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Subsistence walrus hunting in Inuit Nunangat (Arctic Canada) and Kalaallit Nunaat (Greenland) from the 13th century CE to present

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Introduction

Modern inhabitants of both Inuit Nunangat (northern Canada's Inuit territories¹ – land, water and ice) and Kalaallit Nunaat (hereafter, 'Greenland') are descended from culture groups archaeologists refer to as Thule (or Thule Inuit), some of whom migrated relatively rapidly from western and northern Alaska most likely

¹ The designation includes the Inuvialuit Settlement Region in northern Yukon and the western Northwest Territories; Nunavut; Nunavik in northern Quebec and Nunatsiavut in northern and east-central Labrador.

in the 13th century CE (Friesen and Arnold, 2008; Friesen, 2016). These pioneers would ultimately settle most of the lands occupied by Tuniit (Dorset Paleo-Inuit), displacing them altogether by the beginning of the 15th century CE. With their (likely) more sophisticated open-water boating technology and specialized marine-mammal hunting toolkit, Thule Inuit arguably had far greater success than Dorset in targeting Atlantic walruses (*Odobenus rosmarus rosmarus*).

The first Thule Inuit migrants out of Alaska continued and remade a rich and long-lasting tradition of hunting bowhead whales (*Balaena mysticetus*) and Pacific walruses (*Odobenus rosmarus divergens*), which gathered in sizable herds on the Bering Strait ice and at terrestrial haul-outs (Hill, 2011a). While much scholarly attention has been paid to the social and economic importance of bowhead whales to Inuit society over time (see Maxwell 1985; McCartney 1979; McCartney and Savelle 1985; Patton and Savelle 2006; Whitridge 2002; among many others), there has been relatively little consideration of the long-term history and importance of Inuit walrus hunting. Today, hunters in dozens of communities across Inuit Nunangat and Greenland continue to hunt walruses in relatively large numbers, and there is great inter-regional diversity in hunting and processing practices; activities that may have once been wide-reaching and ubiquitous have largely given way to distinct regional variations suited to local environmental and social conditions. Even today, the storage and preparation of walrus products are regionally determined. Inuit of Nunavik (Nunavimmiut), though speaking the same language and sharing many of the same cultural traditions as Inuit of Nunavut (Nunavummiut), typically hunt and process walruses in different ways from their northern neighbours. Similar differentiation can be observed among widely-separated walrus-hunting communities in eastern and western Greenland.

The largest and most stable walrus herds favour relatively shallow waters that support their benthic prey, as well as recurring polynyas, which offer both open water for diving and solid ice for hauling out. Important examples of such walrus ‘hotspots’ that have been heavily exploited by Inuit in the past include (1) northern Foxe Basin, Nunavut (Desjardins, 2013, 2018), (2) the North Water of northern Davis Strait (Gotfredsen et al., 2018) and (3) the Sirius Water near Clavering Island, North-East Greenland (see Gotfredsen, 2010; Grønnow et al., 2011). To more fully explore regional diversity of walrus-hunting practice, we focus our attention on the most prolific hunting traditions that rely upon such environments: those of Amitturmiut (Inuit of northern Foxe Basin, Inuit Nunangat) and communities in Avanersuaq, North-West Greenland. We close with a discussion of the importance of walruses in Pan-Inuit cosmology.

Walrus hunting in Inuit Nunangat

Insights about walrus hunting by Thule and historic Inuit (from approximately 1300 to 1950 CE; hereafter, ‘premodern hunting’) in Inuit Nunangat can be drawn from zooarchaeological data (animal remains from archaeological sites),

walruses. The hunters and their dogs, now dragging the partially-butchered catch, would return to the safety of the land-fast ice before the ice floes moved back out to sea with the currents (Piugattuk, n.d.; Alaralak, 1990; Kappianaq, 1993; Qamaniq, 2001; Uttak, 2001). This perilous practice would be repeated as the opportunity arose, until the land-fast ice itself began to break up in the spring (Kappianaq, 1992).

Evidence for the lasting nature of these hunting methods comes partly from zooarchaeological data. Desjardins (2018) has compiled previously-recorded faunal data from 32 Thule-to-historic Inuit sites and site-complexes across Inuit Nunangat. Desjardins, 2018's results show that while 19 locales (59%) had walrus remains (see Fig. 6.1), the Atlantic walrus was the top-ranked resource at only two sites according to the number of identified specimens (NISP). Both sites were



FIGURE 6.1 Select archaeological sites and site aggregations (groups) from which premodern walrus remains have been identified through zooarchaeological analysis. In Inuit Nunangat: Nachvak Fd. Group^a (Swinerton, 2008), JfEI-10 (Lofthouse, 2003), Qijurittuq

in North-West Foxe Basin and adjacent to the recurring Foxe Basin polynya system: Sanirajak (NeHd-1) (comprising 48.1% of all identified bones) and Pingiqqalik (NgHd-1) (38.2%).³ It is likely that the bone-laden middens at these and other large premodern winter villages in northern Foxe Basin are the result of similar daring winter forays onto the pack ice. Less time would have been spent

◀ (Desrosiers et al., 2010), Sadlermiut/Native Pt. (Collins, 1956, 1981), Silumiut (Staab, 1979), Naujan (Mathiassen, 1927), Sanirajak (Desjardins, 2013), Pingiqqalik (Desjardins, 2016, 2018), Hazard Inlet grp.^b (Whitridge, 1992), Cape Garry (Rick, 1980), Learmonth (Taylor and McGhee, 1979; Rick, 1980), Lady Franklin Pt. (Taylor, 1972), Porden Pt. grp.^c (Park, 1989), Bache Pen. grp.^d (McCullough, 1989), Pond Inlet grp.^e (Mathiassen, 1927), Cumberland Snd. (Schledermann, 1975), Peale Pt. (Stenton, 1987), Outer Frobisher Bay grp.^f (Henshaw, 1995) and Talaguak (Sabo, 1981). In Greenland: Kangaamiut grp.^g (Degerbøl et al., 1931), Isuamiut, Nipisat (Gotfredsen unpublished), Illutalik (Mathiassen, 1934), Nugarsuk (Møhl, 1979), Inussuk (Mathiassen, 1930), Kap Seddon grp.^h, Nuullit (Gotfredsen et al., 2018), Cape York grp.ⁱ (Grønnow et al., 2015), Saunders I. (Grønnow et al., 2017), Iita (Johansen, 2013), Cape Grinnell (Darwent and Foin, 2010), Qaqitsut (LeMoine and Darwent, 2010), Hatherton Bay grp.^j (Christensen, 2000), Saxifraga tomt, Kap Ringkøbing (on file, National History Museum of Denmark [NHMD]), North-East Water grp.^k (on file, NHMD; Gotfredsen unpublished), Dove Bay grp.^l (on file, NHMD; Thostrup, 1911), Walrus I. (Gotfredsen, 2010; Grønnow et al., 2011), Clavering I. grp.^m (Degerbøl, 1934; Gotfredsen, 2010), Cape Harry (Degerbøl, 1935), Scoresby Snd. grp.ⁿ (on file, NHMD; Sandell and Sandell, 1991), Ikaasap Itiva (Møbjerg and Robert-Lamblin, 1990).

^a Nachvak Village (IgCx-3) and Kongu (IgCv-7); ^b Ditchburn Pt. N, S (PaJs-3), PaJs-4 and PaJs-13; ^c Porden Pt. Brook Village (RbJr-1), Porden Pt. Pond Village (RbJr-4) and RbJr-5; ^d Skraeling I. (SfFk-4), Sverdrup (SfFk-5) and Eskimobyen (SgFm-4); ^e Mittimatalik (PeFr-1) and Qilalukan (PeFs-1); ^f Kamaijuk (KfDe-5), Kuyait (KfDf-2) and Kussejeerarkjuan (KeDe-7); ^g Z.M.K. 13/1930 Utorqaat; Z.M.K. 14/1930 Illutalik; Z.M.K. 15/1930 Uummannat; Z.M.K. 16/1930 Qeqertarmiut; ^h Z.M.K. 80/1979 Illuminerssui; Z.M.K. 82/1979 Tupersuai; ⁱ Z.M.K. 44/2015, KNK 3900 Ivsuissoq (Parker Snow Bugt); Z.M.K. 52/2015, KNK 3908 Inersussat, Salve Ø; ^j Z.M.K. 69/1996 KNK 3074 Qeqertaaraq, Hus y142/294; ^k Z.M.K. 48/1993 KNK 2071 Eskimonæsset; Z.M.K. 49/1993 KNK 2073, Henrik Krøyer Holme; Z.M.K. 50/1993 KNK 2072 Sophus Müllers Næs, Amdrup Land; Z.M.K. 54/1993 KNK 2076, Eigil Knuth Site; ^l Z.M.K. 13j/1909 Maroussia; Z.M.K. 13n/1009 Renskæret; Z.M.K. 13p/1909 Rypefjeldet; Z.M.K. 13r/1909 Snenæs; Z.M.K. 13w/1909 Stormbugt, Østkyst; Z.M.K. 13z/1909 Syttenkilometernæsset; ^m Z.M.K. 28/1932 Dødemandsbugten; Z.M.K. 101/2007, KNK 3101 Cla-06 Fladstrand; Z.M.K. 119/2007, KNK 3117 Cla-33 Kap Breusing; Z.M.K. 121/2007, KNK 3119 Cla-36 Dahls Skær; Z.M.K. 124/2007 KNK 3122 Blåkløkkenæs; Z.M.K. 61/2008 KNK 3131 Cla-02; Z.M.K. 63/2008 KNK 3130 Cla-63 Tangen; ⁿ Z.M.K. 76/1984, KNK 3011 Sandells' vinterhus; Z.M.K. 8a/1924 Kap Tobin; Z.M.K. 101/1966 Kap Tobin, 'Varde Pynt'; Z.M.K. 129/1964 Hurry Inlet.

³ Importantly, most of the assemblages examined came from sites occupied primarily during cold seasons (autumn and winter); due in part to their imposing presence on the Northern landscape, such sites have commanded a disproportionate amount of archaeological attention over the past several decades.

on specialized field butchery for caching meat during the cold-weather months than during summer hunts because the impetus for hunters would have been to return to the safety of the land-fast ice as quickly as possible. The shortened processing time at kill sites meant that greater amounts of skeletal material, as well as a wider variety of both high- and low-utility elements, would have been returned to residential sites during cold-weather months.

This reliance on walrus by the ancestors of Amitturmiut likely provided a degree of food security denied to Inuit groups elsewhere in Inuit Nunangat as the Little Ice Age (approximately 13th to 19th centuries CE) intensified. Increasing sea ice caused the ‘Classic’ Thule Inuit bowhead whaling industry to largely collapse. In select regions, walrus (second in mass only to bowhead whales) may have effectively replaced the latter species as a source of ‘wealth’ in food and raw materials.

Recent-historic hunting of walrus followed much the same pattern as in pre-modern times, especially in northern Foxe Basin, where the cumulative effects of Euro-Canadian colonialism on traditional subsistence regimes took hold relatively late (see [Rasing, 2017](#)). During the breakup of land-fast ice in the spring, Amitturmiut used *umiat* to travel sometimes long distances eastward to central Foxe Basin, where walrus regularly hauled out on fields of moving ice (see [Paniaq, 1998](#)). Prior to the introduction of rifles, a harpoon (with a toggling head) would be used in tandem with a lance. A hole would be carved in the ice in which to anchor and secure the harpoon line ([Inukshuk, 1990](#)), which could be made from durable bearded seal (*Erignathus barbatus*) skin, and was coiled carefully to avoid becoming tangled during the hunt. A basking walrus would be approached slowly and quietly, harpooned, and then set upon with lance blows to either the lower abdomen (which was believed to exhaust the animal quickly) or the heart for a relatively quick kill ([Piugattuk, 1990](#)).

Today, walrus complement the modern ‘country-food’ diet of hunted and gathered resources across the parts of Inuit Nunangat where the natural distribution of walrus and traditional Inuit lands overlap ([Fig. 6.2](#)). Rifles have replaced lances as the primary killing instrument, though harpoons with metal heads are still regularly used to secure an animal after it is shot. In addition, skin and canvas sails have given way to square-stern canoes with outboard motors and recreational fishing boats generally less than 10 m in length. These modern, motor-powered boats have dramatically reduced hunting times (from days to several hours), as well as increased the haul that can be safely returned home.

Among Amitturmiut, as soon as the land-fast ice has broken up sufficiently (typically by mid-July) hunters travel east by boat to meet the moving pack ice. Great care is taken to keep noise to a minimum for fear of frightening the walrus, which can be found basking on ice floes in small groups of between two and ten individuals. Most often, a single animal is targeted and shot at the closest reasonable distance (depending upon opportunity), with the neck as the preferred location for a disabling shot. The lead boat then races to the kill site, where the animal is harpooned to prevent it being sunk and lost.

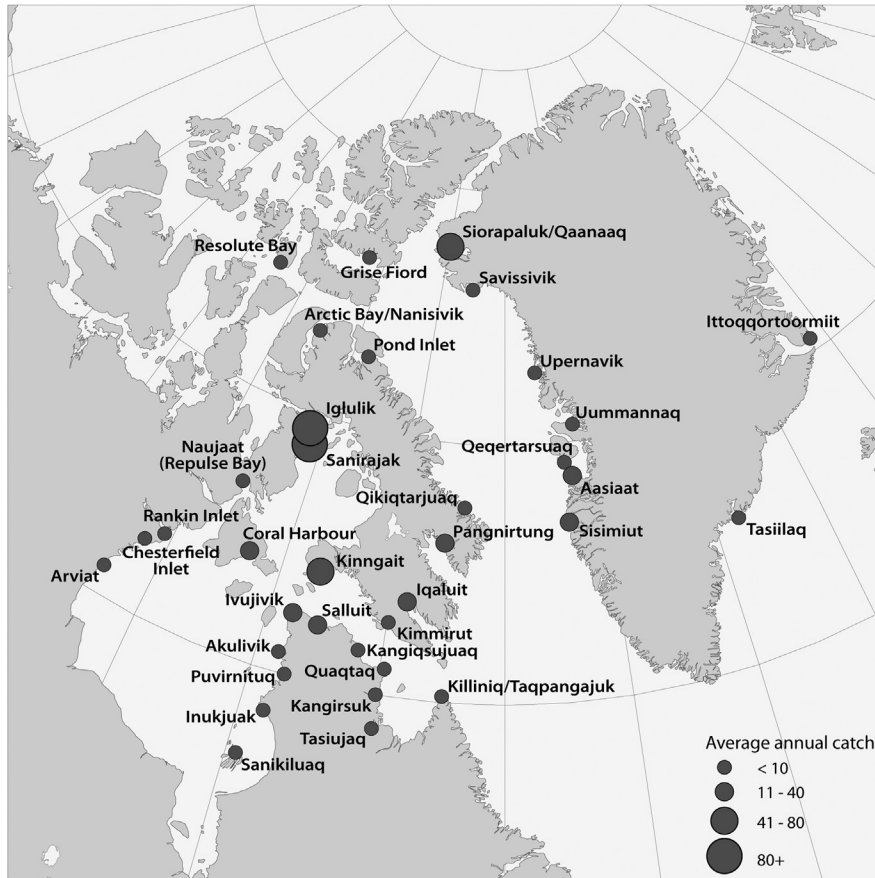


FIGURE 6.2 The extent of the contemporary subsistence walrus hunt in Inuit Nunangat, Nunavik and Greenland by average annual catch; data for Inuit Nunagat: [Priest and Usher, 2004](#) (Nunavut*, 1996/97 to 2000/01); [Brooke, 1992](#) (Nunavik, 1974 to 1991); data for Greenland: Siorapaluk/Qaanaaq, Savissivik, Upernavik, Uummannaq, Qeqertarsuaq, Aasiaat, Sisimiut ([Born et al., 2017](#); [CITES, 2018](#)), Ittoqqortoormiit and Tasiilaq ([Wiig et al., 2014](#); [CITES, 2018](#)).

* In Clyde River, the 5-year average was less than 1 but greater than 0, as a single walrus was recorded as having been harvested in 1996/97 ([Priest and Usher, 2004: 198](#)); for the purposes of this analysis, the community's 5-year harvest was 0 animals.

In the summer of 2012, [Desjardins \(2016\)](#) documented a representative Amitturmiut hunt during which a small hunting party in two small boats acquired a single adult bull walrus in an ice field approximately 75 km east of Iglulik (also known as “Iglolik”). Shot with a small-calibre hunting rifle by the crew’s only female member, the animal was then harpooned, rolled into the water and towed to a

more stable ice floe, where it was butchered over approximately six hours. The butchery process has long revolved around the production of cylindrical skin pouches of varying lengths known by Amitturmiut as *ungirlaat* (ᐃᓄᓂᓂᓂ) [sing., *ungirlaaq* (ᐃᓄᓂᓂᓂᓂ)]⁴ (see Figs. 6.3 and 6.4). The process is both systematic and time consuming, with the processing of a single walrus taking up to several hours. After processing, *ungirlaat* are loaded into boats and transported to the shore or floe-edge. Meat is almost immediately buried in loose gravel close to the shoreline (Kappianaq, 1997; Paniaq, 1998; Qamaniq, 2000). After several months, the resulting aged product known as *igunaq* (ᐃᓄᓂᓂᓂ) is dug out and feasted upon.

In addition to the six *ungirlaat* produced during the 2012 hunt, a number of other elements were brought back to the campsite for dog food, including the ribs,⁵ sternum and front limbs (rear limbs were incorporated directly into two of the *ungirlaat*). Some intestines, kidneys, liver and cranium with tusks were also returned. The heart (widely considered a delicacy by Amitturmiut) was eaten raw by the members of the crew during butchery. Though walrus stomach contents are often examined and collected, time constraints prevented the 2012 hunting party from doing so. The production of modern *ungirlaat* varies slightly depending upon the habits and interests of the hunter and his or her crew. The goal, as it likely was in premodern times, is to produce as many *ungirlaat* as possible; there is often much prebutchery debate among hunters about the best way to proceed to maximise the cacheable haul of each landed animal. Though today more of a delicacy than a seasonal staple, *igunaq* is still widely eaten in the communities of Iglulik and Sanirajak (formerly known as “Hall Beach”), and is occasionally traded to Nunavut communities where walruses are not locally available.

Hunters in more than half of the small communities of Nunavik regularly acquire walruses, with those along the coasts of Hudson Bay and Hudson Strait being most active (Stewart et al., 2014: 283–284).⁶ An 18-year (1974–91, inclusive) review of harvest data from hunters in Nunavik’s 16 communities⁷ showed the total average annual catch in the region was 72 walruses, although there was significant variation from one year to the next; for example, the total catch was only four walruses in 1978, but 174 in 1986 (Brooke, 1992: 14). This unevenness could be attributed to inclement weather, financial considerations (e.g., access to equipment and money for fuel), or even occasional outbreaks of foodborne illness attributed to raw or undercooked walrus products [walruses are considered the most susceptible of the regularly harvested marine-mammal species to trichinello-sis infestation (Proulx et al., 2002; Larrat et al., 2012)].

⁴ See Desjardins (2018a) for a detailed description of the *ungirlaat* production and caching processes.

⁵ In the past, as today, meat from the ribs could be cut away from the bones and placed within *ungirlaat* (Kappianaq, 1997), or they could be returned in sections and dried (Iqallijuq, 1999; Paniaq, 1998).

⁶ Stewart et al. (2014) have compiled available quantitative data from multiple sources on both recent-historic and contemporary Inuit walrus harvests in both Nunavik and Nunavut.

⁷ The author includes two small communities—Killiniq and its successor community Taqpanajuk—that are currently disused.

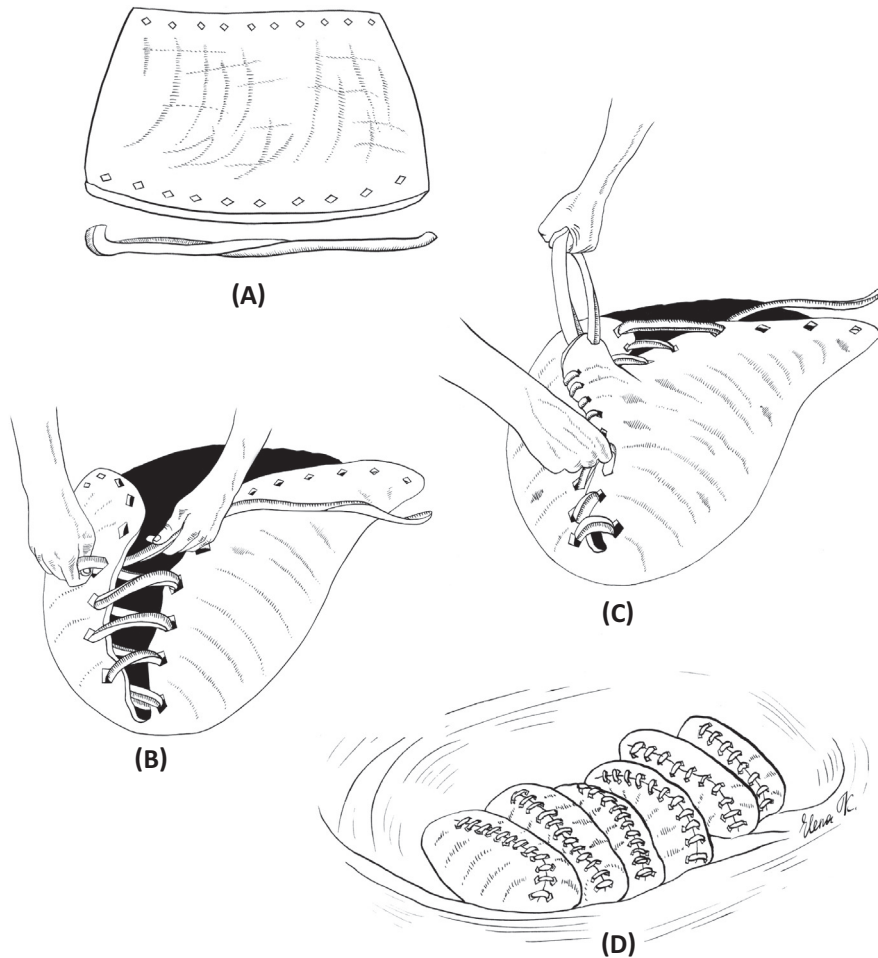


FIGURE 6.3 Typical production of an *ungirlaaq* pouch: (A) a sizable rectangle and a long, thin strip of walrus skin are cut from the animal, and the rectangle is punctured multiple times on two sides; (B) meat and select organs are placed on the interior surface of the rectangle, which is then folded over; the skin strip is woven through the punctures; (C) the weaving strip is periodically tightened to ensure the meat within the *ungirlaaq* is secure; and (D) once the hunting crew has returned to shore, *ungirlaat* are placed in a neat row within the beach gravel (laces-down for the first layer, which sits upon the permafrost) before being covered with gravel and left to age for several months. Illustration by Elena Kakoshina.

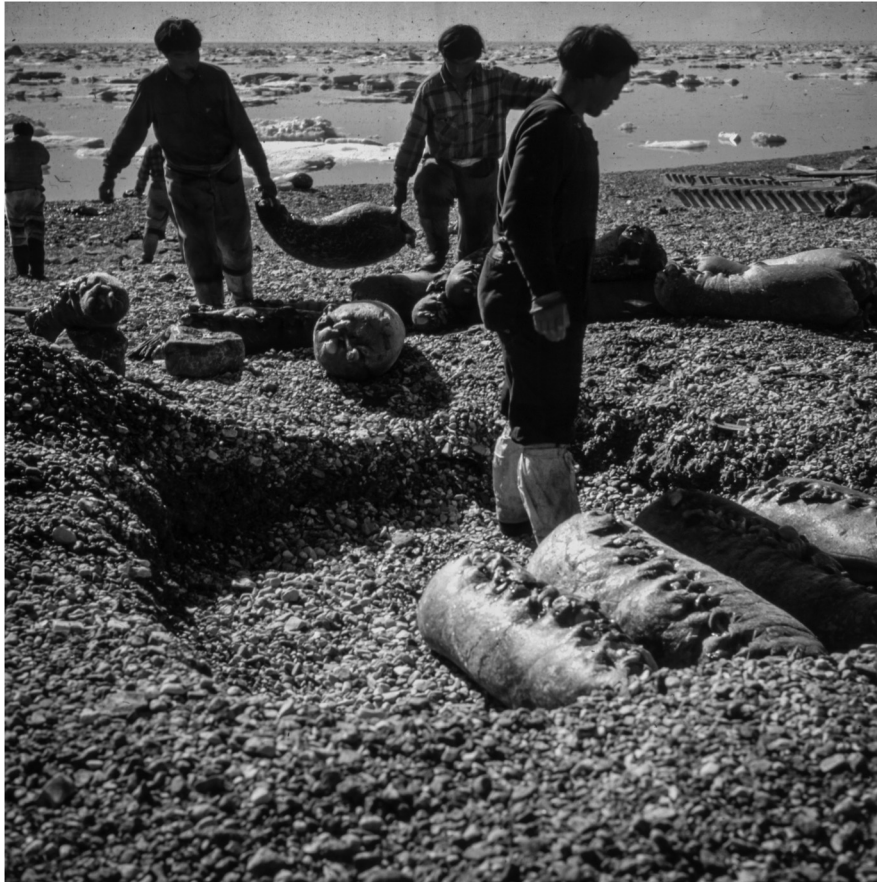


FIGURE 6.4 Amitturmiut men cache *ungirlaat* after a successful walrus hunt, northern Foxe Basin, c. 1957.

Photograph by J. Meldgaard; courtesy, National Museum of Denmark, Copenhagen.

Inuit of Nunavik and Nunavut are generally free to hunt walrus without significant restrictions.⁸ The Nunavut Wildlife Harvest Study (NWHS) (Priest and Usher, 2004) provides comprehensive quantitative data derived from hunter surveys on subsistence harvesting in all 27 Nunavut communities⁹ over a five

⁸ Some restrictions apply to individual Inuit; federal community walrus harvest quotas exist only for hunters in the Nunavut hamlets of Sanikiluaq, Coral Harbour (Salliq), Arctic Bay and Clyde River (see COSEWIC Committee on the Status of Endangered Wildlife in Canada, 2017: 43–45).

⁹ The authors included two small communities—Umingmaktok and Bathurst Inlet—that are not regularly occupied year-round.

year period (1996/97 to 2000/01).¹⁰ During the NWHS survey period the combined average annual harvest of walrus of all communities was 382 (Priest and Usher, 2004: 804), with the highest numbers by far recorded in the northern Foxe Basin Amitturmiut communities of Iglulik (an average of 152 walrus per year) and Sanirajak (95 per year). These numbers are consistent with more recent catch estimates reported to Fisheries and Oceans Canada by community Hunters and Trappers Organization/Associations (HTO's/HTA's), which quantified the total walrus subsistence harvest across in 2016/17 to be 346 animals. A remarkable 69% of the territory-wide catch was acquired by Amitturmiut, with 110 walrus hunted out of Sanirajak and 129 out of Iglulik [DFO (Fisheries and Oceans Canada), n.d., Appendix I].

Walrus hunting in Greenland

Recurring sizable polynyas in both North-East and North-West Greenland have long formed hotspots of ecological productivity similar to northern Foxe Basin, offering relatively light ice conditions and excellent benthic feeding opportunities for walrus. Such areas did not go unnoticed by the earliest Inuit occupations in Greenland (Fig. 6.1). By the 14th century CE, people of the pioneering 'Ruin Island' phase of Thule Inuit expansion into the North-East had established themselves on both sides of the North Water Polynya, stretching from northern Melville Bay to Hall Land in Greenland along central East Ellesmere Island in Nunavut, Canada (Holtved, 1954; McCullough, 1989).

In the Avanersuaq region of northern Greenland, archaeological evidence from the ten known Ruin Island sites suggests people were organised around communal hunting of large whales and walrus. Each hunting group was presumably headed by a talented *umialik* (hunting crew chief) (see Savelle, 2002). Walrus bones by NISP accounted for around 20% of the identifiable faunal assemblage at the recently-excavated Ruin Island site Nuulliit. (When artefact-production waste is included in the zooarchaeological tally, ivory comprised approximately 20% of the total number of fragments by NISP, while walrus-bone debris totalled 7%.) These results highlight the importance of walrus as a source of ivory and bone for tool production, blubber for fuel, and edible material for both Inuit and their dogs (Gotfredsen et al., 2018, see also Darwent & LeMoine, this volume).

A notable premodern Inuit site in the understudied North-East of Greenland is the aptly-named Walrus Island, situated nearby the large Sirius Water Polynya. Archaeological work at the site (2007–2008) revealed approximately 1700 stone structures (mostly caches, but also tent rings and other light shelters). Radiocarbon dates indicate the site was occupied continuously from the earliest Thule Inuit occupations beginning around 1400 CE in the region until the 19th

¹⁰ In Iqaluit, data were available for only four years (1997/98 to 2000/01).

century CE. The number and distribution of features at the site differs significantly from those at other known archaeological sites in North-East Greenland. Zooarchaeological evidence indicates that walrus remains comprised more than 50% of all bone material by NISP and were primarily associated with the numerous caches (Gotfredsen, 2010; Grønnow et al., 2011). Walrus skeletal element distribution at Walrus Island showed an abundance of cranial bones (such as mandibles, premaxillae and tusk-bearing maxillae), a pattern largely mirrored at Pingiqqalik (see Desjardins, 2018). Also present in high numbers at Walrus Island were meat- and blubber-bearing front and hind limb elements (minus flippers).

The subsistence-settlement system evolving around Walrus Island was likely characterised by the hunting of (1) ringed seals on the land-fast ice during winter; (2) intensive, communal hunting of larger marine mammals, including walruses, in and around the polynya during spring; (3) ice-edge hunting of seals and narwhals during late spring and summer and (4) hunting of caribou in the interior during summer and autumn (Gotfredsen, 2010). Walrus bone elements at the nearby winter settlement Fladstrand (Cla-06) were less common (comprising only 3% of mammal NISP) and more frequently found as the raw material for tools and decorative purposes (tusk fragments, post-canines, and bacula), thus reflecting influx of raw materials and occasional winter walrus hunting (Gotfredsen, 2010; Grønnow et al., 2011). As at Pingiqqalik, the longevity of the occupation can reasonably be attributed to the increased food security of the large-scale walrus caching regime (see Grønnow et al., 2011). Unlike in northern Foxe Basin, however, the productive social–ecological system at Walrus Island and nearby sites appears to have collapsed when the local walrus population declined during extremely cold episodes of the 18th and 19th centuries (associated with the Little Ice Age). By the mid-19 century, North-East Greenland had been abandoned altogether by Inuit (Grønnow et al., 2011).

A recent-historic Inughuit¹¹ site of particular importance is Inersussat on Saunders Island, North-West Greenland. The site was inhabited in the 19th and early 20th centuries and is known today from the 1903 visit by the Literary Greenland Expedition. Historical sources reveal that many snow houses were present, indicating winter occupation. Still, most of the archaeological features that have left clear traces are from spring, summer and autumn settlements (primarily tent rings and rock shelters) (Grønnow et al., 2017). The two walrus-hunting camps (Walrus Island and Inersussat) show great similarity in their walrus-bone element distribution despite the great geographic distance between the two (approximately 1350 km) and the differences in site age (Fig. 6.5).¹² Walruses were likely hunted at both sites during

¹¹ The first Europeans named people in the Avanersuaq ‘Polar Eskimos’; locals, however, referred to themselves as Inughuit.

¹² MNE (Minimum Number of Elements) denotes the number of skeletal elements used for calculations of the relative distribution of walrus body parts. The %MAU (Minimum Animal Unit) (Lyman, 1996) calculations take into consideration that different skeletal elements in a walrus skeleton are represented in different numbers, e.g., by two scapulae (one left and one right) but 30 ribs (15 left and 15 right).

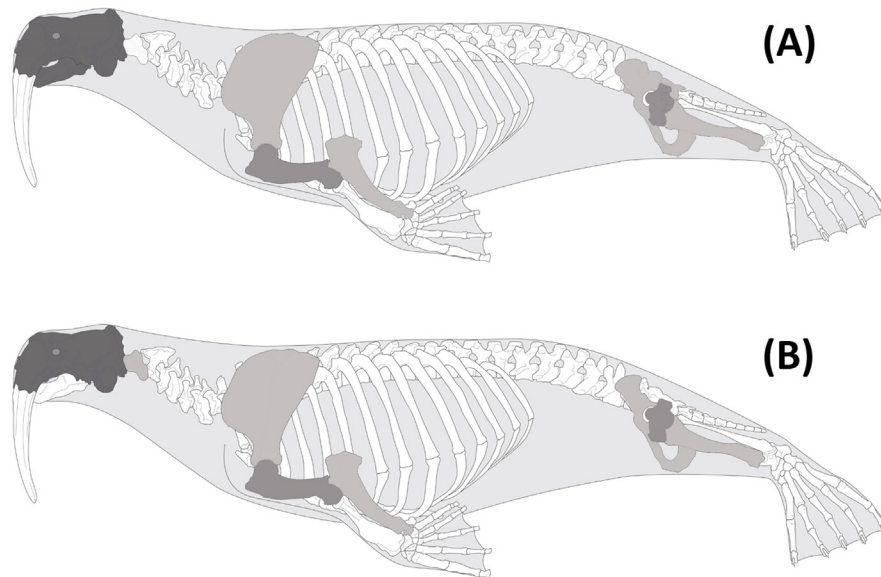


FIGURE 6.5 Walrus element frequency (as %MAU) from (A) Walrus Island (MNE = 294) and (B) Saunders Island (MNE = 302), showing a clear dominance of cranial and high-utility elements. Dark grey >75%; medium grey >50%; light grey >25%, white <25%.

(A) Data from Grønnow et al. (2011) and (B) Gottfredsen unpublished. Image by M. Coutureau, archaozoology.org.

winter and early-spring when the land- and seascape were still covered in snow and ice. This would have allowed dog teams to transport large chunks of partially-butchered walrus back to residential camps. Numerous accounts of walrus hunting in leads and cracks in ice formed near Saunders Island attest to this practice, although walrus were also known to gather offshore in the region during the open-water period from October to November (Holtved, 1935, 1936). In winter and early spring most hunting took place on the thin-ice (Grønnow, 2016; Born et al., 2017). When the weather was stable and the land-fast ice had light snow-cover, hunters walked on the thin-ice to acquire walrus by harpooning them when the walrus broke through the ice to create rough breathing holes.¹³

The Danish ethnographer Erik Holtved, who excavated Inuit settlements and lived in North-West Greenland during the 1930s, offered a vivid description of a thin-ice walrus-hunting trip in the mid-20th century. Hunters left their dog teams and sleds at the boundary of thin-ice, and then quietly proceeded in single-file on

¹³ Walrus are able to break through ice exceeding 20 cm in thickness (Fay, 1982).

the newly-formed ice (no more than 7 or 8 cm thick) (Holtved, 1967). Upon sighting a walrus, the hunters approached quietly and thrust their harpoons into the animal, securing their long lines to the ice by the means of an ice chisel and a lance. The wounded animal, anchored to the ice, was unable to escape. Hunters then attacked the animal with lances (Holtved, 1967) which today have been almost entirely replaced by rifles (Born et al., 2017: 147ff). Such thin-ice hunting requires significant patience, timing, skill and cooperation. The hunter whose line was the strongest was considered the harpooner, and it was he who received the choicest share of the animal (typically the head and heart) (Holtved, 1967: 100–103). The extent to which thin-ice hunting was performed varied significantly between regions and years, depending upon local weather conditions. The method was considered a ‘signature’ form of Greenlandic Inuit walrus hunting and was practised from the 19th century CE until around a generation ago.

Faunal remains from both Walrus Island and Inersussat indicate that premodern Inuit regularly hunted walruses of both sexes and across all age groups. This was also broadly true for both residents of the Ruin Island site Nuulliit, as well as Paleo-Inuit assemblages from central West Greenland (Gotfredsen and Møbjerg, 2004; Gotfredsen et al., 2018). Despite this, selective hunting may have been carried out on a smaller scale due to a number of important factors: (1) seasonal changes in walrus behaviour (the sexes are segregated for long periods of each year); (2) accessibility and (3) selection by Inuit for traits unique to sex and/or age. (For example, females were of greater economic value because they yield relatively more blubber and have tusks considered better suited for toolmaking [Born et al. 1994: 22ff]).

Information on historic and premodern Inuit walrus hunting in Greenland can be obtained from descriptions by both explorers and colonial administrators. Although often anecdotal, such accounts provide a generally reliable sense of the scale of hunting at particular points in time, as well as the locations of prime hunting locales, and preferred methods.¹⁴ Quantitative information is available in the Hunters List of Game (HLG), a Danish compendium of harvest data beginning in the 1860’s CE in West Greenland. However, catches from North-West Greenland are only reported occasionally to HLG until the 1950’s (Andersen et al., 2018). Zooarchaeological assemblages dating to the 19th and early 20th centuries provide additional insights into walrus hunting practices in Greenland during recent-historic times.

Reliable modern catch statistics were not available until the implementation of the *Piniarneq*, a wildlife harvest recording system begun in 1993. Under this system, it is mandatory that each harvested walrus be documented on a ‘Special Reporting Form’ (Andersen et al., 2018; Born et al., 2017: 35). Over the past two

¹⁴ Overviews of historic walrus hunting for various regions of Greenland are found in Grønnow (2016) (for the northwest), Born et al. (1994) (for the western coast) and Born et al. (1997) and Sandell and Sandell (1991) (for the eastern coast).

decades, good qualitative information has been collected through one-on-one interviews with, and surveys of, Greenlandic Inuit walrus hunters. In a 2010 study by [Born et al. \(2017\)](#), surveys recording Local Ecological Knowledge (LEK) of 76 experienced hunters in walrus-hunting regions between Maniitsoq (central West Greenland) and Siorapaluk (North-West Greenland) demonstrated conclusively that walrus remain highly important in both West and North-West Greenland. Walrus products are regularly and widely consumed by Inuit and their dog teams, dogs being especially important to the subsistence hunting economies of North-West Greenland. Walrus meat, hides and tusks are sold on local open markets known as *Kalaaliaraq* (Danish: *Brættet*), as well as shared via traditional exchange networks ([Born et al., 2017](#): 41ff), as is common in Inuit Nunangat.

Generally, present-day walrus-hunting patterns in Greenland are distinct from those practised by historic and premodern Greenlandic Inuit. Since the introduction of hunting quotas for walrus in 2006, harvests tend to be skewed towards large adult males due to the greater amounts of meat available to feed dog teams. Unlike in Inuit Nunangat, dog teams remain in wide use across Greenland.¹⁵ A decline in walrus hunting has been observed since the early 1990's, particularly following the introduction of harvest quotas [Born et al. \(2017\)](#) has attributed the long-term decline to a number of factors, including:

1. Walrus becoming a 'secondary' prey, or 'by-catch' as walrus hunts are combined with hunts of more economically 'valuable' resources, such as beluga whales (*Delphinapterus leucas*), narwhals (*Monodon monoceros*) and polar bears (*Ursus maritimus*) (also subject to quotas);
2. General decrease in market demand for walrus products;
3. Transition over time from full-time hunting to wage-earning employment (in industries such as fishing) and
4. Effects of modern anthropogenic climate change ([Born et al., 2017](#)).

Climate change is resulting in unstable ice and unpredictable weather conditions, thereby changing the amount of time walrus spend at traditional hunting locales and hence access by Inuit to walrus (see [Desjardins and Jordan, 2019](#)). In central West Greenland, a clear decrease in walrus hunting in recent years can be attributed to a reduction in the number of dog teams, although the hunt still offers cash income from the sale of trophy skulls, tusks and bacula ([Born et al., 2017](#): 41ff).

The decrease in walrus caught across Greenland is recorded in the *Piniarneq* (from 1993 to 2012), as are clear differences in the significance of walrus hunting among communities in North-West and West Greenland. In Qaanaaq (North-West Greenland) 46 full-time hunters (from a population of around 596) hunted 120 walrus in 1993. Between 1995 and 2006, the annual harvest varied

¹⁵ In addition to their overall robustness, adult males provide superior cranial trophies with longer and fuller tusks; however, some Greenlandic Inuit hunters still prefer younger males and/or adult females due to their more tender meat ([Born et al., 2017](#): 47, 81).

between 30 and 70 walruses, while from 2006 to 2012, the total annual catch ranged between 5 and 20. Similarly, in Sisimiut (West Greenland) 101 full-time hunters (from approximately 5000 total residents) hunted 75 walruses in 1993; in the following years, the average annual catch dropped to well below 100 (Born et al., 2017: 44f). Throughout the 1980's and 1990's, hunters from two of South-East Greenland's communities (Ittoqqortoormiit and Tasilaq) harvested between 20 and 30 walruses annually (Born et al., 1997).

In North-West Greenland, the primary walrus hunting season runs from January to June, and again from October to November (Born et al., 2017: 40). As in Inuit Nunangat, hunting in Greenland is carried out during warm-weather months on the moving pack ice and in open water during early autumn. Historically walruses were also taken at terrestrial haul-out sites; a practice now forbidden by law throughout Greenland.¹⁶ In cold-weather months, most hunting used to take place on the thin-ice. Thin-ice hunting is rarely practised today, and what remains is under pressure from climate change. Warmer temperatures and increased storminess has led to shorter periods of time while the ice is sufficiently stable for hunting, and increased snowfall can lead to 'squeaking' while stalking walruses, warning them of the hunters' arrival (Born et al., 2017: 76).

Andersen et al. (2018) documented a 2015 summer hunt in Inglefield Land, North-West Greenland. A herd of walruses on the pack ice was approached quietly by boat. At the right moment and from the right distance, the younger of the two hunters jumped suddenly onto the ice, harpooned and then shot a large male walrus. Having landed the animal, this hunter (also the owner of the boat) received the head, tusks and baculum. During the butchery process, both hunters scrutinised and sampled the stomach contents, which consisted mainly of mussels. The stomach contents, along with the heart, were tasted and collected for later consumption. The remainder of the walrus was cut into easily-transportable slabs of flippers, ribs, back, etc., and stacked on the beach where the butchering took place. To lighten the amount of meat and blubber to be transported back to the hunters' home community of Qaanaaq, two *ungirlaat* – created in much the same way as those produced by Amitturmiut – were created. One with meat and blubber that was immediately buried under a heap of rocks, and another made at the hunters' cabin with liver and kidneys, which was also left under rocks to age. (Unlike in northern Foxe Basin, the consumption of *igunaq* is reserved mainly for times of celebration [Andersen et al., 2018]).¹⁷

¹⁶ Several terrestrial haul-outs were known to be in use in premodern times up to the 1950's in the West and North-West Greenland—as well as in North-East Greenland, where only two remain today; however, recently, walruses have started using other haul-out places in the North-East (Born et al., 1994, 1997; Born, 2012).

¹⁷ According to contemporary Greenland hunting regulations, all edible walrus products must be brought to the home community, or alternatively cached in meat caches (Anonymous, 2006). This makes nonsubsistence trophy-hunting for tusks or complete skulls illegal. This is broadly in keeping with traditional Inuit provisions for using all or most of the walrus.

Hunting strategies in East Greenland differed significantly from those in the West and North-West. In recent-historic times, walrus along the East Greenland coast were harvested in large numbers by European sealers, hunters and trappers (see Gjertz, this volume). Due in part to the commercially-driven historic decimation of the stock, contemporary hunting is of less importance for local Inuit communities than for those elsewhere in Greenland (hunting being somewhat more commonly practised in Ittoqqortoormiit than in Tasiilaq; walrus in these communities were primarily hunted from the floe-edge from February to June [Sandell and Sandell, 1991: 108]). Today, the hunt is carried out from May to September, with (typically) adult male walrus shot in the head, neck or back from small dinghies with outboard motors. Harpoons are rarely used, but a large hook is applied to retrieve sunken walrus from shallow waters (see Born et al., 1997: 40; Born, 2012).

Walrus and Inuit cosmology

In Inuit cosmology, as in that of many Indigenous societies across the circumpolar Arctic, personhood is attributed to many nonhuman animals; especially those figuring in the hunter–prey relationship (see Desjardins, 2017; Hill, 2011b; Laugrand and Oosten, 2014; Nuttall, 2000). This worldview was expressed clearly and succinctly by Knud Rasmussen: “*In former times animals in human form were common [...] In olden times, too, everybody could easily turn into animals, and until quite recently shamans have had the same powers*” (1932: 35). Beyond the obvious dietary significance of walrus and the utilitarian value of their ivory,¹⁸ walrus also had, and continue to have, tremendous symbolic and cosmologic importance to Inuit and Tuniit before them (see Hill, 2017 for a thorough discussion of the symbolic significance of walrus for Bering Strait Indigenous peoples).

One way in which the bond between human and nonhuman was solidified and actuated was through the wearing of clothing either made from, or made to look like, specific prey species including walrus (Desjardins, 2017). Exemplary archaeological finds from Nuullit that may partly reflect this worldview include fragments of three separate gut–skin *annuraat* (ᐱᓄᓄᓄᓄ; waterproof coats) dating to the 14th century CE (Fig. 6.6), the oldest-known such examples recovered in the Arctic. Elongated wedges are sewn into both the front and the back of the

¹⁸ It is increasingly clear premodern Inuit peoples in regions where walrus were locally available made abundant use of ivory. Walrus skeletal element frequencies at Walrus Island and Pingiqqalik showed strong evidence of a focus on tusk extraction and ivory harvesting; both sites featured an abundance of cranial bones, such as mandibles, premaxillae and tusk-bearing maxillae. Desjardins (2013) has emphasised the importance of considering the desirability of ivory in any application of a food/meat utility index for walrus.

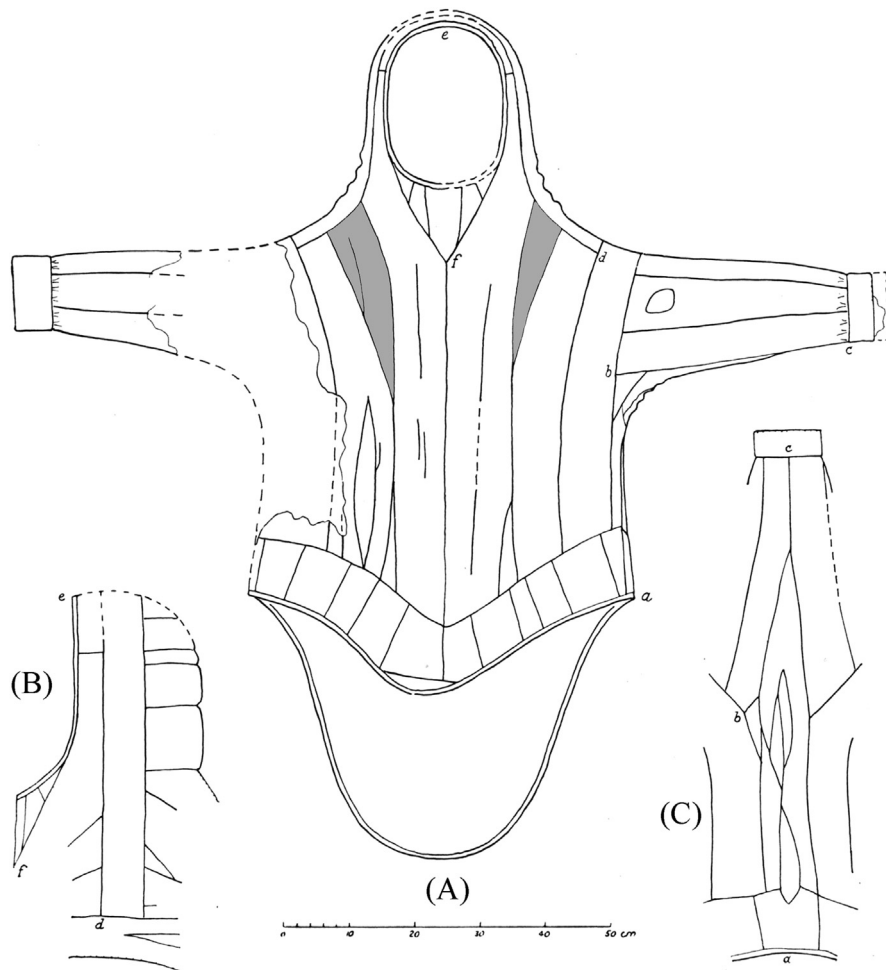


FIGURE 6.6 Multiple views (A–C) of one of three well-preserved gut–skin *annuraat* recovered from House 28 of the Ruin Island site *Nuullit*. The two curved, elongated wedges on (shaded here for illustration) are interpreted as walrus tusks.

Modified from Holtved (1954). ©Museum Tusulanum Press. Illustration: Erik Holtved.

coat (Holtved, 1954: Figs. 49–54), likely representing walrus tusks extending lengthwise down each side of the garment (Schmidt et al., 2013). In wearing such clothing, a hunter was protected not only from the frigid water but also assumed the strength of the walrus, as well as its ability to hold its breath underwater for extended periods.

A total of 116 recorded traditional Greenlandic Inuit accounts¹⁹ from the 18th to early 20th centuries feature walrus in diverse and meaningful ways: as real beings-in-the-world, as symbols of particular emotions and social situations, and as spiritual collaborators or opponents due to their fierce and sometimes unpredictable behaviour during the hunt (see [Gotfredsen et al., 2018](#)). Indeed, walrus hunting has long been considered by many Inuit as a particularly dangerous activity requiring great skill, endurance, physical strength and courage. According to the esteemed late Amitturmiut hunter and elder Piugattuk, “[w]alrus are the most ferocious marine animals” (1990).

The premodern association between walrus and the Inuit afterlife/underworld²⁰ is manifest in several ways. Like all marine mammals, walrus were traditionally believed to have been created from the severed fingers of the shadowy sea-woman *SednalSenna* (ሩ፡፫) (see [Laugrand and Oosten, 2010](#): 108–109). They could serve as important and powerful *tuurngait* (ᐅᐅᐅᐅᐅᐅ), helping spirits whose perspectives, physical forms or characteristics, could be assumed by Inuit shamans for a wide variety of purposes (see [Laugrand and Oosten, 2010](#): 71–72; [Sonne, 2004a](#): IDs 126, 152, 160, 279, 340, 382, 1850).²¹ The notion that the human and nonhuman soul is returning to a new body after death (Nuttall, 1994) may still manifest itself in some present-day communities across Inuit Nunangat and Greenland. In this sense, game animals, such as walrus, can be perceived by hunters as a kind of renewable resource ([Fienup-Riordan, 2000](#)). One widely held belief is the premodern concept that if afforded respect, prey animals give themselves willingly to hunters. Conversely, when taboos are broken or respect is withheld, game may take revenge by making themselves scarce in the future ([Rosing, 1998](#); [Laugrand and Oosten, 2014](#)). In premodern times, this concept may have resulted in self-regulatory hunting practices guided by strict and sometimes idiosyncratic taboos and rituals. [Andersen et al. \(2018\)](#) suggest that this perception of reciprocity, respect and the concept of hunting sustainability still exists among today’s subsistence walrus-hunting communities.

¹⁹ A comprehensive archive of 2280 online records compiled in ‘Sagn & Myter’, as well as an extensive introduction to this database, is available in [Sonne \(2004a,b\)](#).

²⁰ Amitturmiut still maintains a tradition—known widely in Nunavut—that the northern lights are the manifestation of spirits playing a ball game with walrus heads ([Arnatsiaq, 1990](#); [Niviattian Aqatsiaq, 1990](#)).

²¹ Hunters also engaged in symbolically meaningful activities with walrus during and after the hunt. As with small seals, water would sometimes be poured into a recently-hunted walrus’ mouth, a gesture meant to give thanks to the animal ([Kappianaq, 1990](#)), presumably thirsty not only because of the rigors of the hunt but also because it lived its life in salt water ([Laugrand and Oosten, 2010](#): 83).

Conclusion

For more than half a millennium, Inuit in Inuit Nunangat and Greenland have looked to walrus to stave off food insecurity, build their toolkits and enrich their symbolic lives. In examining Inuit–walrus relationships over time, we rely not only on a rich archaeological record, but also on a still-vibrant hunting tradition. There is invaluable traditional knowledge about walrus use by Inuit in the recent-historic and more distant past. We believe long-term Inuit–walrus relationships have the capacity to inform on hunter–gatherer resilience in response to changing climates, with sites such as Walrus Island and Pingiqqalik exemplifying food storage strategies likely developed in direct response to the Little Ice Age climate change episode.

For many modern Inuit communities, walrus products remain both economically and culturally important, despite the overall decline of country-food consumption seen in Indigenous societies across the circumpolar Arctic. As the only surviving species in their biological family, walrus have a unique morphology that sets them apart from other species regularly encountered by Inuit. Their great bulk, bold tusks and general gregariousness have likely contributed over time to a coequal symbolic importance attributed by Inuit to the species. Walrus often feature prominently as distinct beings with agency in modern Inuit art, a testament to their premodern status as nonhuman persons imbued with culture, emotions and individuality.

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