as the hub for the Brown University Laboratory for Circumpolar Studies, the seat of our colleagues **Douglas D. Anderson** and **Wanni Anderson**, and the ‘breeding ground’ to so many Northern archaeologists they trained at Brown over decades.

The purpose of my visit to Bristol was neither inspecting the Haffenreffer Museum’s thousands of

archaeological artefacts from Alaska assembled by **Doug Anderson** and his mentor, **J. Louis Giddings** (1909–1964), the museum’s first director, nor even its much smaller ethnographic collections from the Arctic: 300+ objects from Alaska, 250 from Canada, 35 from Greenland, and tiny sets from Siberia and northern Scandinavia/Sami—‘thank you’ **Jen Wicoff**, museum registrar. According to **Rip (Rodney) Gerry**, museum archives manager, Haffenreffer also houses an impressive visual collection from the Arctic that includes over 4,000 slides, prints, and negatives from Alaska, almost all generated by Giddings over his years of Alaskan research, in addition of more than six hours of his film footage, plus some 600+ slides from northern Canada, and 350 from Greenland and Siberia. Seven years prior, I teamed with Rip and **Kevin P. Smith**, then the-Haffenreffer deputy director (now ASC research associate) to explore a small set of about 50 portrait and landscape photographs Giddings took in 1939 on his short visit to the Yupik community of Gambell on St. Lawrence Island, Alaska. The story of that small project in identifying



*Laura Nadelberg, Mystic Seaport Museum registrar, displays a set of model kayaks from Greenland and Alaska.
Photo by Igor Krupnik*

people’s faces on 80-year-old photographs and eventual visual ‘repatriation’ was presented in 2017 (see *ASC Newsletter* 24:49–51). Now, I wanted to check with Rip whether there were any other photographs taken by Giddings’ in Gambell that we missed in 2016–2017.

As Rip and I pored over Giddings’ old prints and negatives, I was able to identify a few more pictures that were taken on St. Lawrence Island. We now assume that the original collection was perhaps of 55–60 photos, if not more, since all portrait images were taken as “face and side” pairs, and for several people either face or side image was missing. The modest “Giddings collection” from Gambell is an insightful window into people’s life on St. Lawrence, now some 85 years ago. Each person photographed by Giddings had his/her history. Many had direct links to dozens of today’s descendants, who would love to see faces

of their deceased family members. It now remains for the Haffenreffer Museum to share this heritage ‘trove’ from its collections, by providing high quality copies of Giddings’ photos to the descendant families on the Island. I also looked at some historical ethnographic objects from St. Lawrence Island kindly shared by museum curator **Thierry Gentis**.

My next destination was the museum of the Rhode Island School of Design (RISD) in Providence RI, following the invitation of **Laurie Brewer**, its curator of costume and textiles. Among myriad other specimens, Laurie cares for a modest collection of Arctic artifacts that she wanted to examine with me. According to museum online database, its collections contain more than 100,000 works of art and design dating from ancient times to the present-day, of which over 84,000 are available online. Of these, only a small portion comes from the Arctic—20 objects from Alaska, including a beautifully engraved pipe from the late 1800s, with the bowl and stem made of ivory; 55 modern graphic works and carvings by the Canadian Inuit, and a few pieces evidently from Greenland. Most of the objects were donated by local owners and collectors who once held them as ‘curiosities’ or were purchased as art specimens to inspire RISD students. We spent three hours going over the objects that Laurie displayed on a large table. This collection was never described and never studied; hopefully, its many fine pieces will one day be exhibited or published in a catalog that tells their stories.

My last stop was in Mystic, CT, where I visited the Mystic Seaport Museum on the banks of the Mystic River estuary. Established in 1929, it is one of the largest specialized maritime museums in the country dedicated to the preservation of the ‘American maritime experience.’ The museum includes a recreated New England coastal village, a working shipyard, a large watercraft collection featuring four National Historic Landmark vessels, exhibit halls and state-of-the-art collection storage facilities. The purpose of my trip was to explore the museum’s Arctic ethnographic collections, particularly those not associated with the famous whaling captain **George Comer** (1858–1937). Comer’s objects, photographs, diaries, and memorabilia acquired primarily on his many voyages to the Inuit of Hudson Bay have been the subject of many published stories, catalogs, temporary exhibits, and long-term displays (see *ASC Newsletter* 25: 59–60). Therefore, on this short visit I was looking ‘beyond Comer.’

At the museum I was met by its enthusiastic collection staff: curator **Krystal Rose**, registrar **Laura Nadelberg**, and cataloger **Jenny Carroll**. Over a day-long stay, they introduced me to many rare and exciting objects from the Arctic; many are hardly known besides

the museum storage walls. Upon my suggestion, the staff agreed to produce an overview of the Mystic Seaport Museum ethnographic collections from the Arctic (yes, ‘beyond Comer’) that is published below.

The takeouts from this short tour were many, but the main message is obvious. Museums across the country, even with the medium-size, even modest collections, house troves of artefacts from the North—in the forms of ethnographic and archaeological specimens, Indigenous art objects, historical photos, diaries, and other documentary records. These museums are often off the ‘beaten path’ of Arctic collection surveys that commonly favor larger institutions. Knowing this local collection geography and sharing it with the home communities in the Arctic and fellow museum specialists via print, exhibits, and increasingly via online databases would ensure that these Arctic heritage treasures are valued by today’s users and the generations to come.

BEYOND COMER: ARCTIC COLLECTIONS AT MYSTIC SEAPORT MUSEUM

By Laura Nadelberg and Krystal Rose

Since 1929, Mystic Seaport Museum has been one of the premier maritime museums in the world, with collections that reflect the extraordinary scope and significance of America’s relationship with the sea and inland waterways. Housed in the Museum’s Collections Research Center, the collections represent a wide variety of materials, from manuscripts to fine art. Within the library, researchers can find over a



*Umiak used by John Bockstoe (1981.156).
Photo by Joe Michael, Mystic Seaport Museum*

million pieces of manuscript material along with large collections of ship’s plans, charts, maps, and oral histories. The art and objects collection includes well over a million photographs, 1,400 paintings, 2,100 ship models, 75 figureheads, 4,000 prints, 1,400 pieces of scrimshaw, and over 450 small boats.

The collection includes a surprising number of Arctic materials collected by whalers, sailors, and explorers. One of the most frequently used Arctic collections is comprised of materials related to whaling and sealing ship captain **George Comer** (1858–1937) of East Haddam, Connecticut. Comer was an amateur anthropologist and naturalist, who in addition to his ship-related work, compiled detailed notes on Inuit life, traded and collected objects, gathered and preserved flora and fauna, and took hundreds of photographs



Summer boots (1948.415-416), child’s polar bear pants (1948.419), and sealskin mittens (1948.419-420), all from the Peter Freuchen collection at Mystic Seaport Museum



Studio portrait of Captain John Orrin Spicer taken in New London, Connecticut, in the mid-1880s (1955.954). After retiring from the whaling industry, Spicer was often seen in New London and on his farm wearing sealskin boots

that give us a glimpse into Arctic life in the late 19th and early 20th centuries. The collection includes small objects and carvings, including a delicate ivory comb made by **Niviatsarnaq** (also known as ‘Shoofly’), hundreds of glass plate negatives, a photograph album, and numerous library materials including correspondence, notes, clippings, and “Records of Births at or near Cape Fullerton, Hudson Bay,” kept by Comer between 1877–1911.

A Visit from Igor Krupnik

The Comer materials are some of the most frequently studied and used materials in our collection, so in March of 2023, when Dr. **Igor Krupnik**, Smithsonian Curator of Arctic and Northern Ethnology, visited Mystic Seaport Museum to examine the Arctic collections, Museum staff were surprised his research visit was to see everything of Arctic origin not related to Captain Comer. This was *not* to diminish the Comer-related materials in the collection, but because the Comer materials are well-known and documented, and he was interested in exploring what other Arctic materials the Museum held. The collections staff were eager to guide Krupnik through the Arctic materials and take him up on his offer to examine and bring more clarity to some of the lesser-known Arctic collections, many of which have little provenance and documentation. Some of the collections he explored have associations with other well-known names such as **Nelson R. Perry**, **Peter Freuchen**, **John Bockstoce**, and others. What follows is an overview of some of those materials.

Arctic Watercraft

Among more than 450 small boats held in the watercraft collection, several hail from the Arctic. One frequently exhibited example is an umiak, donated to the Museum by ethnologist and archaeologist John Bockstoce (b. 1944). Originally built around 1930, the vessel was used to make trade trips between the Diomed Islands, Siberia, and Nome, Alaska. By 1971, the vessel (now greatly deteriorated) was purchased by Bockstoce with the goal of doing a complete restoration using traditional materials. With the help of his friends from the area (Diomed Islands, King Island, and Nome),

the group first restored the frame, and then prepared, sewed, and fitted walrus hides to the frame in the traditional Inupiat way.



Ugiuvak (King Island) two-hole qajaq (1938.312). Photo by Joe Michael, Mystic Seaport Museum

Bockstoce and a crew of five then spent the next several years, traveling more than six thousand miles through the Northwest Passage. During this time, Bockstoce and his crew completed coastal surveys for historical commercial whaling sites, while also following some of the path of the original Thule voyagers. Their voyage from Alaska to Cornwallis, Nunavut, became the first open-boat voyage to travel the Northwest Passage in modern times.

Also in the watercraft collection is a qajaq from Ugiuvak (King Island), Alaska, unique because of its two-hole design. Constructed in a similar manner to the one-hole

qajaqs of this region, this two-hole qajaq consists of a wooden frame, covered in seal skin and lashed with sinew. While we don't exactly know when it was made or for whom, we do know that it was collected in the late 1920s by **John Borden** (1884–1961) of Chicago, a wealthy businessman and self-proclaimed explorer. While visiting Ugiuvak, Borden saw the qajaqs that had been traditionally used by the Ugiuvvaqmiut people for centuries, to hunt and fish. Borden, an avid

sportsman, was impressed by the vessel's efficiency in rough waters and decided he wanted to have one replicated in canvas. He shipped the skin qajaq off to the Old Town Canoe Company for them to use as reference, but while in transit, he fell upon financial difficulties and had to abandon the project all together.



A display of implements, many associated with Nelson R. Perry. Photo Joe Michael, Mystic Seaport Museum

Art, Objects, Photography, and Clothing from the Arctic

One of the collections Krupnik focused on was that of Nelson R. Perry (1894–1964). Perry was the Regional Manager of the Met Life Insurance Company, but also an avid collector of Indigenous Arctic art. As an amateur anthropologist and member of the Explorers Club, he made numerous trips to the Arctic, predominantly Alaska and Canada. While some of the

pieces he brought back were traditional or previously used pieces like spears and paddles, he predominantly collected trade art including carvings, dolls, and clothing. In going through this material with Krupnik, we began to understand the importance of trade art documenting shift from traditional art to contemporary art in the Arctic.

Krupnik was surprised to discover that the Museum holds a number of high quality Greenlandic model *qajaqs*. At least eight of these models are almost completely outfitted with miniature tools. Three models have small model qajaqers sitting in the boat. Little was known about the models because of minimal catalog records. Most were acquired by the Museum between 1959 and 1966, and many were incorrectly identified as simply “Eskimo kayaks.” Only a few gave clues to their origin based on information in the donation paperwork. An example of this includes *qajaq* models given in memory of Arctic explorer Peter Freuchen by his widow shortly after his death.

In looking through our model *qajaqs*, Krupnik pointed out key characteristics that differentiated them from similar vessels of other regions such as Hudson Bay and Alaska. We were able to use this information to closely examine the collection and confirm the three models we knew were from Greenland, but then also identified five more that were decidedly Greenlandic, with another being highly probable.

While examining one of the models, we noticed that its qajaqer was wearing a leather coat with a fitted hood, which was presumed to be a *tuilik*, or watertight *qajaqing* jacket from Greenland. This reminded staff of an object in the collection that had been donated in 1960 and catalogued as an “Eskimo parka.” A closer inspection of the garment showed many similarities to the one worn by the model qajaqer—the coat was made of leather, with a fitted hood, and had ties with bone toggles. Bearing an uncanny resemblance to the *tuilik* worn by the small model, collections staff dug into the object correspondence files to see if there was any more information to help determine the origin of the jacket.

As it turns out, the donor of the piece was the nephew of **John M. Jaynes** (1878–1967), the Chief Engineer on the schooner *Bowdoin* for 10–12 years, who traveled on multiple voyages to Greenland with **Donald B. MacMillan**. The odds of this jacket being a *tuilik* in the traditional Greenlandic style increased exponentially, leading to the update the object’s record. The Freuchen collection, donated by his widow and well-known fashion illustrator, **Dagmar Cohn**, also includes a child’s pants made of polar bear fur, leather summer boots, and mittens featured on the previous page.

Another notable and one-of-a-kind object with components from the Arctic is a narwhal and walrus tusk coat rack made by Connecticut whaling captain **John Orrin Spicer** (1835–1917). The coat rack was accompanied by a colorful account from Spicer, claiming that he “worked on every piece but did not make it all.” Spicer claims he captured the narwhals and walrus in the Arctic, and gathered the dark, fine-grained wood from the Sandwich Islands.

Manuscripts

Many objects mentioned above have connections in the Museum’s manuscript collections. Such is the case with Collection 8, the **Henry Grinnell** (1799–1874) letters, and photographs that we have of Inuk guide and interpreter **Taqulittuq** (1838–1876) (often transliterated as Tookoolito or referred to as ‘Hannah’) and her family. The Grinnell letters focus on the **Charles F. Hall** (1821–1871) polar expedition and include letters from Hall to Grinnell. Hall frequently mentions Taqulittuq, her husband Ipirvik (also known as ‘Joe’), and their daughter Panik (also known as ‘Sylvia’). Taqulittuq and Ipirvik were two of the most well-known and widely traveled Inuit of their time. They worked with Hall in searching for the lost Franklin expedition and the Polaris expedition, which attempted to reach the North Pole. In addition to the Comer and Grinnell manuscripts, the library collection also holds the papers of the previously mentioned collector, Nelson R. Perry, and the Arctic-focused research papers of maritime historian **Lucille M. Showalter**.

The Collections staff at Mystic Seaport Museum would like to thank Dr. Krupnik for sharing his knowledge regarding Arctic items in the collection. There is still much to learn about these materials, and we happily welcome researchers to the Collections Research Center by appointment. Please visit [our website](#) to learn more.

MANAGING MUSEUM AND COASTAL SITE COLLECTIONS

By Alex Jansen

While at the Smithsonian’s Arctic Studies Center, I have been working with Dr. **William Fitzhugh**, helping him manage archaeological site collections accumulated from decades of field research, including over 700 sites located in Canada, Mongolia, Siberia, Japan, and Alaska and several thousand lithic artifacts, bone specimens, and other site materials. I conducted an inventory of these materials and helped prepare them for permanent curation at the Smithsonian, Canada, and elsewhere. For my future Ph.D., I plan



Jellyfish in Baltimore Harbor. Photo by A. Jansen

to research how people adapted to and used coastal and marine environments and how this can provide information on how to better manage the ocean today. I will also focus on how museum collections can serve as teaching tools on ocean issues to educate people about the need to preserve marine ecosystems.

While at the museum, I also published two papers on my research in Chesapeake Bay and Baltimore Harbor through the Smithsonian's Ocean Portal, including "Oysters as a Keystone Species in the Chesapeake Bay" and "Jellies in the Baltimore Harbor." These papers explore people's personal connections to their local waterways by highlighting rich coastal and marine ecosystems right in their own backyards through the use of museum collections, underwater photography, and video. In both papers, I utilize my work in the Chesapeake Bay and Baltimore Harbor along with examples from the museum's Sant Ocean Hall to help educate people about the ocean. Furthermore, I have been working with the Smithsonian Environmental Research Center (SERC) on the development of a series of educational films and other initiatives based on my research and underwater photography and video work. These films focus on jellyfish and comb jellies, oyster reef species, and seasonal species, to enhance education about the Chesapeake and ocean issues. See: [Oysters as a Keystone Species in the Chesapeake Bay](#) by Alex Jansen (2023).

REMOTE ENGAGEMENT TECHNOLOGY FOR IMPROVED COLLECTIONS ACCESS

By Eric Hollinger

Today, we use various forms of video communications everyday and almost take it for granted, and some of us remember when such technology was science fiction. With the COVID pandemic, visual tech became more commonplace and indispensable to almost everyone.



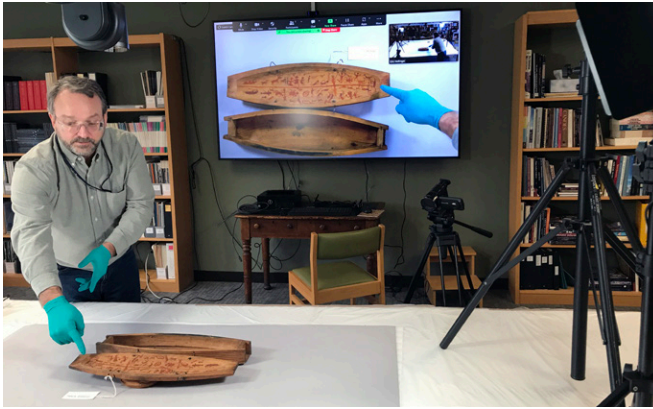
NMNH curators, RO staff, and collections managers teleconference from Virginia with Tlingit leaders in Juneau, 1995

We are now recognizing it can also be an essential tool for connecting distant communities with heritage collections at the Smithsonian.

The idea is not new for the NMNH Anthropology Department and its Repatriation Office (RO). Consultation required by the 1989 NMAI Act brought challenges of connecting Indigenous representatives with the collections from as far away as Hawaii and Alaska. In 1995, we experimented with teleconferencing for repatriation consultations using the FTS2000 Video Interoperability teleconference system of AT&T. Curators and RO staff took collection pieces to AT&T offices in Vienna, Virginia, where they were connected by cameras and a TV monitor with Tlingit and Haida in Juneau, Alaska. It was a great idea, but the technology was not up to supporting real-time discussion of objects. The time delay for the sound resulted in long pauses and turn-taking between comments and questions. After the experiment, efforts emphasized in-person visits to the collections for the next 25 years.



Tlingit elder Florence Sheakley lecturing students in Alaska via a web-camera held by Eric Hollinger in 2017



Eric Hollinger using the new Remote Engagement Station to show a Yupik box from the mouth of the Yukon River (E176082). Photo by Matt Sanger

Video technology next found its way into collections by visitors with 2-way cameras on cell phones who connected with those back home to discuss what they were seeing. Tlingit teachers and elders using FaceTime showed collections to students in Wrangell and Juneau in real-time, making the experience a virtual field trip to the Smithsonian!

The pandemic made us realize that video communication is here to stay and we had better start thinking about how to use it effectively. The financial and time cost, and the physical and emotional toll of a trip from Alaska to Washington, D.C. can be prohibitive for many. Even if some can make the journey in person, many more at home still need to view and engage with collections. Recently, the RO purchased video cameras, lights, and rigging equipment to outfit a large room along with a computer and large screen monitor. An overhead camera with remote control allows one to pan across large items and zoom in close to facilitate real-time discussions with one or more participants on a zoom call. We anticipate that visiting researchers who come to the museum can connect via this system with people back home, or with experts anywhere in the world. We are now researching cameras that can be rolled on carts among the drawers and cabinets so remote viewers can browse and select what they wish to spend more time examining. We expect remote access for collection and consultation will become standard practice for repatriation and other forms of community engagement with the museum's collections.

MYSTERIOUS FIVE-SIDED STONE FROM ST. LAWRENCE ISLAND

By Brendan P. Kelly and Edwin Campbell

In February 2023, **Vera Metcalf** and **Brendan Kelly** were in Gambell, Alaska when **Edwin Campbell**

showed us a stone that he had excavated from the tundra on the north side of St. Lawrence Island. He estimated that he uncovered it from a depth of 6 to 8 feet. He hoped we could identify it, but neither of us had never seen anything like it. The stone's maximal dimensions are 89 mm (length) and 49 cm (width). At the base, five planar surfaces measure 30, 33, 25, 24, and 20 mm and taper to a dull point. The stone appears to be broken at both ends.

I sent a description and photographs to **Bill Fitzhugh**, **Kirk Johnson**, and **Torben Rick** at the Smithsonian Institution, but they also could not identify the stone. Recently, I took the stone to the Museum of Natural History where Fitzhugh and Johnson examined it. Johnson thought the object was likely siltstone. Fitzhugh noted that one of the surfaces had a subtle but distinct concavity as develops on sharpening stones. Johnson then examined the surface with magnification and noted very fine, parallel striations.

We share the photographs and description here in the hope that a reader will have insight as to the stone's identity. Please share any thoughts with Kelly at bpkelly@alaska.edu.



The 5-sided 'mystery' stone. Photos by Brendan Kelly and Kirk Johnson

ASC-KITIKMEOT BOW AND ARROW WORKSHOP

By William Fitzhugh and Brendan Griebel

Over several days during the first week of May, 2023, the ASC and Pitquhrikkut Ilihautiniq / Kitikmeot Heritage Society (PI/KHS) of Cambridge Bay, NWT, Canada, conducted study tours among the NMNH and NMAI bow and arrow (B&A) collections, and held a workshop at NMAI documenting the **Donald Cadzow** bow and arrow collection. Cadzow's materials include complete B&A sets collected from Inuvialuit hunters between 1917–1919 when Cadzow was collecting for the Museum of the American Indian (now NMAI). Most of Cadzow's collections are from the Inuinait (Copper Inuit) of Coronation Gulf and Cambridge Bay



Left: Cambridge Bay Elder Mabel Eteqik opens the workshop with a traditional Inuit qulliq lighting ceremony. Right: Stephen Loring inspecting Cadzow arrows with Kim Crockatt, Emily Angulalik, Mabel Eteqik and Charlie Ikkutisluk at NMAI.

Photo by B.D. Engelstad

(Iqaluktuuttiaq), Nunavut. The collection is one of the most complete inventories of Inuit material culture of any ethnographic group in the Canadian North.

The study tour and workshop came together from a confluence of events beginning with the ASC's association with **Brendan Griebel**, a long term employee and Manager of Collections and Archives at PI/KHS). With Griebel's help, PI/KHS and its community have become leaders in reassembling heritage collections—artifacts, archival information and photography—that has been transferred to southern institutions and lost to home communities. Heritage returns will be important assets in a new cultural facility soon to open in the community (see “Kuugalak Cultural Center” by Griebel in this issue).

The other stream of activity was the appearance at ASC of SI predoctoral fellow **Coline Lemaitre** who spent several months researching NMNH B&A collections for her Ph.D. thesis in Paris. Lemaitre, an archery athlete, returned from fieldwork in Alaska to work with Cambridge Bay participants in discussions about B&A technology. Cadzow's collections and ethnographic photography by early field anthropologists like **Vilhjalmur Stefansson** and **Diamond Jenness** provided some of the best ethnographic bow information in northern North America because this technology was still in use in the early 20th century, and vestiges of that knowledge remain today.

The primary goal of the project was to revitalize traditional practices of Inuinnait bow manufacture and use. The successful revival of this technology requires practical understanding of the materials and techniques involved in rebuilding the technology, but also a broader comprehension of the language,

beliefs, relationships, and supporting technologies (ie. bow cases, amulets, arrows, etc.) that once provided social and cultural context for bow-making among Inuinnait. Project objectives included: 1) Identifying relevant Inuinnait bow collections and transferring images, collections records, and additional metadata to PI/KHS; 2) bridging Inuinnait experts with cultural and heritage collections; 3) documenting select bows and related technologies, including the taking measurements, blueprints, photos, and recording terminology and

manufacture techniques; 4) documenting and digitizing Smithsonian archival resources; 5) building awareness of the importance of bow manufacture to Inuinnait culture, past and present.

PI/KHS participants spent a full week at the Smithsonian. Monday, May 1st they visited the ASC, toured NMNH exhibits and facilities, discussed Inuit approaches to youth curriculum enhancement, and visited the MacFarlane bow and arrow collections at the Museum Support Center in nearby Suitland. Tuesday brought the group to the NMAI to meet staff and visit exhibits in the morning with a transfer to NMAI's Cultural Resource Center in Suitland. Wednesday saw a return to CRC for workshop discussion and research on Cadzow collections. Thursday was a free 'recovery' day for relaxation and Mall visits, followed by a dinner at the Fitzhugh residence. Friday was another workshop day with the Cadzow collection at CRC, including remote information sharing of objects with KHS people in Cambridge Bay via digital conferencing. The workshop ended with discussions about future ASC-PI/KHS collaboration, sharing of archival documents, and a possible future ASC visit to Cambridge Bay after the opening of its new Kuugalak Cultural Center. Our discussions ended with a dinner at one of the DC waterfront restaurants, and participants prepared for their flights home.

Workshop participants included **Emily Angulalik**, PI/KHS executive director; **Kim Crockatt**, PI/KHS CFOO; **Mabel Eteqik**; PI/KHS board member, elder in residence; **Brendan Griebel**, PI/KHS manager collections and archives; **Charlie Ikkutisluk**, PI/KHS program coordinator; **Tommy Epakhoak**, technology expert and knowledge holder; **William Fitzhugh**,

NMNH curator and director, Arctic Studies Center; **Stephen Loring**, museum anthropologist, Arctic Studies Center; **Coline Lemaitre**, Ph.D. candidate, Université de Paris, professional archer; **Cali Martin**, supervisory collections manager, NMAI; **Martin Thomas Nweeia**, educational curriculum development, Harvard. NMAI participants included **Terry Snowball**, **Cali Martin**, collection manager; and **Nathan Sowry**, reference archivist.



One of several Cadzow B&A sets studied at NMAI.
Photo by NMAI



Feathers and fletching cutting board in the Cadzow collection. Photo by NMAI



MacFarlane model Inuinnait bow from Fort Anderson, NWT.
NMNH E007487. Photo by S. Loring



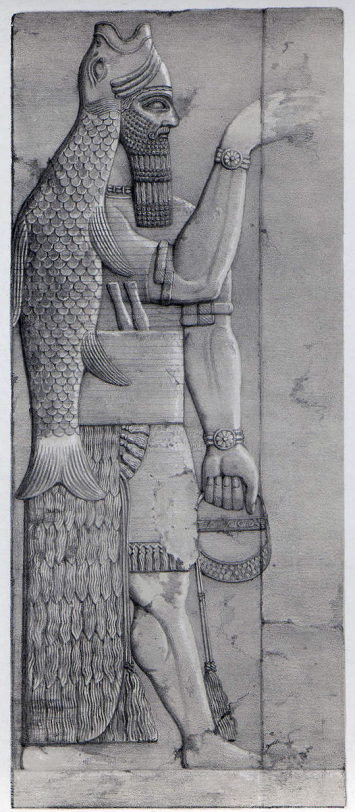
Roderick MacFarlane Inuinnait quiver and arrow set from Fort Anderson, NWT. NMNH E007481. Photo by S. Loring

FISH SKIN MAGIC: EXPLORING OCCULT PRACTICE IN ANCIENT MESOPOTAMIA AND ARCTIC CULTURES

By Elisa Palomino

Ancient civilizations in Mesopotamia and the Arctic developed intricate occult rituals, incorporating fish skin into their religious practices and attire. Mesopotamian priests and Arctic shamans alike wore fish skin garments, tapping into its mystical properties to navigate the supernatural realms. In Mesopotamia, fish were revered for their divine qualities, with Enki, the god associated with water, fertility, and healing. Enki created the seven demi-gods or Apkallu, one bearing the form of a fish-human hybrid. These figures, depicted wearing cloaks made from a species of giant carp from the Euphrates and Tigris basin, symbolised the connection between humanity and the divine.

Mesopotamian civilization boasted sophisticated leather production technologies, utilising various animal hides for clothing, footwear, and cultic objects. While primarily using domesticated animals for leather, ancient texts mention the tanning of fish species like mullet, suggesting their potential use in ritual attire. Depictions of figures clad in fish-shaped capes, possibly priests, appear in Mesopotamian art. They could take the form of colossi as bas-relief sculptures in palaces and temples, at doorways, as apotropaic clay figurines buried under floors in groups of seven, as cylinder seals or seal impressions or depicted on magical plaques. Such usages accord with the fact that fish-cloaked apkallu had the role of protective supernatural beings. Though lacking archaeological



Left: Fish Apkallu. Drawing of Bas-relief from the ruins of Nimrud excavated by Sir Austen Henry Layard. Artist N. Chevalier. Photo credit: Trustees of the British Museum Right: Henry Lansdell (1841–1919) British explorer, dressed in a Nanai fish skin coat from the Amur River, Siberia. Photo credit: Ethnographic Museum, Stockholm

evidence, these representations suggest a historical practice of making garments from fish skins.

Similarly, in early modern Arctic societies inhabited by Indigenous Peoples such as the Inuit, Ainu, Saami, Hezhe, and Nivkh, fish hold significant spiritual importance. These cultures, deeply connected to nature and reliant on fishing, viewed fish as sacred beings. Fish skin served as a raw material for crafting garments and accessories, symbolising a spiritual connection with the animal world. Arctic shamans, acting as intermediaries between humans and spirits, often wore fish skin garments during rituals to commune with the spirit realm.

A comparative analysis reveals striking parallels between Mesopotamian occult practices and Arctic shamanism involving fish skin. Both cultures recognised the occult properties of fish skin, using it to access transcendent powers. Despite cultural differences, fish skin remained symbolically significant, representing harmony between humans, spirits, and the natural world. Whether through myths or practical rituals, wearing fish skin signified humanity's

interconnectedness with the divine forces of nature, offering protection and healing.

Both Mesopotamian religion and Arctic shamanic practices shared a belief in divine powers residing within animals, plants, and natural forces. However, a notable shift occurred in Mesopotamian times, where deities became distinct from natural phenomena, transitioning from manifestations of nature to controllers of it. Similarly, recent colonisers of Arctic territories assumed control over nature, mirroring this separation of divine beings from natural elements.

Contemporary society's emphasis on materialism has led to a neglect of spiritual harmony with nature. Rituals, deeply ingrained in human culture, preserve cultural heritage and foster community bonds. Exploring Mesopotamian occult practices and Arctic shamanism sheds light on humanity's quest for spiritual connection and transcendence. By acknowledging these ancient practices, we can rediscover our spiritual heritage and deepen our connection with the universe.

This research was carried out during a postdoctoral fellowship at ANAMED, the Anatolian Civilizations Research Centre at Koç University, Istanbul in 2023.



OUTREACH

LIGHTS OUT—RECOVERING THE NIGHT SKY OPENS AT NMNH

By *Stephen Loring* (exhibit co-curator)

When the exhibit team was considering the problem of light pollution as something the museum should explore, I joined the exhibition and education staff in conducting a survey of museum visitors to judge public awareness of the problem. I approached a family, from Texas as it turned out, and asked if I might ask them a few questions about their experiences in visiting the museum. In steering the conversation towards their awareness of various conservation themes I opened with a question “Have you ever seen the Milky Way?”. Their little girl, seven-eight-ish, looked at me quizzically and asked, “the candy-bar?” We all smiled at her question as her father recounted a memory of riding at night in the scrub-brush country near Alpine with only the light from the stars to mark the trail. Now while living outside Houston, he allowed wistfully, as indeed it had been a long time since he'd gazed up at the night sky.

Today, perhaps 80% of Americans live in places where light pollution has obscured all but the brightest stars and deprived many of what once was a common denominator of the human experience. The anthropologist Laurens van der Post wrote of an evening camping in the Kalahari with several Kung! hunters who remarked on the sounds the stars made. They were incredulous when van der Post allowed as he couldn't hear anything at all and thinking it was the crackling of the fire, they took him further afield and inquired if now he could hear them and when he still couldn't, accompanied him back to the fire and consoled him.

As star light and fire light are replaced by street lights and LCD screens a certain intimacy and wonder and appreciation of the natural world fades as well. Life on Earth evolved in response to the diurnal cycle of night and day, and the loss of the night sky resulting from artificial lights has disrupted this pattern around the world, making nights brighter in ways that negatively affect nature and people. Light pollution has profound

consequences for much of the natural world and is responsible for declines in insect populations (including critical pollinators) and migrating songbirds, who die in the tens of thousands from striking city buildings when they become disoriented by excessive urban lighting. (For more about the impact of light pollution on bird migration, see this [website](#)).

The Light's Out exhibit is a collaboration with the Harvard/Smithsonian Astrophysical Observatory (SAO) whose Dr. **Kimberly Arcand** served as co-curator and joined the NMNH's exhibition staff—including **Juliana Olsson** (writer), **Jennifer Collins** (education and outreach), and **Shannon Willis** (design) and **Jill Johnson** (exhibit developer/project manager). The resulting 4340-square-foot exhibit opened in March of 2023 and will remain on display through December 2025. A traveling version with the Smithsonian Institution Traveling Exhibition Service (SITES) is planned. Through extraordinary photographs, objects from the museum's collections and interactive displays, *Lights Out* offers ways to discover and regain a connection with the night sky. In addition to the exhibition's visual components, it offers

opportunities for blind and low vision visitors, as well as visitors who prioritize experiential and multi-sensory learning. Building on museum collections, the exhibit's stories touch on the history of lighting including objects from the National Museum of American History, the cultural importance of night skies, the organisms (including humans) impacted by artificial lights, and the tangible solutions to light pollution that also help tackle climate change.

At the center of the exhibit an immersive night-sky theatrical experience (produced by **Katherine Raisz**/42 Degrees North Media and NMNH Exhibits audiovisual team) transports visitors to a dark-sky park in Coudersport, PA, with a timelapse film and soundscape from dusk to dawn. The film explores the universal fascination that the stars and constellations have had for peoples throughout time and the notion that each



Mio Yachita, Kenyu Yamamaru, Masahiro Nomoto, Sato Hiroki, Jill Johnson and Juliana Olsson.

Photo by William Fitzhugh

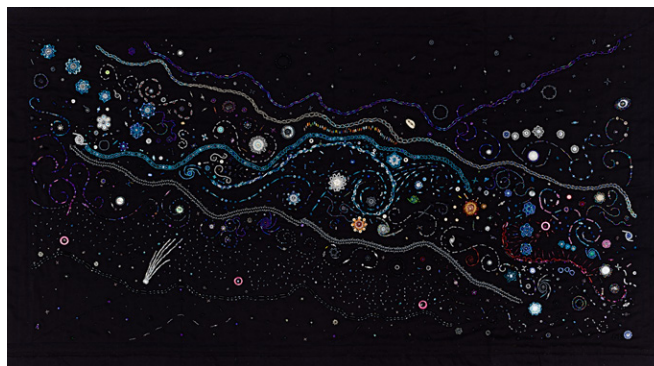


Dead bird display: just one example of light pollution's toll on our planetary partners. NMNH-2023-00894. Photo by B.M. Hance, J.D. Tiller, P.R. Lee, and J. Di Loreto, Smithsonian Institution

culture interprets their view of the same night sky uniquely. The film retells several stories about the distinctive constellation we call the Pleiades: one based on Greek mythology, another as told by the Ainu of northern Japan and Sakhalin, and a third story from Aotearoa (New Zealand). We drew on the long association between the Arctic Studies Center and the Ainu National

Museum (including **Masahiro Nomoto**, Director of the Ainu Museum's Cultural Promotion Department, with whom we have worked closely since 1997) and with **Rangi Matamua** (Māori cultural astronomer and Professor of Mātauranga Māori at Massey University) to capture their unique language and perspective on the significance of this star cluster that is visible around the world. The opportunity to engage with Ainu and Māori scholars, students, and artisans, was one of the most rewarding aspects of the whole exhibition project. We sometimes take for granted (but never should) the weight of the stories we tell as evidenced from email received from a New Zealand visitor several months after the exhibit opened: "*I just wanted to thank you (and your team) for sharing our story and express what a honour and privilege it was to see our ancestral knowledge displayed in such an acclaimed museum. Kind regards/nga mihi nui,*" **Nathan Matamua**.

It has long been a hallmark of the Arctic Studies Center's engagement with exhibits at the NMNH to recognize the vitality and continuity of the northern cultures whose heritage and history we seek to celebrate. Indigenous participation and contributions have figured significantly in *Inua* (1982), *Crossroads* (1988), *Ainu* (1999), *Looking Both Ways* (2001), and *Living Our Cultures* (2010), and we have always tried to acquire contemporary objects that augment these exhibits of primarily 19th-century museum specimens as a means of demonstrating the continuity and vitality of cultural practices and perspectives. Towards this end I had learned of an extraordinary Gwich'in artist, **Margaret Nazon**, from Tsiigehtchic, Northwest Territories, Canada who was causing something of a stir among devotees of Northern Athabaskan beadwork for her extraordinary, beaded tapestries inspired by the night sky and by the fantastic images produced by the Hubble telescope. With funds allocated from the exhibit's budget and



Milky Way, Starry Night #2" by Margaret Nazon, Gwich'in Tsiigehtchic, Northwest Territories, Canada, 2021. The only other light a candle glowing inside our parent's nearby tent, my brothers and I lay in the snow, awestruck by millions of stars, sparkling and streaking across the expansive Arctic sky. Credit: NMNH-2023-00127: E437462, Anthr. Dept., SI. Photo by P.R. Lee, B.M. Hance, and J. Di Loreto

from the Anthropology Department (thanks to then chair **Igor Krupnik**) we were able to commission one of [Margaret's beaded tapestries](#) for inclusion in the exhibition and subsequent accession in the Anthropology collections, where it will reside alongside earlier masterpieces of Gwich'in beaded clothing and personal items. In the *Light's Out* exhibit Margaret's tapestry is prominently situated in the section dealing with the universal cultural engagement with the night-sky and transitions between a section featuring objects derived from Inuit, Yup'ik and Plains Indian (Kiowa and Lakota) cultures and Van Gogh's *Starry Night*.

In an era of rapid global change, the Smithsonian Institution—and the NMNH in particular—should play a prominent role in helping the public see themselves as part of the natural world, understand how their actions impact the planet, and make choices about the future. In tackling the issue of light pollution, the *Light's Out* exhibition explores the means available to confront and reduce the problem, as such it taps into the Earth Optimism movement, which is changing the conservation conversation from doom and gloom to optimism and opportunity.

For a variety of reasons, I could never convince my colleagues on the exhibit team to include the last stanza from Dante's *Inferno* on a panel as one exited the exhibit hall, but I get to do it here:

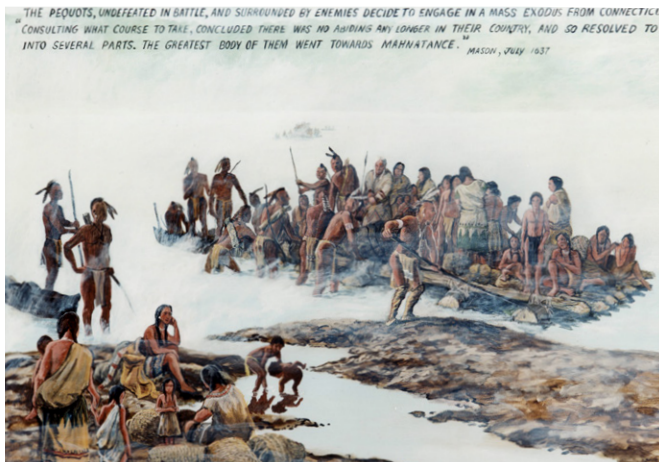
*Him first, then me –until we came to a round opening
Through which I saw some of the beautiful things
That come with Heaven. And we walked out
To once again catch sight of the stars.*

— Dante Alighieri (1265–1321), Mary Jo Bang trans. 2012

ANCIENT SEA PEOPLES OF THE NORTH ATLANTIC: A FILM BY THEODORE TIMRECK

By Bill Fitzhugh

For decades, Smithsonian scientists worked to uncover the importance of one of America's most surprising anthropological mysteries—the story of the early ocean-adapted, Native civilization that once existed along the now-submerged Atlantic coastlines of North America. The history of Native boating dates to the Ice Age, and it took 40 years of research to document it.



Imagined view of Native American raft people. For years, anthropologists lacked a full understanding of the early Native American peoples that once lived along the Northeast coast. This painting represents the nadir of the public image of Indigenous watercraft. Decades of research in the Far Northeast by Smithsonian scientists has revealed a very different story. Painting by David Wagner

[Ancient Sea Peoples of the North Atlantic](#), a documentary film by Peabody award winning filmmaker **T.W. Timreck**, tells the story of how the oceans and their changing environments have shaped the development of cultures over millennia. The film offers a Native American perspective and places this discovery in the context of the world's poorly understood maritime revolution. Since 1980, Timreck has worked with Smithsonian scientists **William Fitzhugh, Stephen Loring, Dennis Stanford, Douglas Owsley, and Carolyn Rose** to document their research and produce television, exhibition, and electronic media. On October 18, 2023, Timreck presented his film at the Natural History Museum, followed by Q&A and panel discussion with Timreck by William Fitzhugh and Stephen Loring of the Museum's Arctic Studies Center.

Timreck became associated with the Smithsonian in the mid-1970s when I was researching the prehistoric

cultures of Labrador—at that time an unknown archaeological province. Our discovery of Maritime Archaic cultures dating 7500–3500 years ago revealed the existence of a highly developed early Indian civilization similar to that known in historical times from the Northwest Coast Indians. Apparently, cold climates and icy waters were not the impediments to the development of cultural complexity assumed by earlier anthropologists. Timreck's film follows the archaeological discoveries in the field documenting how these ancient Native Americans progressed over four thousand years from small-scale hunters and fishermen to maritime hunters and traders of Ramah chert that reached peoples as far south as the mid-Atlantic coast. Ranging farther afield, Timreck compares these cultural developments of the Far Northeast to the early peoples and cultures of Northern Scandinavia and Western Europe, finding startling parallels that reveal cold-water paths to cultural complexity are a general feature of northern maritime environments.



Title image of the film

Ancient Sea Peoples of the North Atlantic has been selected for showing at the District of Columbia Environmental Film Festival in March 2024.

ASC TRAVELING EXHIBITIONS: *NARWHAL AND KNOWING NATURE*

By Carole Bossert

The Smithsonian Traveling Exhibition Service (S.I.T.E.S.) exhibit *Narwhal: Revealing an Arctic Legend* has been making its way across the country, opening recently at the Upcountry Museum in Greensboro, South Carolina, where it will be on view through June 16, 2024. It will then travel to a Canadian venue, returning in September where it will remain be seen at at the Peabody Essex Museum in Salam, Massachusetts, through February 2025.

Knowing Nature: Stories of the Boreal Forest / Historias del Bosque Boreal opened its tour at



Top: Narwhal: Revealing an Arctic Legend at the Milwaukee Public Museum. Bottom: Knowing Nature: Stories from the Boreal Forest at the Michigan State University Museum, on North American tours with S.I.T.E.S. Photo credits: MPM and MSUM

Michigan State University Museum on April 9, 2023. The show sparked several innovative projects for graduate students, including the development of an app-based interactive game focused on sustainability. The exhibit was also the focus of a project supported by Smithsonian's Office of Accessibility to test the feasibility of using RFID technology to provide customized audio description to blind and low vision visitors. Knowing Nature is scheduled to open this summer at Minnetrista, a 40-acre art museum and gardens complex in Muncie, Indiana.

Editor's note: Carole was the S.I.T.E.S. research and production coordinator for the ACS's *Narwhal* and *Boreal* exhibits.

THE CROSSROADS 2 WEBINAR SERIES

By Igor Chechushkov

Crossroads of the Continents: Cultures of Siberia and Alaska marked a significant milestone in the history of collaboration between the U.S. and the then-Soviet Union. A decade of scientific exchanges culminated in an exhibit jointly prepared by the Smithsonian and the Soviet Academy of Sciences. The exhibition, opening to the public at the Smithsonian's National Museum of Natural History in 1988, showcased the

cultures of Alaska and Siberia from the end of the Ice Age to modern times. After a year in D.C., it traveled throughout North America until 1993. Although plans were made for the exhibit to go to the Soviet Union, the political collapse and subsequent turbulence in Russia made this impossible.

The Russian invasion of Ukraine in 2022 ushered in a new chapter in global history and scholarly collaborations. Many Russian academics and politically aware individuals were forced to leave the country, facing prosecution. In this new era, despite politics, the continuation of scientific exchange and the dissemination of our work to a broader audience are essential for maintaining relationships between people and fostering free thinking in oppressive environments. Therefore, the Arctic Studies Center initiated a new project called "Crossroads 2" to revive the goals of the original "Crossroads." The new project utilizes the power of the Internet and social media to present cutting-edge anthropological research to a Russian audience and facilitate scholarly exchanges between both sides.

"Crossroads 2" consists of a series of webinars published on YouTube, wherein one American and one Russian scholar discuss their research. To date, we have published six videos featuring **Bill Fitzhugh, Bill Shindler and Ivan Semyan, James Dixon and Sergei Vasiliev, Fernando Villanea and Arina Khatsenovich, Robert Drennan and Denis Sharapov, and William Taylor**. English speakers are dubbed in Russian. The topics covered range from the history of Arctic research to experimental archaeology, and from Neanderthal and Denisovan DNA to the early archaeology of North America.

The project is co-hosted by our friends at "The Past" YouTube channel, which has been featuring Russian historians and archaeologists for several years, interviewing them about their work. The channel was created by **Mikhail Rodin**, a Russian journalist and historian who, like many others, was forced to leave the country. "Crossroads 2" has been warmly received by the Russian audience, with some videos garnering over 50K views on various platforms and with over 200K total views. We are determined to continue this endeavor and feature even more exciting research in our future programs.



INTERNS AND POST-DOCS

SUMMER INTERNSHIPS AT THE ASC

By *Stephen Loring*

As we get old(er), and the distance back to the paradigms and influences of our “youth” in graduate school increase, we come to rely in part on the infectious enthusiasm of students, when the opportunity affords, to facilitate and stimulate our research and even challenge our assumptions with their relentless “whys” and “hows”. Such was the case last summer with a pair of interns, **Lola Page** (Hunter College) who worked with **Igor Krupnik** and **Adele Roulston** (Washington and Lee) who worked with **Stephen Loring** on a variety of projects.

INTERNSHIP WITH DR. LORING

By *Adele Roulston*

What do seal teeth, musk-ox, and ceramics have in common? All three and more were integral to my summer internship with the ASC’s Dr. **Stephen Loring**. My first assignment began with an ethnography which read more like a novel. Dr. **David E. Wheeler**’s manuscript includes stories about various sled dogs, near-death experiences, and successful hunting expeditions. During his two-year quest for musk-ox, Wheeler kept a detailed journal of his experience living among the Tł̥ch̥. To help Dr. Loring prepare the manuscript for publication, I began compiling an index of all the locations, people, and topics mentioned. For each entry, I added additional background information to be used for adding footnotes to the final publication. Along with the manuscript, I was given access to a collection of Wheeler’s photographs and correspondences. After my inventory, I began determining where in the manuscript each photo would make the most sense. My favorite part was exploring maps of Wheeler’s trip. Creating a supplemental map of his journey was much more difficult than I anticipated. Very few of the placenames written by Wheeler are listed on modern maps. Wheeler wrote most of the locations by approximating a phonetic spelling of the Tł̥ch̥ terms. His guess work in combination with the non-standardized spelling of the early 1900s, less-than-accurate depictions in hand-drawn maps, and changes in location names since the time of writing required a lot of detective work. If anyone is looking for a travel agent to the very specific

region of the Northwest Territories surrounding Great Slave Lake, I know more about the geography than I imagined possible.

My summer in the Arctic Studies Center did not end with the completion of my first project. I began a series of archaeological tasks, learning various skills of cataloging and identifying artifacts. I worked with artifacts from the Aleutian Islands and Labrador. Dr. Loring taught me how to categorize various stone and bone tools, ceramic sherds, wooden fragments, and faunal remains. The miniscule bone needles and carved bone fishhooks were among my favorite artifacts because of their impressively small detailing and preservation. Some bonus education occurred when Dr. **Torben Rick** taught me to identify marine animal teeth, pointing out various clues such as the tricuspid shape of seal molars.



Lola Page (right), Adele Roulston, and Igor Krupnik at the Museum Support Center examine the Winchester rifle once owned by Sitting Bull. Photo by Stephen Loring.

Outside of my ongoing projects, there were a handful of other stand-out experiences. Multiple visits to the Museum Support Center with Dr. Loring and Dr. Igor Krupnik gave me the chance to examine beautiful and intricate cultural heritage objects. Although we kept our visits to manageable hours, I could easily lose days enjoying the immense collections at MSC! We looked at objects

from the Tł̥ch̥ in conjunction with my manuscript project, such as hunting bags, decorated clothing, and snowshoes. In addition to full sized snowshoes, we saw a pair of tiny shoes made for a toddler! With time to spare before the next bus, Dr. Loring showed me a few other items from the collection. We looked at a number of Alaskan parkas made from various animals such as caribou and ground squirrels. My favorite item is a raincoat made from seal intestines that are stitched together so tightly the coat becomes waterproof!

It is bittersweet to write this on my last day at the Natural History Museum. Looking back over the summer I am proud of all that I’ve learned and accomplished and will miss the chance to come into such a wonderful office every day. I am eternally grateful to the ASC team, especially to Dr. Loring for taking me on and finding me assignments to work on! As I head into my senior year as an anthropology major at Washington and Lee University, this summer has been invaluable in preparation for my anticipated career in museum anthropology.

INTERNSHIP WITH DR. KRUPNIK

By Lola Page

My connection to the Arctic Studies Center began in June 2023 by almost complete chance. I had just finished my first year at the New School in NYC coupled with an internship at the ‘Arms and Armor’ Department at the Met, and I knew, with confidence, I wanted to be involved in museum work. I was eager to try nearly anything, and I figured my best chance was with the familiar interests I had never gotten to engage in a legitimate way. Upon an email hoping for a chance to do just that, I began my internship under **Igor Krupnik** at the ASC in mid-summer.

The project I undertook was organizing the *Handbook of North American Indians*, Volume 1 archive. Such an archive contained multitudes of correspondence, drafts, and original materials for creating the 950-page book. Prior to my arrival, the task to organize the contents of this enormous file cabinet and several excess bins had been partially completed pre-pandemic. I had little to no knowledge of anthropology, and more notably, none in archiving a project as extensive as this, but I was eager to learn. The purpose of the Handbook was to create a guide to different Indigenous cultures of North America, and to document these cultures. It was a perfect project, as it helped me achieve two things at once: learn about Indigenous people through the actual contents of the book and archive, but also learn how to organize such a large project.

As Igor was the editor, much of these dual learning opportunities grew not only from hands-on experience, but also through long talks with him. Discussing the many questions that I had for the final published product helped paint a fuller picture, not only about the actual practice of anthropology, but also about something as simple as what were the right questions to ask. As our joint project went on, I became more confident in navigating this new knowledge and sharing it with others.

The *Handbook* project spanned decades, while my internship with Igor was only a few weeks. There was a balance between the actual contents of each chapter draft, but also the stories of the many individuals who contributed to the Handbook from the 1970s onward. As I made it to the last few boxes, it became apparent that Igor and I also played a role in this story. It seems obvious in hindsight, but there is a way of being overwhelmed by the magnitude of such a venture and surrounding yourself with so much information at once. I spent hours of my internship talking with Igor about museum collections and anthropology. It was an incredible experience to be a part of such a project

involving so many people over the course of a decade. My own copy of *Handbook* Volume 1, and also Volume 4, bought at a secondhand store, now sit proudly on my own bookshelf as a testament to what I learned.

VERA SOLOVYEVA—SAKHA POST-DOCTORAL FELLOW

By Igor Krupnik

The ASC is pleased to welcome **Vera Solovyeva** (Ph.D. 2021, Environmental Science and Policy, George Mason University), as a postdoctoral fellow for 2024–2025. Last year, Vera received a prestigious two-year SI ‘Resilience and Sustainability’ award and is working with us on her project, “*Tracing Climate Change through Community Knowledge: Sustainable Indigenous*

Ethnobotany in Alaska and Siberia.” Vera was born in the city of Yakutsk in Siberia, now the capital of the Sakha Republic/Yakutia, Russia; she will be the first Siberian Indigenous (Sakha) scholar formally affiliated with the ASC. She grew up in the rural area of Yakutia and is intimately familiar with the ways Arctic Indigenous people use the resources of their land and waters and track the impact of climate change via numerous local indicators. Vera graduated from the Yakut Federal University in Yakutsk with a joint MS degree in Biology, Botany, and Chemistry and worked in the 1990s as a researcher at the Institute of Biology in Yakutsk. She also holds a Ph.D. in Biology from the Russian Institute of Animal Genetics and Breeding in St. Petersburg. During her years of research in the North, she travelled extensively across the Russian Arctic, also visited Nome, Alaska, and has strong connections with the American Museum of Natural History in New York that houses Sakha ethnographic collections from the Jesup North Pacific Expedition of 1897–1902. We published a summary of Vera’s dissertational research in an earlier issue of the *ASC NSL* (2021, 29:43–44). **Igor Krupnik** will serve as Vera’s prime Smithsonian advisor, with Dr. **Kevin Jernigan**, an ethnobotanist from the University of Alaska Fairbanks as co-advisor, and **Darlene Orr** from Sitka, Alaska, former ASC Indigenous collaborator on the *Crossroads* Alaska exhibit project.



BOOK REVIEWS

VISCERAL: VERITY, LEGACY, IDENTITY. ALASKA NATIVE GUT KNOWLEDGE AND PERSEVERANCE, by Sonya Kelliher-Combs and Ellen Carrlee: Alaska State Museum: Juneau 2023

Review by Igor Krupnik

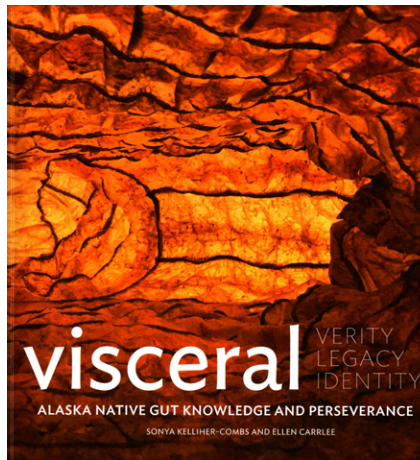
This slim book of 92 pages, with its intriguing title (“Visceral”) and a captivating red-orange-brownish cover, is a catalog of the exhibit that was put on display at the Alaska State Museum (ASM) in Juneau, AK from May 5, to October 9, 2023.

The exhibit combined mixed-media installations with an impressive selection of objects from the ASM collections, to which the catalog adds extensive text, object and display photographs, maps, and the list of exhibited specimens (about 120 altogether). As seen from the exhibit title, *Visceral*, the show tells the story of objects made of animal guts, or gut skin cover (membrane); but its full message goes far beyond the narrative of using animal organs and intestines in Alaskan Indigenous cultures. It is also about knowledge, perseverance of tradition, skills, and identity, and about keeping memory alive.

The catalog and the exhibit were co-authored by two partners—**Sonya Kelliher-Combs**, a Native Alaskan artist born in Bethel, who now lives in Anchorage, and **Ellen Carrlee**, ASM conservator born in Sheboygan, WI, now residing in Juneau. Sonya Kelliher-Combs is a renowned artist of mixed descent: Iñuapiq from Utqiagviq and Athabascan from the interior community of Nulato in the Yukon River valley. She has been a close partner to our ASC staff in the Anchorage Office and was named in several earlier *Newsletters* as a consultant, event participant, project partner, and just a close friend. The two collaborating experts—a Native artist and a museum conservator—produced a show and a catalog filled with power, knowledge, and great artistic taste.

The masterpiece of the catalog is its section titled *Identity: Innovation* (pp.48–65) that describes, in great detail, major types of gut-skin raincoats and parka covers used by different communities across Alaska—from the well-known walrus or bearded seal gutskin pieces made by the Iñupiat on the North Slope, around Bering Strait, the Yupik on St. Lawrence Island, the Yup’ik in the Yukon-Kuskokwim region, and by the Cup’ig on Nunivak Island, to regional varieties of the

Unangax (primarily of Steller lion or northern fur seal), Alutiq (primarily of bear), and the Athabascan (often of bear, also of beluga whale). Each type of garment is described with the details of its design and making, a Native name in the respective language, commonly used materials, and other features that allow one to distinguish it from other varieties. To those who deal with such objects in museum collections, heritage programs, student classes, and craft shows it offers the first-ever guide to the richness of Indigenous gut-skin clothing.



Another invaluable section, *Identity: Knowledge*, covers the preparation of animal inner organs serving as material for clothing, family belongings, art pieces, and, simply, food. It requires a lot of ingenuity, skills, and special equipment to transform thin skin of freshly harvested game into a durable, waterproof, and worn-resilient material that is a characteristic feature of many Native Alaskan cultural traditions. It also takes a lot of time and experience to transform the gut and organ membranes of

walrus, seals, bear, caribou, whale, and other species into objects as diverse, as raincoats, drums, boot pieces, bags, and decorative materials. Though the elements of the transformation—cleaning, removing the outer and inner layers, soaking, inflating, drying, whitening (when needed), cutting, rolling, and storing are generally known—this book offers the first illustrated guidance on all steps in this process.

The exhibit and catalog also carry a particular message—the memory of abuse that many Native Alaskans were subjected to in boarding schools, missions, and in their home communities by (primarily) Catholic clergy, lay employees, and Church volunteers across the State of Alaska. On pages 5-6, readers may find the list of 35 Native Alaskan communities and of dozens of people accused of (often repeated) sexual abuse from the 1920s to the 1980s, but primarily in the 1950s and 1960s, compiled by reporters from the *Anchorage Daily News*. To that harrowing legacy, Sonya Kelliher-Combs dedicated a special installation titled “Credible” that combined maps featuring the communities, quilts of acrylic polymer and seal intestine, and dozens of small bags made of cotton fabric, nylon thread, walrus stomach, reindeer and sheep rawhide, acrylic polymer, and other materials that were pinned to the wall on exhibit display.

This powerful book is a must-read for Arctic curators and museum conservators, but also for everyone interested in the legacy and traditions of Alaskan Indigenous people.

MATERIAL'NAIA I DUKHOVNAIA KUL'TURA NARODOV YAKUTII V MUZEIAKH MIRA/ MATERIAL AND SPIRITUAL CULTURE OF THE PEOPLES OF YAKUTIA IN WORLD MUSEUMS (17TH—EARLY 20TH CENTURY). CATALOGUE. VOL.2, BOOK 2, MUSEUMS OF GERMANY, BY A.N. ZHIRKOV, ED., A.L. GABYSHEVA, YU. V. KRAVTSOVA, G.G. NEUSTROEVA, AND V.V. TIMOFE'EVA, Ayar: Yakutsk, 2023

Review by Igor Krupnik

In April 2023, a team of museum specialists from the Republic of Sakha/ Yakutia, a huge and resource-rich region in the Siberian Arctic, unveiled a new catalog volume in the ongoing series dedicated to historical ethnographic collections from the territory of Sakha/ Yakutia in world museums. This venture began in 2006 by Sakha museum professionals, with funding from the Russian section of the ICOM (International Council of Museums/ICOM Russian Federation) and the Sakha regional government, and with the endorsement by the UN Permanent Forum on Indigenous Issues. The original plan was to cover all ethnographic collections from the Republic of Sakha/ Yakutia preserved in world museums in three regional clusters—“Museums of North America,” “Museums of Europe,” and “Museums of Russia.” Each would be featured in one or several massive illustrated catalogs with a thorough description of individual objects, in Russian and in English. The project clearly followed the footsteps of a similar venture from the 1990s, *The Overseas Ainu Collections*, by a Japanese team directed by **Yoshinobu Kotani** that covered over 13,500 Ainu ethnographic objects stored in North American, European, and Russian museums.

The latest volume of 784 pages, prepared by a team led by Dr. **Asia L. Gabysheva** under the overall project leadership of Dr. **Alexander Zhirkov**, covers ethnographic collections in five museums in

Germany—Museum at the Rothenbaum “Cultures and Arts of the World” in Hamburg, Linden-Museum in Stuttgart/State Museum of Ethnology, Rautenstrauch-Joest Museum “Cultures of the World” in Cologne, the Overseas Museum in Bremen, and the Museum of Five Continents in Munich. Collectively, these museums host over 2,000 objects belonging to several Indigenous nations of Sakha/ Yakutia—the Sakha/ Yakut, Dolgan, Evenk, Even, Yukaghir, and the Chukchi—of which 1491 pieces are featured in the catalog with color images. The 2023 volume listed as “Book 2” is a sequel to “Book 1” published in 2018 that includes 1309 artefacts from four of the largest ethnographic museums in Germany—Berlin Ethnological Museum, the State Ethnographic Collections of Saxony (SES)/Ethnographical Museum Grassi in Leipzig and Dresden, Museum of World Cultures in Frankfurt am Main, and the Ethnological

Museum of the University of Göttingen in Göttingen. These two books featuring German museums follow in the footsteps of Vol. 1 (2017, by **Zinaida Ivanova-Unarova**) dedicated to collections of two American museums: the AMNH in New York with its monumental holding of ca. 1550 objects from the Jesup North Pacific Expedition of 1897–1902, and a much smaller stock of 45 Sakha specimens at

the Smithsonian NMNH in Washington. Altogether, the three volumes cover almost 4,400 Indigenous ethnographic objects from Arctic Siberia.

All three published volumes, including the current one, are organized along the same template. They are framed as bilingual books (Russian and English) in two columns, structured by the individual museums. Two books of Volume 2 include detailed general overviews of collecting Siberian/ Sakha objects by German museums and collectors; Vol.2 (2) also features short biographies of the most important collectors and donors (by A. Gabysheva). Each museum section begins with an opening narrative on the history of its respective Siberian/ North Asian collections written by a local curator. The main texts covering individual museums are structured along the Indigenous groups of the Sakha/ Yakutia—the Sakha (Yakut), Dolgan, Evenk, Even, Yukaghir, and the Chukchi. Within each ethnic sub-chapter, objects are organized along major cultural categories (clothing, jewelry, household items including hunting and fishing equipment, art objects,



toys and games, shaman and cult objects, musical instruments, and the likes). Individual object entries, all bilingual, offer extensive description by Sakha museum specialists and Indigenous knowledge holders, plus Indigenous name/s for each object, and whatever provenience data are available at the respective museum. The format produces an unparalleled trove of collection information for museum specialists, Indigenous users, researchers, collectors, artists and crafts people, and the general audience interested in Siberian Indigenous cultures.

Unfortunately, these beautifully printed books with accompanying CD-ROM(s) are now victims of their technology. Due to the freeze in academic and cultural cooperation with Russia following its war against Ukraine, hardly any copies of vol. 2(2) reached Western museums and libraries. Nor is there a way to access the books online or upload a PDF at present. Evidently, no steps were taken to post the objects on a unified 'cloud portal,' with the description, provenience data, and color images prepared for the printed catalogs. True, the objects remain under copyright of the respective host institutions, but none of these museums developed a user-friendly online search for its Siberian collections either. It is hard to predict when the next volume/s may be produced under the current political situation, and a task to digitally "combine" the many thousand ethnographic objects heroically retrieved and researched by our Sakha colleagues in museums in Europe and North America remains a distant prospect.

DEER STONES, TATTOOS, AND WARRIOR WOMEN: TRANSFORMING ARCHAEOLOGICAL FACT INTO FICTION

By Judith Lindbergh

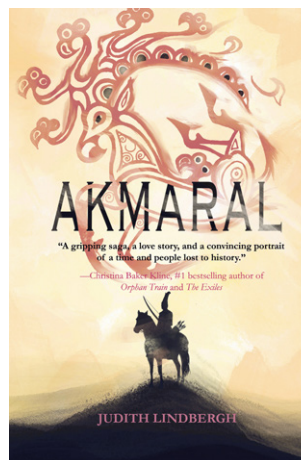
As a novelist specializing in ancient historical fiction, archaeology is a primary source of inspiration. Through my writing, I bring countless fragments of material culture, midden debris, and human remains back to life, shaping them into the cultures and lives of my characters. My new novel, *Akmaral* (Regal House, May 2024), began with the storied Siberian Ice Maiden discovered in 1993 by **Natalia Polosmak**. Please don't judge me because I came to her in the most pedestrian of ways, via a documentary on PBS! Often my stories are sparked by a news article, documentary, or exhibition that briefly opens a window into the past that begs me to find out more.

The Siberian Ice Maiden led me to the late **Jeannine Davis-Kimball**, Ph.D., whose book,

Warrior Women, shifted my focus from the Ice Maiden to the Issyk "Golden Man" whom, she speculated, might have been a woman. Davis-Kimball connected the ancient Greek legends of Amazon warriors with the women who fought and died of battle wounds and were buried with their weaponry at their sides in kurgan mounds across Central Asia. Suddenly, the breathtaking expanse of the steppes became rich with possibilities, and my titular character, Akmaral, became a young warrior training to protect her people.

While I am no stranger to JSTOR or dig reports, to create authentic fiction I knew I had to dig deeper. To research my first novel, *The Thrall's Tale* (Viking, 2006) about women in Viking Age Greenland, I sailed from Iceland to Greenland on an ice-class ship. It was the closest that I could come to experiencing my characters' journey. Once in Greenland, the haunted landscapes, the icebergs groaning and clacking against rocky shores, and the chill seat I took on the stony edge of **Erik the Red's** homestead, Brattahlid, filled me with sensory experiences that helped me bring the lives of the first Norse settlers to the page.

Unfortunately, a decade later, I could not travel to the Ukok Plateau in the heart of the Altai Mountains. Nor could I visit The Hermitage to peruse its extensive Scythian and Altai collections. My travels were curtailed by the responsibility of raising two small children, so I was forced to find new ways to explore. This time, I rode the Mongolian steppes and stood atop the Altai peaks through the vivid reality of Google Earth. I collected catalogues from every exhibition I could find, just to gaze at the full-color photographs of objects made of gold, iron, wood, and bronze. I thrilled at the 3D gallery tours of The Hermitage's collection of Scythian and Altai Bronze and Iron Age materials. As I paused my mouse to ponder, a cluster of iron arrowheads became a clutch retrieved from a battle between nomad bands. A bronze mirror became a ritual object that connected Akmaral to her shamanic ancestors.



But it isn't enough to simply study and gaze. To authentically reconstruct Akmaral's everyday life, I turned to the nomads of Mongolia and Kazakhstan. I borrowed traditional wrestling and horse racing from Naadam, the annual summer festival whose roots go back to the Mongol Empire and likely beyond. Central Asian folktales introduced me to the game of kesh kumay that horseback herding people used for courtship. I learned, at least in theory, how to build a ger, dry cheese on its roof, ferment mare's milk into *koumiss*, and fashion bows and arrows. Then I put this knowledge into practice. With my children, I crafted rough bows out of freshly cut boughs, fletching them with goose feathers we found on hikes in the woods. I pounded lint from our clothes dryer into fragile felt. And I practiced archery in my backyard—until one bad shot pierced a hole through my neighbor's PVC fence!—so that I could experience, in my own inexperienced way, the skills my woman warrior needed simply to survive.

Beyond materials, traditions, or even survival practices, I also had to understand what Akmaral believed. But how do you conjure social values without documentary evidence? The Scythians left no written record, and the words of Herodotus and other ancient Greeks can only be taken as hearsay, by some reports. To devise an authentic origin story for Akmaral and her people, I looked to both the west and east, drawing from **Herodotus'** story of the Amazons' post-Trojan War escape to justify her clan's acceptance of her union with a Scythian captive, while connecting Akmaral to her Eastern and Siberian roots through the deer tattoo that graces her shoulder, as it does the Siberian Ice Maiden's.

The deer stones of Mongolia became key to blending the different aspects of Akmaral's faith, merging east and west in the powerful imagery of the flying deer. **Esther Jacobson's** invaluable *The Deer Goddess of Ancient Siberia* became the source of some of Akmaral's most important beliefs and rituals, with practices borrowed from reindeer herding nomads like the Evenk, Ket, Nenets, and Dolgan.

Even when a novel is finished, I never stop researching. Just as Akmaral was heading to typesetting, I came across the Smithsonian Magazine article about Arctic Studies Center Director **William Fitzhugh's** new research on deer stones. I immediately ordered a copy of his *Deer Stone Diary* and he kindly followed up with the full volume of **Jamsranjav Bayarsaikhan's** extensive research. As I scanned new evidence that the deer stones originated in the east and were carried west to the Pontic steppes, a wave of panic struck me that my fictional construction might be wrong. But then I remembered DNA research that evidenced European

and mixed ancestry in several mummies found in the Altai. This reinforced the connective leap I had taken to create Akmaral's combined Scytho-Siberian roots. It also reminded me of something Jeannine Davis-Kimball had mentioned in a 2007 email answering some of my earliest research questions: that the tribes of the ancient steppes had traveled freely both west and east like the waves of a shallow sea.

I hope you will join me for Akmaral's journey when my novel is published in May 2024. Akmaral is available at all major online book retailers.

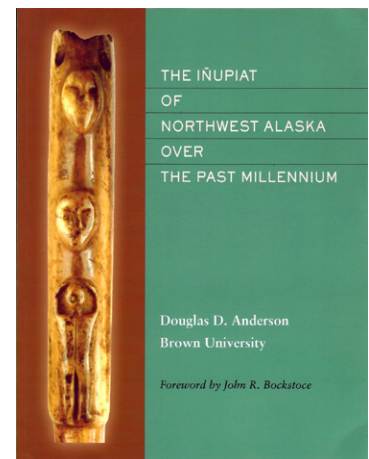
Editor's note: Judith Lindbergh's debut novel, *The Thrall's Tale*, about women in the first Viking Age settlement in Greenland, was an IndieBound Pick, a Borders Original Voices Selection and praised by Pulitzer Prize winners Geraldine Brooks and **Robert Olen Butler**. She is the Founder/Director of [The Writers Circle](#), a creative writing center based in New Jersey.

THE IÑUPIAT OF NORTHWEST ALASKA OVER THE PAST MILLENNIUM, BY DOUGLAS ANDERSON. Borgo Publishing, 2023

Review by William Fitzhugh

Douglas Anderson has published a major monograph covering a lifetime of research on the Iñupiat cultures of Northwest Alaska. Doug once counselled me to be cautious accepting offers to give symposium papers because they sap your time and energy, keeping you from making real contributions—those monographs that turn fields around and last for centuries. Anderson has kept his counsel and produced another monograph that would have made his mentor **James Louis Giddings, Jr.** proud many times over.

The Iñupiat of Northwest Alaska is a large format 264-page book that combines detailed documentation of five periods of Iñupiat development beginning with Western Alaska Thule and ending in 1930, when traditional culture, subsistence, and settlement patterns had become substantially transformed by Euroamerican contact. It begins with a dedication to **Froelich Rainey, Helge Larsen**, and Giddings, signaling Anderson's schooling



by three towering pioneers of ‘Eskimo’ archaeology that laid the foundation for Anderson’s research. Despite debunked early theories of Eskimo emergence from the forests west of Hudson Bay, Giddings showed that ‘forest’ Eskimos had a long history in Kobuk River Iñupiat woodland culture and were just as ‘Eskimo’ as its better-known coastal cousins. Two introductory chapters describe the regional organization, adaptations, and history of the Iñupiat people and how anthropology, archaeology, oral history, and folklore combine to produce a comprehensive—if still incomplete—understanding of their 1000-year history.

The book’s voluminous data are organized in a complex but ingenious way, presented in four information categories: settlements, artifacts, statistical studies, and fauna. Each of these categories are then described for each of five chronological periods, and within these periods by three geographical regions: coast, lower river, and upper river sites. Excellent maps, site and house plans, artifact drawings, and photographs accompany each category. Chapter 6 presents composite illustrations of artifact types by chronological period, showing stylistic, technological, and regional patterns. Many of the artifact plates are in color, which is also used to enhance maps and diagrams. Tables present tabulated data on artifact types, raw materials, fauna, and other data by region, period, and activity type, and house floor plans illustrate the spatial patterns of artifact, material, and faunal finds. A final Chapter 7 summarizes “what we think we have learned about the resilient and resourceful Iñupiat culture”—which is A LOT!

Anderson’s opus is a monument to a career dedicated to documenting the peoples and culture of a highly complex region, from its river headwaters to the coast. Not only has Anderson fulfilled the pledge of ‘complete publication’ of one’s lifework rarely accomplished by archaeologists; he has also trained a generation of students in solid science that places indigenous peoples and their well-being in the center of one’s professional responsibilities. One of the many interesting features of the monograph is the chatty language and informal style of the subheads (“How the Iñupiat...Organized Themselves Geographically”, “Ethnology and Archaeology Tie the Knot in Northwest Alaska” etc.), perhaps a contribution of the fine editing and production work of Borgo Publications.

One of the themes central to Anderson’s work and this monograph is attention to social mechanisms within Iñupiat society and how its subsistence and political systems interacted with the environment and with Athabascan neighbors with whom they traded, competed, or fought over for hunting, fishing, and extractive materials, and how relations were influenced

by caribou crashes or abundance. These relations are not easily perceived in the type of household settlement archaeology that Anderson’s research featured. Given the imbalance of material recovery for these groups, archaeological evidence of shifting boundaries will be difficult to obtain. Another major theme is simply the sustained 1000-year history of Iñupiat culture and population in a ‘cat-bird’ location between Eurasia and America. One thing we can be sure of: Anderson, assisted by decades of students, colleagues, and indigenous partner, has opened a huge window into the life, culture, and history of the Iñupiat people and given us a structure for future investigations.

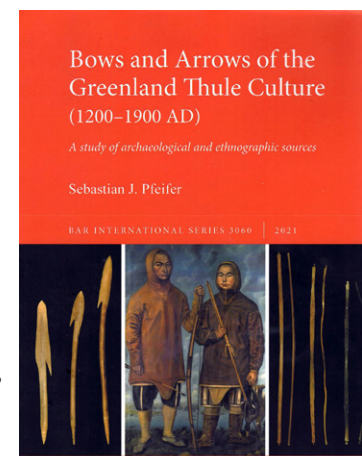
REVIEW: BOWS AND ARROWS OF THE GREENLAND THULE CULTURE (1200–1900 AD). A STUDY OF ARCHAEOLOGICAL AND ETHNOGRAPHIC SOURCES, BY SEBASTIAN PFEIFER. BAR Publishing, 2021, 118 p.

Review by Coline Lemaitre

The hunting weapons of Arctic cultures have been extensively documented in more than 100 years of ethnographic and archaeological research, and the weapons of Greenland’s Thule culture are no exception. However, until now, no study had synthesized knowledge of Thule bows and arrows from a single geographic region, combining ethnographic, iconographic, and archaeological materials. **Sebastian Pfeifer**, from Friedrich-Schiller University Jena, achieves this with great clarity.

The book is structured in three sections in an approach that creates an easy-to-read, beautifully illustrated book. In the first part, Pfeifer considers the mechanics of the bow-and-arrow system based on traditional archery studies of **J. Hamm**, by **C. A. Bergman et al.**, **B.W. Kooi**, and others. The main components of a bow and arrow are summarized and illustrated with diagrams and photographs, and the introduction to Arctic bow and arrow terminology (i.e. “cable-backing”, “triple-curved profile”, etc.) gives the reader all the keys to understand the rest of the book.

In the next section, the collections from the National Museum of Denmark are analyzed in terms of technical



and material components (design and cross-section of bows and arrows, raw materials, assembly techniques, mechanical properties), and cultural geography (Polar Greenland, Northwest Greenland, Central West Greenland, and East Greenland). The large dimension of this analysis would give readers some head spins were the text not supported by thematic maps showing each object's distribution across Greenland with their technical and material characteristics identified. The final section is devoted to the bow and arrow technology's function and highlights its social and environmental implications. This contrasts with the purely technical analysis in the two previous parts and shows the role this innovation played in the daily lives of Greenland's Thule people.

Pfeifer follows a "cataloguing" and diagnosing principle in describing bow and arrow technology by providing high-quality visual, metric, and technical documentation. The study includes the most recent archaeological data from North America. In addition to analytical rigor, and scalar analysis (materials, bow mechanics, assembly techniques, and uses), the approach—studying both the bow and the arrow as a system—provides a model for studying other technological systems, for instance, harpoons.

The author's "spatiotemporal and technological" method highlights the heterogeneity and complexity of the weapon. One might only regret the lack of more discussion of analytical methods. The author acknowledges that the study raises more questions about a technology that is profoundly empirical in its manufacture and use that only experimentation could answer—something that so far has been missing in Arctic archery. Overall, the author provides new insight into Greenlandic bow and arrow technology that should be of interest to a wide range of readers, from the curious archer to the researcher specializing in Arctic cultures.

TENGAUTULI ATKUK: THE FLYING PARKA: THE MEANING AND MAKING OF PARKAS IN SOUTHWEST ALASKA, BY ANN FIENUP-RIORDAN, ALICE REARDEN, AND MARIE MEADE. University of Washington Press, 2023.

Review by Bernadette Driscoll Engelstad

There is too much to praise in this deeply informative, richly illustrated study of Yup'ik parka design by **Ann Fienup-Riordan, Alice Rearden** and **Marie Meade** to be covered in a short review. Flowing from the knowledge and expertise of Yup'ik elders, *Tengautuli Atkuk: The Flying Parka* provides unsurpassed insights into the design and production of the Yup'ik parka—

particularly the woman's parka—and its central role within Yup'ik oral tradition, cultural history and lived experience.

Published by the University of Washington Press, this work draws on over twenty years of in-depth discussions with Yup'ik elders. Acknowledging more than 60 tradition-bearers, cited by the writers as the true authors of the publication, each contributor is identified by Yup'ik and English names, birth year, and village of origin and residence. Although sadly, many of these elders have passed, their memories, spanning well over a century of personal experience, have been documented in thousands of transcribed pages by the authors over the years.

Emerging from a series of parka-focused workshops held in Bethel and Anchorage supported by the Calista Elders Council (CEC, now Calista Education and Culture), the research project culminated in a study of Yup'ik historical clothing at the Smithsonian's National Museum of Natural History (NMNH) and National Museum of the American Indian (NMAI) by elders **Albertina Dull, Elsie Tommy** and **Martina John** as well as **Mark John**, Ann Fienup-Riordan, **Ruth Jimmie** and media intern **Abby Moses** with funding assistance from CEC and the National Science Foundation.

A multi-generational achievement, the text interweaves Yup'ik oral history with women's expert knowledge of material resources and exceptional skill as creative designers and seamstresses. Over the course of several chapters, the authors detail the production of fur, bird-skin, seal-gut and fish-skin parkas with meaningful insights into the repository of family designs that create and strengthen social relationships over time and space.



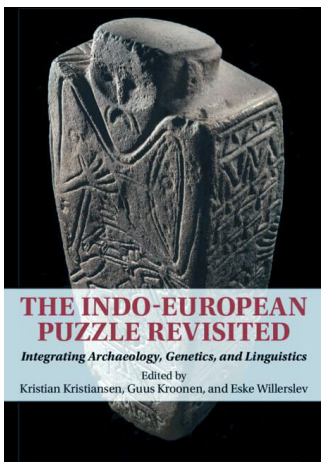
Elders Martina, Albertina, and Elsi examining the fur strip bordering the neck opening. E76708-0, Department of Anthropology, Smithsonian institution. Photo by Ann Fienup-Riordan

A treasury of photographs taken in the 1930s by Dr. **Leuman M. Waugh** (NMAI) as well as prints of color slides from the 1960s in the collection of Mabel and Harley McKeague at the University of Delaware, not to mention contemporary images by Ann Fienup-Riordan stretching over more than twenty years, complement and enliven the text. Most notably, the publication includes the bilingual transcription of several legends (qulirat) dealing with the Yup'ik parka as subject—including *Tengautuli atkuk / The Flying Parka* related by **Paul John**—as well as diagrams of parka styles by **Wassilie Moses** and **Deborah Reade** with design elements identified in Yup'ik and English, and maps identifying locations mentioned in the text. The book design by **Katrina Noble** stands out for its exquisite attention to detail, graphic artistry, and impressive use of stylistic elements.

Finally, the workshop methodology used in shaping the parka project provides a critical model for recording community knowledge across a geographical and temporal expanse. The myriad contributions of elders, seamstresses, linguists, photographers, illustrators, and designers have not only enriched the collaborative work of the authors but produced a foundational text that will serve as a critical guide and vital source of inspiration for future generations.

THE INDO-EUROPEAN PUZZLE REVISITED: INTEGRATING ARCHAEOLOGY, GENETICS, AND LINGUISTICS, EDITED BY KRISTIAN KRISTIANSEN, GUUS KROONEN, AND ESKE WILLERSLEV. Cambridge University Press, 2023.

Reviewed by Igor Chechushkov



The Indo-European Puzzle Revisited is a comprehensive overview of the current state of early Indo-European studies, covering topics in archaeology, linguistics, and genetics. The book comprises a collection of papers originally presented at the conference titled “*When Archaeology Meets Linguistics and Genetics*,” hosted by Gothenburg University in 2018, and is organized

in five parts. Part I delves into Early Indo-Europeans from both archaeological and linguistic perspectives, offering up-to-date information on early steppe pastoralists. Part II explores the dispersal of Indo-

Europeans, encompassing detailed studies of mining and metallurgy-related terminology in the Indo-European language, thus bridging archaeology with linguistics. Part III focuses on the Bell Beaker horizon of the Atlantic Fringe, addressing topics such as long-distance exchange in the Bronze Age and ancient human DNA. Part IV explores the chariot and wool horizons of the Bronze Age, examining topics related to the absolute chronology of the chariot complex and wool terminology. Finally, Part V examines previously understudied topics concerning kinship systems and prehistoric slavery. The book not only advances research in Indo-European studies but also contributes to our understanding of the prehistory of the Eurasian continent by opening new avenues of research. The Society for American Archaeology (SAA) recognized this contribution as the most important scholarly research in archaeology for the year 2023.

INDIGENOUS ARCTIC FISH SKIN HERITAGE, A Ph.D. THESIS BY ELISA PALOMINO

By Elisa Palomino

My recently completed Ph.D. represents an interdisciplinary exploration intersecting fashion, sustainability, Arctic fieldwork, anthropology, and museum collections. The research builds on the design practices I instigated during eight years as head of John Galliano's design studio, developing fish skin garments for his signature collection. The highlight of my PhD journey was a Fulbright Fellowship at the Arctic Studies Center (ASC) in Washington DC, and in Alaska, where I collaborated with Indigenous communities and developed global-scale engagements, spanning three continents, nine countries, and forty international museums. The thesis includes literature review, ethnographic research, artifact analysis, interviews with fish skin professionals and museum curators, collaborative workshops, and educational programmes with students in Arctic and Subarctic environments. The overarching theme is the examination of how fish skin connects populations across the Arctic. This practice aligns with principles of respecting the relationship between all things on Earth, countering contemporary practices of over-consumption. This research has been instrumental in establishing positive relationships linking historic Indigenous collections with contemporary communities and addresses critical issues in contemporary sustainable fashion practices, presenting the transformation of seafood waste into leather. Environmental considerations include overproduction, fish rearing conditions, chemical pollutants in tanning and dyeing, water and energy

use, and responsible material disposal. Rooted in the resourcefulness of Arctic cultures, the work advocates for the rights of Indigenous Peoples, animals, and the natural environment, offering a less consumerist form of fashion. The interdisciplinary approach identifies sustainable alternatives to conventional fish leather production processes to minimize environmental impact.

I owe special thanks to **Bill Fitzhugh** and the ASC team: **Stephen Loring**, **John Cloud**, **Igor Krupnik**, **Bernardette Driscoll Engelstad**, **Nancy Shorey**, **Aron Crowell** and **Dawn Biddison**. By hosting me as a Fulbright scholar, Fitzhugh granted me access to the world's most extensive collection of Alaskan fish skin artefacts and introduced me to his dedicated team in Washington D.C. In Anchorage, Aron Crowell and Dawn Biddison introduced me to museums across Alaska and to Alaska Native fish skin artists. Fitzhugh's publications and exhibitions have been an inspiration. Stephen Loring shared his knowledge of fish skin collections, while his passion for contemporary fashion helped me to link the study of Arctic traditional materials with contemporary fashion. John Cloud's knowledge of Arctic cartography contributed extensively from the areas of Arctic fish skin tradition.

The dissertation is available [online](#).



ARROWS: THE FLIGHT OF THE HANDBOOK OF NORTH AMERICAN INDIANS

Series review by John Cloud

Publication of Volume 1, *Introduction, the opening volume of the Handbook of North American Indians* (NMAI) series started in the 1970s, deserves a comment after a half-century of Smithsonian enterprise. It is without question, the most in-depth and longest-running publication project ever undertaken by the Institution. *The Handbook* originated from a suggestion

by curator **John C. Ewers** to update Bureau of American Ethnology (BAE) *Bulletin 30: Handbook of American Indians North of Mexico*. The plan proposed by series editor, **William C. Sturtevant**, called for quarto-sized volumes with copious maps, illustrations, and photographs. Volumes would address cultural regions, from northern Mexico to the Arctic, along with various thematic “cross-cutting” volumes. The project ended in 2007, with the last volume published in 2008, and various other volumes were abandoned, including the introductory volume. In 2013, **Mary Jo Arnoldi**, then Chair of Anthropology, proposed to create Volume 1, and **Igor Krupnik** agreed to organize and edit the swan-song volume, which appeared in 2022 in print and digital format.

Since most ASC readers today have no knowledge of the *Handbook's* history, I offer a few notes comparing the *Handbook* process to a flight of arrows, some falling to earth prematurely while other reached their mark. The completed volumes (“arrows”) included v.8 *California* (1978), v.15 *Northeast* (1978), v.9 and 10 *Southwest* (1979, 1983), v.6 *Subarctic* (1981), v.5 *Arctic* (1984), v.11 *Great Basin* (1986), v.4 *History of Indian-White Relations* (1988), v.7 *Northwest Coast* (1990), v.17 *Languages* (1996), v.12 *Plateau* (1998), v.13 *Plains* (in 2 vols., 2001), v.14 *Southeast* (2004), v.3 *Environment, Origins, and Populations* (2007), v.2 *Indians in Contemporary society* (2008), v.1 *Introduction* (2022).

William C. Sturtevant, who served as the general editor for most of the *Handbook's* existence, planned 20 volumes which were to be published in order of their completion rather than in number sequence. The Introduction and several other volumes fell prey when funding terminated. Two thematic volumes were completed because of their social relevance: v.4, *History of Indian-White Relations*, and v.17 *Languages*, which was driven by the appearance of **Ives Goddard** early in the project's history, in part for his linguistics skills, but also for his management skill.

Now to the flights of arrows. The first headwind was the complex relationships between the enterprise, the Smithsonian “Castle” administration, and the U.S. Congress. The *Handbook* began under S.I. Secretary **S. Dillon Ripley** at a time of great expansion of Smithsonian museums. As each succeeding Secretary arrived, it grew more difficult to maintain *Handbook* funding, as each successively was challenged to push the Handbooks forward, with varying success. In 2007 funding dried up and the project was abandoned in mid-stream—that arrow fell short.

Sturtevant's trajectory was complex. He was superbly educated, had connections to scholars worldwide,

read French, Spanish, and German, and was devoted to “four field” anthropology. But he was not good at delegating authority, and his attention to detail while creating a series of superb volumes eventually resulted in production delays and, ultimately, in several unfinished volumes (like the most recent Volume 1).

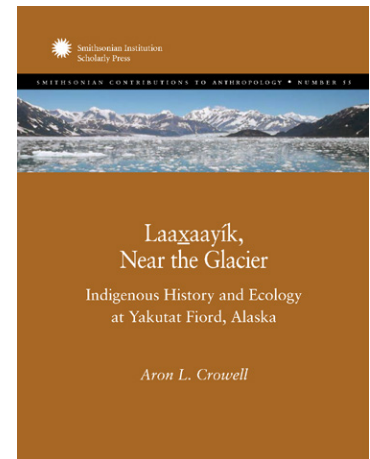
Another arrow was the growing critique of the legitimacy of “anthropology” during the *Handbook’s* long tenure. These included Indigenous critiques of the anthropological discipline and its practices; the idea that archaeology was seen by some Native Americans as a kind of ‘looting’ of their past; and the arcane museum practices toward Native American artifacts, human remains, and allied issues that led to new laws like the Native American Graves Protection and Repatriation Act (NAGPRA). In effect, the *Handbook* lasted for so long that the earth changed underneath the arrow in flight.

A final arrow was that the *Handbook* clung to an outmoded publication model. Initially, submissions came to the *Handbook* as typewritten manuscripts to be edited and retyped many times by hand. By the 1970s, at the very least, large institutional presses were compositing final text and formatting graphics with computers. *Handbook* materials could have been worked with digital files, but this did not occur till the very last volumes. Further, all graphics, maps, and photographs were negotiated for one-time use rights. This meant that volumes published between 1978 and 2008 could not be scanned or re-formatted as digital files and publications unless new publication contracts were negotiated with all rights holders, many of whom were no longer living.

All *Handbook* arrows returned to earth, with one exception—volume 1, *Introduction*. The book that was to introduce the series became its finale. Like all the other series volumes, it is massive, profusely illustrated (in color), densely constructed, with a comprehensive bibliography by **Corey Heyward** and **Cesare Marino**, excellent indexing, Indigenous participation, and thematic sets of chapters compiled and edited by Igor Krupnik, volume editor, and the editorial team including Ives Goddard, the late **Ira Jacknis**, **Sergei Kan**, **Ann McMullen**, **William Merrill**, **J. Daniel Rodgers**, **Gabriel Tayac**, and **Joe Watkins**. **Dan Cole** did the extensive cartography, as he did for many volumes of the original project. There is also a whole paragraph of others who worked on the volume, whom I am leaving out lest I miss someone. Igor’s editor’s *Preface* and introductory essays provide a deep history for the entire *Handbook* project of 1966–2022. Volume 1 is the only one in the series accessible online and available for free [download](#).

BOOK NOTICE: *LAAXAAYIK, NEAR THE GLACIER: INDIGENOUS HISTORY AND ECOLOGY AT YAKUTAT FIORD, ALASKA*, BY ARON L. CROWELL. SMITHSONIAN CONTRIBUTIONS TO KNOWLEDGE #55. Smithsonian Institution Press.

Fiord glaciers of southern Alaska reshape landscapes as they advance and retreat in response to climate cycles, influencing coastal ecosystems by enriching marine food webs with minerals carried in meltwater and ice floes. On land, biodiverse forest ecosystems grow and mature as glaciers withdraw, connected to the sea by glacially fed rivers and lakes where salmon spawn.



For millennia, Alaska Native peoples have lived and thrived in these highly productive cryogenic biomes, harvesting bounties of plant and animal foods by employing complex ecological knowledge, adaptive technologies, and lineage-based social patterns of cooperation and resource sharing. A longitudinal study of the 1,100-year cultural ecology of Yakutat fiord in Southeast Alaska was conducted during 2011–2014 by the Smithsonian Institution’s Arctic Studies Center and the Yakutat Tlingit Tribe to document Little Ice Age glacial retreat; settlement of the emerging fiord by migrating Eyak, Ahtna, and Tlingit clans; and utilization of the fiord’s marine and terrestrial habitats by past and present residents.

Applying principles of knowledge coproduction, this study joins oral ecological and historical knowledge shared by members of the community with scientific data from archaeology, archaeofaunal analysis, marine and terrestrial ecology, glaciology, subsistence surveys, and historical archives. Information and cultural perspectives from interviews conducted in English and Tlingit with community scholars, hunters, and artists are presented alongside results of archaeological investigations at former villages and camps dating from the thirteenth century to the 1960s. Special emphasis is placed on hunting and consumption of harbor seals (*Phoca vitulina*), a cultural focus and principal subsistence species throughout Yakutat history. The study demonstrates the centuries-long construction and modification of a cultural niche, or integrated human role, within the ecosystem of Yakutat fiord.

TRANSITIONS

G. CARLETON RAY (1928–2023): NATURAL HISTORIAN

By Igor Krupnik

The Arctic Studies Center lost an old and trusted partner with the passing of marine biologist and conservationist **G. Carleton Ray**, 95, on December 14, 2023. His last position was a research professor at the Department of Environmental Sciences, University of Virginia, in Charlottesville VA, where he and his wife and coauthor, **Jerry McCormick-Ray** had been working for over 40 years, before retiring in 2022. Carleton was a man of many talents and of highly diverse interests, who operated at ease at many scales in biology, ecosystem studies, and conservation. In one of his bios, he identified his research as reaching into several scientific disciplines, including animal physiology, taxonomy, oceanography, physics (acoustics), and behavior, and falling into the categories of coastal and marine biodiversity, land- and seascape ecology, marine mammal ecology, and physiological ecology, each leading to coastal-marine conservation. His geographic focus was equally diverse. Over his long career, he worked in the Bering Sea, Chesapeake Bay, the Bahamas, in Antarctica, small islands in the southern Pacific and the Atlantic, and other places. He was a deep-ocean diver, an avid photographer, an accomplished guitar player, a good storyteller, and at one time, a milk-father of baby walruses.

Carleton was a top-notch scholar, with his B.S., M.S., and Ph.D. degrees in Zoology from Yale, University of California Berkeley, and Columbia, respectively. Before his long tenure at UVa, he taught at Columbia, Rutgers, and Johns Hopkins University. Besides his many diving expeditions and ocean cruises, he worked for ten years as curator at the New York Aquarium in Brooklyn, NY and was twice a research associate at the Smithsonian, with a small office next to the Anthropology Chair's space at the Natural History Museum. He was instrumental in the making and passing of the Marine Mammal Protection Act of 1972. He was also a humble and widely respected person, with great wit and sense of humor.

Carleton and I met in May 1999 in the Yupik town of Gambell on St. Lawrence Island, Alaska, where he and

his wife Jerry were organizing a skin-boat trip with a Yupik crew to observe migrating walruses among the flow of rapidly drifting ice. Over the years, I heard numerous stories about his many visits to Gambell



Carleton and Jerry Ray, 2020. Photo by Tom Cogill, courtesy of UVa Dept. Envir. Sci.

in the late 1950s and 1960s for underwater observations of walrus feeding and mating behavior. He was befriended by several hunters and Yupik Elders, with whom he made easy and natural connections. Almost fifty years later, in February 2004, I persuaded Carleton to go with me on a trip to another island community, Savoonga, where, I introduced him to a Yupik marine mammal expert, **Chester Tapghaghmii Noongwook** (1933–2019—see *ASC Newsletter* 27). It was such a pleasure to watch two wise men enjoying each other's knowledge and company. Carleton

was always keen on including an anthropologist's and Indigenous users' perspective, so that I became his co-author on several papers and book chapters about the Bering Sea ecosystems and Pacific walrus.

Carleton was one of the very few contemporary scholars who proudly called himself a 'natural historian' or a 'naturalist.' He always professed an integrative vision and stressed the myriad links among environment, marine mammals, and people who live by hunting them. He contributed a great chapter titled "Arctic Crashes: A Naturalist's General Perspective" to our *Arctic Crashes* volume (Krupnik and Crowell 2020), in which he articulated his vision. Together with his wife Jerry, he published an award-winning textbook, *Coastal-Marine Conservation: Science and Policy* (2004, Wiley Blackwell, Oxford) reprinted as *Marine Conservation: Science, Policy, and Management* in 2014. The world of marine conservation and of marine mammal science will be a different space without one of its last dedicated 'naturalists.' He will be greatly missed, and our deep sympathy goes to his wife of 46 years, Dr. Jerry McCormick-Ray.

SERGEI A. ARUTYUNOV (1932–2023): 'CROSSROADS' PARTNER

By Igor Krupnik and Bill Fitzhugh

Russian and international Arctic/North Pacific anthropology lost one of its last 'giants' with the passing of **Sergei A. Arutyunov**, 91, in Moscow,

Russia, on December 21, 2023. He was born in Tbilisi, then the capital of the Soviet Republic of Georgia (today's independent Republic of Georgia), in a mixed family with strong Armenian roots and broad cultural background. He received his B.A. in the Japanese language at the Institute of Oriental Studies in Moscow and a Ph.D. in Japanese anthropology at the then-Moscow Institute of Ethnography (today's Russian Institute of Ethnology and Anthropology—IEA). He was elected a Corresponding Member of the Russian Academy of Sciences in 1990, served as the head of the Department of Caucasus at the IEA, and received numerous awards in Russia, Armenia, Japan, and other nations.

His professional interests and the geography of his field studies were remarkably diverse. For decades, he was known as the leading Russian specialist in traditional Japanese family life and everyday culture. Yet after completing his Ph.D. thesis on medieval Japan in 1958, he joined his mentor, **Maxim G. Levin**, and archaeologist **Dorian Sergeev** on a trip to the Russian side of Bering Strait to excavate the newly discovered ancient Eskimo burial ground near the Chukchi town of Uelen. That first trip triggered Sergei's lifelong connection to Arctic anthropology and ancient Eskimo cultures, from Bering Strait to Greenland. For several seasons from 1958 to 1975, he took part in excavating the Uelen burial ground and later, another ancient settlement at Ekven, at the southern entry to Bering Strait. These excavations resulted in magnificent museum collections of ancient Eskimo artefacts now housed in St. Petersburg and Moscow, several exhibits, two monographs co-authored with Sergeev, and several dozen papers in Russian, English, French, German, and other languages. In course of these excavations, he became a renowned expert on the early Eskimo arts and ornamentation styles and on Bering Sea cultural typologies developed by Smithsonian **Henry B. Collins** in the 1930s. In 1977, he joined **Michael Chlenov** and **Igor Krupnik** on a survey of the site called

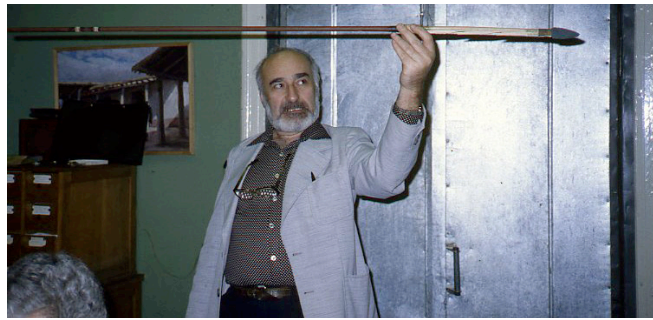
'Whalebone Alley' (the book by three co-authors was published in 1982). He returned to Chukotka in 1987, to inaugurate a new cycle of excavations at Ekven led by his former student, **Michael Bronstein**. In

between, he spent several field seasons working as ethnologist among the Nenets reindeer herders in Western Siberian Arctic (with **Vladimir Vasiliev**), Armenian peasants in Armenia (with a large Armenian field team), and among various ethnic groups across India and Vietnam.

Since the 1960s, Sergei was a world known 'star' and international darling of the then-Soviet anthropology. Intellectual, artistic, well-read, and fluent in many languages, including English, French, German, and Japanese, he was a constant feature at international meetings, where he eagerly served as a mediator and interpreter to his colleagues. His elaborated wine toasts at many a dining table, a cultural legacy of his native

Georgia, and his hilarious poetic inscriptions written for his friends were cherished as treasures. He was an internationally admired scholar, particularly in Japan, a true 'Crossroads' man, who comfortably moved across and between cultures, nations, and continents.

No wonder that in 1979 Sergei was chosen as the Soviet/Russian co-lead for the international exhibit project, "*Crossroads of Continents: Cultures of Siberia and Alaska*." It brought him in a decade-long collaboration and, eventually, personal friendship with his anthropology colleagues at the Smithsonian National Museum of Natural History. His relationship with the Smithsonian began a few years prior when he participated as a speaker and panelist at a symposium on circumpolar maritime adaptations organized by **William Fitzhugh** at the 1974 9th *International Congress of Anthropological and Ethnological Sciences* in Chicago. This was the first anthropological meeting in the U.S. to be attended by several Russian scholars. During that meeting Sergei 'stole the show' by seizing the microphone from official translators who proved



Top: Arutyunov demonstrating a spear at the Museum of Anthropology and Ethnography

Bottom: Crossroads team toasting prospective success with MAE director Rudolph Its: Joanne MacDonald, Bill Holm, William Sturtevant, Rudolph Its, Sergei Arutyunov, James VanStone, and George MacDonald

incapable of properly translating professional papers in Russian and Japanese (something he reportedly did at several meetings). When the Smithsonian launched the planning for the “*Crossroads of Continents*” exhibit in 1977, Sergei became the lead actor on the Soviet side. He shepherded the American curators’ visits to the rich Russian-America collections at the Museum of Anthropology and Ethnography in St. Petersburg, and Soviet curators’ trips to the American Museum of Natural History in NYC and to the Smithsonian in Washington D.C. He then led the Soviet delegations to several *Crossroads* venues in DC, NYC, Anchorage, and other locations in North America. In addition to his contributions to the exhibit, its catalogue, and symposium volume, Sergei and his younger colleague, the late **Sergei Serov**, became the first Soviet anthropological ‘ambassadors’ to counter the American propaganda of a Soviet Evil Empire. Following *Crossroads*, Sergei’s influence led to decades of Smithsonian and other institutions’ collaborations with Russian ethnologists and archaeologists, opening new, long-lasting ‘crossroads’ doors with Alaskan, Smithsonian, and other American and Canadian colleagues. Those research and friendship ties helped bring many more Russian scholars to the USA and fostered growing research collaborations until the recent Russian invasion of Ukraine.

Sergei Arutyunov’s passing marks a generation of collaboration that for several decades realized **Knud Rasmussen’s** 1933 dream of a coming global partnership in the study of Eskimo origins. Knud cautioned that this “cannot be brought to realization in the twinkling of an eye,” but thought it would eventually take place as a “great cooperative undertaking”. Sergei’s legacy, besides his many other accomplishments, brought Rasmussen’s dream to reality. We hope that a world, after the ugly war is over, will awake again to Knud’s and Sergei’s vision.

STEARNS ANTHONY (‘TONY’) MORSE (1931–2024)

By Elise Morse-Gagne published in Daily Hampshire Gazette on Feb. 10, 2024

Pelham, MA—**Stearns Anthony “Tony” Morse** died on January 9, 2024, six days after his 93rd birthday. Tony was born in 1931 to **Stearns Morse** and **Helen (Ward) Field Morse** in Hanover, NH, the youngest of four children. The family spent summers on a family farm in Bath, NH. Tragedy struck in 1937 when Tony's brother **Stephen**, 11, and a friend both drowned while fishing... Tony matriculated at Dartmouth College in 1948. From 1949 to 1952 he spent summers working on the schooner *Blue Dolphin*, operated as an

oceanographic research vessel on the Labrador coast by **David C. Nutt**, a Dartmouth professor. After graduating with a major in geology he was drafted into the Army and served for two years in post-WWII Germany, learning to ski and to love opera; immediately upon his return to the States, he returned to Labrador for further fieldwork. Breaking his leg in the field, he was transported by helicopter to the Grenfell Mission in Northwest River, where **Dorothy Forbes** was volunteering as a nurse's aide after her first year at Vassar College. The two were married in 1960.



Tony Morse on a Blue Dolphin Labrador oceanographic cruise in 1951

In 1962 Tony earned his Ph.D. in Geology from McGill University and joined the faculty of Franklin and Marshall College in Lancaster, PA, where the couple raised their three daughters, **Elise**, **Anne**, and **Sophie**. Tony continued to research Labrador anorthosites in the summers. Dorothy joined him for several of these excursions, living in a beaverboard cabin some 25 miles north of Nain with first two young children, then three, assisted by **Benigna Semigak**, from Nain.

In 1971 Tony took a position in the Earth Sciences department at UMass Amherst. The family moved to Massachusetts, and Tony launched a decade-long research project studying the Nain Anorthosite Complex with a series of graduate students, now using a mobile base camp in the form of R/V Pitsiulak, which he designed based on the Newfoundland Long Liner work boat. Dorothy and their children lived aboard as well for part of several summers, and Anne and Sophie each returned in later years to work as assistants. In 1977-78 the Morses lived in Oslo, Norway, where Tony collaborated with colleagues at Universitetet i Oslo. In addition to his exploration of anorthosites, Tony studied the nature of the Earth's core-mantle boundary and the thermodynamics of rocks and melts. His 1980 textbook *Basalts and Phase Diagrams* is a foundational resource in the field of petrology...and he published almost 90 research articles.

In 2013 Tony, then 82, with Anne Morse and her daughter Emily, organized and led the *Kiglapait Field Conference*, a unique gathering in Labrador for 22 geologists from around the world. In 2019 he received

the Mineralogical Association of Canada's highest award, for outstanding contributions to the mineral sciences of Canada. He was a Life Member of Clare Hall at the University of Cambridge, a Fellow of the American Geophysical Union, a Carnegie Fellow, a Senior Fellow of the Mineralogical Association of America, and a Fellow of the Geological Society of America.

In an era of increasingly siloed specialists, Tony was multifaceted. He was a lifelong outdoorsman: a field geologist, navigator, scything promoter and contestant, avid skier, builder, (maple)sugar-maker, hunter, and active manager of woodlands. He was also a rigorous scholar who conducted meticulous laboratory experiments, and a lucid and precise writer with a gift for exposition and unexpected analogies. A colleague recalls that “everyone wanted Tony to write their tenure recommendations” because his writing, while always impeccably correct, was never “geeky.” He loved poetry, especially the works of **Robert Frost**, and could quote long passages by heart. In his 20s, prevented by bad weather from getting into the field in Labrador, he translated a Moravian missionary's account of the deadly 1918 influenza epidemic in Hebron from German to English. For many years he wrote reminiscences and essays for the Littleton (NH) Courier, many compiled into a slim volume titled *Too Far North for Architects*. His musical repertoire was seemingly inexhaustible. Friends and family remember decades of guitar playing and singing; until he had Bell's palsy in his 80s, his melodious whistle could also be heard in operatic arias and the themes from classical symphonies...

Always an ebullient presence—warm, open-hearted, tempestuous—Tony was also generous with time and encouragement for younger scholars, with a special warm spot for late bloomers. He championed the entry of women and members of minorities into fields too long dominated by white men. He believed science was at its best when it was full of humanity, while life at its best included plenty of scientific thinking. Together, the two were like a big house party, spilling out onto the lawn and lasting well into the night: effusive greetings and introductions, games of frisbee or poker, children underfoot, gusts of laughter, beer, singing, and above all, stories celebrating good science and good people.

*[Additional notes by Bill Fitzhugh: The above is a warm, wonderful tribute to Tony's life, his professional accomplishments, and his impact on colleagues and younger scholars—like me. Also a Dartmouth grad, I became aware of Tony's work in Labrador through his association with **Elmer Harp**, who brought Tony to Labrador as a field assistant in 1949 and 1950, and me to Hudson Bay in 1967. Tony contributed a petrographic appendix on Ramah chert to my Ph.D. dissertation,*

*contributed information leading to discovery of the Ramah chert quarries on the Torngat coast of northern Labrador, and, with an assist from his geological mentor, **Everett (Pep) Wheeler**, lured me from Hamilton Inlet to Nain and its archaeological and geological riches. During the late-70s and early 80s, after I acquired my own boat, Tony's and my crews shared research, food, and home brew whenever we crossed paths around the Kiglapaits. Later, when I outgrew R/V *Tunuyak* and needed a larger, safer vessel, he loaned his pride and joy—the R/V *Pitsiulak*—to the Smithsonian for our 4-year project in Frobisher Bay, Baffin Island, investigating the archaeology of the **Martin Frobisher** voyages (1576–1578) in the early 1990s. Then, in 2001, he and the University of Massachusetts donated *Pitsiulak* to the Smithsonian for the Arctic Studies Center's continuing research in Labrador and the Quebec Lower North Shore. For more the thirty years, Tony's generous support enabled the ASC to conduct pioneering research, train new generations of archaeologists and other 'ologists', and work with indigenous partners, bringing the history, cultures, and environments of the Far Northeast into focus as never before. We hope we have carried on the tradition established by Tony and his salty predecessors, **Alexander Forbes**, **Donald MacMillan**, **David C. ('Beany') Nutt**, and countless Inuit who made their scientific work productive and safe. Tony's passing this year is especially poignant because it also marks a 'goodbye' to *Pitsiulak*, a victim of the covid transition and a time for the ASC to retire from fifty-five years of northern field research. Thank you, Tony, for your inspiration, leadership, and generosity.*

(Readers will find other *Newsletter* pieces by or about SAM in ASC *Newsletters* #24 (2017), 26 (2019), and 28 (2021), and in '*Adieu Pitsiulak*' in this issue.)

TRIBUTES TO NORMAN HALLENDY (1932–2023)

By William Fitzhugh

Sometimes it takes an 'outsider' to shake the foundations of our academic trains of thought. I think of **Alexander Marshack's** idea that seemingly random scratches on Upper Paleolithic bones marked lunar cycles; of **Milankovitch's** notion that climate change was forced by precession of the earth's axis; or of **Wegener's** hypothesis about continental drift. Norm was never trained formally in astronomy or geophysics, or for that matter in anthropology or archaeology; but his decades of work with Inuit of southern Baffin, and his passion for exploring stone structures, transformed the way anthropologists and many others approach the Inuit landscape. No longer can we entertain the idea that it can be adequately described or interpreted without Inuit

assistance and consultation. His beautiful photography and sensitive probing for meaning—especially his lexical recording—among his Inuit friends and elders opened our eyes to a spiritual, historical, and intellectual world hidden in seemingly prosaic rock placements, cairns, alignments, and inuksuks—formations long known to anthropologists who never realized that to understand them one had to establish a 'Rasmussen-like' trust with Inuit that only a few researchers achieved. Norm did not solve many of the riddles behind Inuit geo-sculpture, but he showed they had purpose we never imagined. Norm opened the door to a world hidden from outsiders that with the passing of elders we will never fully recover. But at least we now know the Arctic landscape is filled with physical manifestations of stories, meaning, and mystery that may still be recovered—at least partially—if one has the stamina, intuition, sensitivity, and communication skills of a **Norman Hallendy**.

By Alan Morantz

I've known Norm since 1994. We worked intensively and creatively, first on an influential article on inuksuit for *Equinox* magazine, then on his trailblazing book on the same subject published a few years later, and most recently on his memoirs, *An Intimate Wilderness*. More than anyone I know, Norm embodied the **Walt Whitman** poetic declaration, "I am large, I contain multitudes."

Norm could be the most cantankerous and the most charming man. He was both artist and scientist. He could hold a room of thousands spellbound or make himself small to draw others in. He had no formal education in linguistics, ethnohistory, or anthropology yet made lasting contributions in each of those areas.

What compelled Norm to return to the North year after year, decade after decade? It wasn't fame or fortune. It wasn't escape. It wasn't some vainglorious endeavour.

The easy answer is that he saw a life purpose in acting as a ghost writer for Inuit elders whose traditional life was disappearing. There was certainly affection for the Cape Dorset elders he befriended; they became a second family in a sort of parallel universe. Norm grew old with them. But I think the most compelling explanation is that Norm was on a lifelong journey of self-discovery, and for him most roads led North. On several occasions, he would say to me that, as far as he was concerned, "the last great wilderness is yourself."

In his encounters with the Inuit elders, he listened a lot, but he also shared his own experiences and life stories. Of his forbears from Bukovina. Of the traditions of his grandmother. Of the seemingly arcane rituals of the Church. It was a learning loop: traveling on the land in all seasons, Norm would share stories from his upbringing and life down south, and the elders would relate those stories to their own experiences. Over time, and against the backdrop of a spare and unforgiving environment, Norm developed a keener understanding of who he was and who he wanted to be.

I once asked Norm for information to include in the biographical line at the end of his first *Equinox* story. He wrote back: "I don't know who I am. I'm just a person who went to school, got a good education, learned how to observe things well, got a series of interesting jobs, had the good fortune of working with people much smarter

than I, and who continues to derive much pleasure in discovering things for myself rather than, as Lin Yutang once said, being carried in the rickshaw of another man's labours. Today, we honour and say goodbye to Norman Hallendy, explorer of the last great wilderness.

By Louise Terrillon-Mackay, Gatineau

I met Norm in the early 90s when I was Director of international relations in the Department of Canadian



Norman Hallendy at the McMichael Canadian Art Collection gallery during the exhibition entitled Sakka: Observing the Invisible: Photographs by Norman Hallendy. (McMichael Canadian Art Collection)



Inuksuks in South Baffin Island. Photo by Norman Hallendy

Heritage and Chargé de Mission to UNESCO. He came to me with a proposal to give a lecture and organize an exhibition of his collection of Inuit Art at the headquarters of UNESCO in Paris. An exhibit of his photographs of the Arctic was also shown at the then Canadian Museum of Civilization, now known as the Canadian Museum of History. We discussed at length how to get both exhibits to Europe. It was a long and complicated process which took a few years.

But the wait was worth it. Norm came to Paris, and the combined exhibit was placed in the main hall of UNESCO Headquarters. The lecture was also advertised, and Norman, who as you all know was a raconteur extraordinaire, talked for one hour about Inuit culture and traditions and his experiences and adventures with his friends in Cape Dorset. The hall was full to overflowing. There had never been such a turn-out for a lecture at UNESCO! It was also thanks to the help of **Rosamaria Durand**, a Canadian who was the Executive Assistant to the Assistant Director General for Culture at UNESCO, that the exhibition and lecture happened. She organized a dinner, and a great evening was had by all with flamenco music played on a guitar by **Milagros Del Corral** from Spain. You should have seen Norm dancing flamenco! The photo exhibit toured around Europe after its stay in Paris and was returned to the Canadian Museum of Civilization

Norman was a good friend and interested in so many things. He was even on the Board of the Canadian Institute for Mediterranean Studies, which I Chair, for a few years, because of his Italian connection. But his love for the Arctic was so strong that he returned his focus to his Inuit friends in the North. We had so many things to discuss over the years. I will miss our conversations. He was a very special person, and we shall all miss him. May you rest in peace Norman, you deserve it.

Statement by the McMichael Collection

All of us at the McMichael are saddened to hear of the death of Norman E. Hallendy (1932-2023), an important ethnographer and photographer who worked closely with Inuit communities in the North—especially in Kinngait—for many decades. Through six donations consisting of his ethnographic archives and four donations of Inuit art, Norman supported the McMichael for over forty years and through his Arctic research spanning more than 50 years, contributed significantly to the preservation of Inuit cultural heritage in Canada. We are grateful for Hallendy's important work and for entrusting us with his legacy. The McMichael Canadian Art Collection will host a special event featuring Norman's life and work on April 13, 2024.

DON E. DUMOND (1929–2023): ARCTIC SCHOLAR

By Dennis Griffin

Don E. Dumond, Arctic archaeologist, scholar, professor, and past director of the University of Oregon's Museum of Natural and Cultural History, passed away on June 8th at the age of 94. He was a colleague, mentor, and friend to many in the Arctic academic community, in addition to the University of Oregon, with which he was associated for over 60 years. While publishing on both Arctic and Mesoamerica, he spent decades working at the then Oregon State Museum of Anthropology, helping to insure its survival when museums were neither appreciated nor adequately funded. His perseverance and leadership insured that the now-named Oregon Museum of Natural and Cultural History is both thriving and much loved throughout the Pacific Northwest.



The way most of us remember Don: taking a question, considering, and responding with a touch of humor. Photo courtesy: UO/MNCH

Born in Texas on March 23, 1929, Dumond spent his formative years in rural New Mexico where his family had a small livestock ranch. He attended the University of New Mexico graduating with a degree in English literature in 1949. Before joining the military, he spent several months traveling through Mexico. This trip not only served as the impetus to his life-long interest in Mexican culture history, but it is where he met his future wife Carol Steichen, an accomplished artist, cartographer, and illustrator who drew most of the maps and figures in his published works.

Don returned from the Air Force, after serving in both Korea and Japan, and using the GI Bill, attended Mexico City College where he earned a master's degree in Latin American Studies in 1957. There he took his first field archaeology class and excavated at Teotihuacán. After graduation, Don followed Carol to Oregon, and enrolled at the University of Oregon's new Ph.D. program in Anthropology with Luther Cressman as his advisor, because—as he told Donald Grayson (2010, *Arctic Anthropology* 47(2):1)—"I always enjoyed the story of things".

Dumond spent a few summers working in Oregon before accepting a federal contract to investigate

historical salmon runs in Alaska before the 1880s. This job brought him to the Alaska Peninsula, which became the focus for his dissertation. His first project in 1960 was in Katmai National Park. As he told Don Grayson, “I wanted to make Alaskan archaeology a story, with a beginning, a middle, and an end, and Alaska wasn't complete in my mind yet and wouldn't be for years to come.” Dumond completed his dissertation in 1962.



Don in Northeast Siberia in 1990. Photo courtesy: Arctic Anthropology



Dumond at the University of Oregon's Museum of Natural and Cultural History. Photo courtesy: UO/MNCH

Don spent the next four decades working on the Alaskan Peninsula as well as in Mexico, making major contributions to the history of both regions. His first publication was in 1957, and he continued to publish as late as 2018. His Arctic publications focused on human prehistory and demography on the Alaska Peninsula, but his geographic framework continuously expanded, taking in southwestern Alaska, the Americas, and Northeast Siberia. Dumond lived only a few doors down from the Moss Lab at the museum, and long after his retirement one could see him walking to the

lab each morning. A prolific writer, he authored the text book, *Eskimos and Aleuts*, and published articles in journals including *American Antiquity*, *American Anthropologist*, *Science*, *Arctic Anthropology*, and *Arctic*, in addition to numerous monographs in *Anthropological Papers of the University of Alaska* and *University of Oregon Anthropological Papers* series.

Dumond's entire career was spent at the University of Oregon (UO). He began his graduate studies there in 1959, taught until 1994, serving as department head from 1972 to 1979, and in 1982 served as the Director of the Oregon State Museum of Anthropology, now called the UO's Museum of Natural and Cultural History, from which he retired in 1996. During his teaching years, Dumond served as advisor to more than 17 graduate students who received their Ph.D.s, of which I was his last. I had the good fortune to serve as his teaching assistant during his last two years of teaching and so was able to witness his interaction with students considering a career in archaeology. While his lectures were both detailed and comprehensive and he expected his students to have read the assigned material and lectures, his door was always open and his insight was appreciated by those who approached him

During his long career, Dumond received many accolades. He was an elected Fellow in the American Anthropological Association, the Arctic Institute of North America, and the American Association for the Advancement of Science, and was elected to the Sociedad Mexicana de Antropología. Following his retirement, he was presented with the Career Achievement Award of the Alaska Anthropological Association, the Director's Lifetime Achievement Award by the Museum of Natural and Cultural History, and the Gertrude Bass Warner Award from the Jordan Schnitzer Museum of Art. He will be missed by many!

ADIEU, PITSIULAK—WELL-TRAVELED RESEARCH PARTNER!

By William Fitzhugh

This year saw the departure of two old friends: **Stearns A. (Tony) Morse**, and his boat-child, *R. V. Pitsiulak*. Tony died after a brief illness in January 2024 (see Morse obit in this *Newsletter*). Tony was introduced to Labrador geology by **Elmer Harp** and **David (Beanie) Nutt** and picked up the tradition, dating to **David MacMillan** and **Robert Peary**, of conducting boat-based research along the rugged Arctic and Subarctic coasts of the Far Northeast. After a few seasons traveling around the Kiglapait Mountains north of Nain with his wife, **Dorothy Morse**, in canoes and small outboards, Tony convinced NSF to fund construction

of a vessel built on the lines of a Newfoundland long-liner, with modifications for hosting a research crew and lab equipment. *Pitsiulak* (Inuit for sea pigeon or Black Guillemot) was built in a Lewisport boatyard in 1971. Tony used it to support teams of geologists along the northern Labrador coast for ten years, gathering data on the anorthosite intrusion that was at that time producing dates on some of the oldest rocks in the world. Tony wrote about his family's participation on *Pitsiulak* trips:

With NSF help we built a 51-foot research vessel with greenheart sheathing for work in ice. Dorothy cooked and steered, called out the ice ahead, and took care of the daughters for several summers. We used Pitsiulak in Labrador for ten years and then gave it to the Smithsonian for their Arctic archaeology studies under William Fitzhugh. Bill took the ship to Baffin Island where for several summers our youngest daughter Sophie Morse served as Operations Officer. (ASC Newsletter 28, p. 79)

After a gap in funding left *Pitsiulak* stranded onshore, Tony loaned the boat to support the Smithsonian's "Archaeology of the **Martin Frobisher Voyages**" project in Baffin Island. *Pits* was truly in her element during the Frobisher project. Equipped with new engines and electronics fitted out by Smithsonian, and with **Perry Colbourne** of Lushes Bight, Newfoundland, as skipper, we left Newfoundland in 1990 and motored north along the Labrador coast, crossed turbulent Hudson Strait, passed Resolution Island, and entered Frobisher Bay, where we were greeted by 40-foot tides. In a snowstorm at the end of the first summer's explorations, we hauled her ashore on a cradle built from steel sent up from Ontario. It took three tractors to move her a quarter mile up the flats, racing the incoming tide! There she sat for three winters alongside the deteriorating hulk of **Max Dunbar's** boat, *Calanus*, built in Nova Scotia in 1949 and abandoned on the Iqaluit beach in the late 1970s. For three more years we returned to Frobisher with large teams, launched and hauled *Pits*, and worked on sites in outer Frobisher Bay—Kodlunarn Island (Frobisher's base camp), Tikkoon, Willows Island, Cyrus Field Bay, and others, returning to the Port Saunders (Nfld) Marine Center in late August 1993.



Pitsiulak underway in Labrador in the mid-1980s

Through the 1990s we worked yearly along the Labrador coast, returning to Port Saunders, where Bill and Ilene Lowe provided hospitality while we staged and hauled-out, before we shifted homebase to the Triton Marine Center, near Springdale, Nfld, near Perry's home on Long Island. From there, the Labrador voyages launched and returned until the Smithsonian and *Pitsiulak* became household words, while boat upkeep pumped funds into the local economy.

In 2001, *Pits* turned her bow west to the Quebec Lower North Shore (LNS), pursuing knowledge about the southern boundary of Inuit cultures and their contacts with 16-17th century Basque whalers. For nineteen years, she carried teams back and forth along the LNS, stopping yearly to check out the Norse site at L'Anse aux Meadows, visit with **Boyce Roberts** in Quirpon, and eat a meal at **Gina** and **Adrian Noordhof's** Norseman restaurant at L'Anse aux Meadows. On the LNS we were hosted at Brador by **Clifford** and **Florence Hart** while we excavated the Hart Chalet Inuit site, by **Christine** and **Wilson Evans** of Harrington Harbor while digging Inuit-Basque sites at Petit Mécatina, and by **Garland Nadeau** and **Eilene Schofield** of St. Paul River while working on Inuit and Basque sites there. *Pits* and Skipper Perry threaded these Gulf shores and shoals for another 19 years while we explored, excavated, and hosted teams of University of Montreal and Smithsonian underwater archaeologists.

When we returned in 2019 from St. Paul River and hauled out at Triton, we expected to be back in 2020 for several more years of work on the LNS, but covid had other plans. *Pits* sat ashore for the next two years while we were unable to reach her, and I sensed the ebbing of her sea-going days. In 2023, Perry was eligible for retirement, boat engineering needed upkeep, and funds for putting her back in shape were no longer available. For two more years, 2022 and 2023, we visited and saluted her as we headed off for the LNS, hauling a trailered speedboat behind Parry's truck. Finally, in 2023, with no way for a future launch, Perry and I cleared our gear out, emptied her fuel tanks, and presented her to the Triton yard for recycling. Some parts like her generator, motor and shaft, props, anchor chain and winch, and guard rails may find new life on another vessel.

Perry's and my last visit to her was more than sentimental—it was like saying goodbye to an old, trusted friend. The hours and miles travelled, the storms braved—all came rushing back: desperate hours as the tide dropped her on a sharp rock; the two terrifying storm-stranded days in Frobisher Bay when Perry, alone, rode out a storm while we were caught ashore; a near stranding in the Hamilton Inlet Backway when a wind-shift set us on a rock at dinner-time; a falling-tide grounding in the Fischot Island channel; loosing and regaining towed speedboats (one of which drifted back to us on her own!); a bad stormy night at the Blanc Sablon pier; and the silence of an engine failure in high seas off St. Paul River. Thanks to Perry's engineering and crisis management skills we survived these and other difficult times. When the chips were down, Perry and Pits worked things out.

Entering history, *Pitsiulak* joins a long line of sturdy



Captain Perry Colbourne beside the vessel he rebuilt several times, when both retired in 2023, in Triton, Newfoundland.

Photo by Bill Fitzhugh

vessels that served science along the Newfoundland, Labrador, and Baffin coasts: Nutt's *Blue Dolphin*, MacMillan's *Bowdoin*, Dunbar's *Calanus*, and former ASC vessels, *Qilaluak* and *Tunuyak*. All hosted countless teams of researchers; all became familiar and famous (or infamous!) to local residents; and all created legends recorded in our logbooks and work reports. *Pitsiulak*, like *Bowdoin* (which was rebuilt and still serves the Maine Maritime Academy as a training ship), served a great number of students and scientists, from its Morse and Smithsonian days from 1971 to 2019. She will be remembered by all who sailed with her and those ashore who knew of her.

2023 ASC STAFF PUBLICATIONS

Biddison, Dawn

Batuk'enelyashi: Natural Dyes from Dena'ina Lands. 15 videos featuring knowledge shared by Sugpiaq/Iñupiaq Master Artist June Simeonoff Pardue and her apprentice/granddaughter Destinee VonScheele.

Batuk'enelyashi: Natural Dyes from Dena'ina Lands. 50-page instructional booklet accompanying the video set. (June Simeonoff Pardue and Dawn Biddison)

Coming Home: Reclaiming Ahtna Knowledge through Museum Collections, edited by Dawn Biddison with illustrations and designs by 80% Studios.

Making Connections: Athabaskan Lifeways and You. 36-page educational activities booklet featuring Smithsonian collections and Athabaskan research. (Melissa Shaginoff and Dawn Biddison, illustrations and designs by 80% Studios)

Cloud, John

Le Rendez-Vous de Virginie. In: Kowalski, Jean-Marie, Chaline, Olivier., *L'Amiral de Grasse et l'Indépendance Américaine*. Paris, France: Sorbonne Université Presses, (Histoire Maritime) pp. 287-325. (Cloud, John and Oliver Chaline)

Crowell, Aron

Climate Change and Pulse Migration: Intermittent Chugach Inuit Occupation of Glacial Fiords on the Kenai Coast, Alaska. *Frontiers in Environmental Archaeology* 2:1145220. (Aron L. Crowell and Mayumi Arimitsu)

The Truth of Oral Tradition: Multisource Confirmation of Northern Indigenous Histories. In *On Melting Ground: Arctic Archaeology*, ed. J. Beutmann, S. Hansen, C. Michel, S. Reinhold, and S. Wolfram. Deutsches Archäologisches Institut, Berlin.

Driscoll Engelstad, Bernadette

Inuit Clothing Design: Art Across Time. In *Inuit Sanaugangit: Art Across Time*, edited by Darlene Wight and Jocelyn Piirainen, eds. Winnipeg, MB: Winnipeg Art Gallery.

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Archaeology of the North American Arctic. In: Nikita, E., Rehren, T. (eds.), *Encyclopedia of Archaeology*, 2nd Edition, vol. 3, pp. 337–366, London: Academic Press. <https://dx.doi.org/10.1016/B978-0-323-90799-6.00207-X>.

Archaeology of Bronze Age Mongolia: A Deer Stone Diary. 277pp. Arctic Studies Center, Smithsonian Institution, and Inuit Press International.

Smithsonian 2022 Surveys in Northwest Newfoundland and Testing a Basque Whaling Station in St. Paul River, Quebec. A Field Report. Arctic Studies Center, Smithsonian Institution. Wash., D.C. (Fitzhugh, William, Sarai Barreiro-Argüelles, Francisco Rivera Amaro, and Ben Fitzhugh)

Exploring a Basque Whaling Tryworks at Bonne Espérance-4, St. Paul River, Quebec. 2022 Permit Report to the Quebec Ministry of Culture and Communication. (Fitzhugh, William W., Sarai Barreiro-Argüelles, and Francisco Rivera Amaro)

On the Question of the Tent Rings, Caribou, and Inuit in Northwest Newfoundland. *Provincial Archaeology Office 2022 Annual Review*. Pp. 7-17. (Barreiro-Argüelles, S., William W. Fitzhugh, Brad Loewen, Ben Fitzhugh, and Dongya Yang)

A Small Basque Whaling Station in St. Paul River, Quebec. *Provincial Archaeology Office 2022 Annual Review*: 109-115. (Fitzhugh, William W., Sarai Barreiro-Argüelles, and Francisco Rivera Amaro)

Conjuring Mongolian Deer Stones: Biographical Statuary of Bronze Age Central Asia and South Siberia. *Current World Archaeology* 117 (Jan-Feb.):1-26. (William W. Fitzhugh and Richard Kortum)

Deer Stones and the Bronze to Iron Age Transition in Mongolia. In *Proceedings of the 15th Annual International Mongolian Studies Conference*, May 12-13, 2023, Ed. G. Dashlkhagvan, pp. 83-89. Wash., D.C.

Krupnik, Igor

George Noongwook (1949–2023). *Arctic* 76(2): 239–242. (H. P. Huntington, I. Krupnik, and H. Ikuta)

Yupik Elder Broke Ground in Whaling, Culture and Research. *Indian Country Today* (online December 13, 2023). (H. Huntington, I. Krupnik, and H. Ikuta.)

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Loring, Stephen

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Smith, Kevin

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Wolff, Christopher

Scaling Up and Hunkering Down: The Evolution of Beothuk Houses and Households. *North American Archaeologist* 44(4): 146-175. (D.H. Holly, jr., J. C. Erwin, C.B. Wolff, S. H. Hull, A. Samuels, and J. Brake)

The Maritime Archaic Occupation of Inspector Island: New Survey and Evidence. *PAO Archaeological Review*, 21: 322-325. (C.B. Wolff, D. H. Holly, Jr., K. Farley, Z. Huelskamp, and A. Lovett)



Captain Perry Colbourne and Pitsiulak at Petit Mecatina, 2004. Photo by Bill Fitzhugh



Harrington Harbor, 2005. Photo by Bill Fitzhugh



Supporting Archaeology in Frobisher Bay, Baffin Island, 1992. Photo by Bill Fitzhugh



A lobster feast in St. Paul River, Quebec, 2019. Photo by Bill Fitzhugh



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