# **Archaeological Survey**

in the alpine zone of the Buksefjord region (Nuuk Municipality)

2014



by Volker Neubeck and Clemens Pasda (University of Jena)

#### Introduction

In the past decade alpine ice patches have been investigated systematically in Alaska (Vanderhoek et al. 2012), Canada (Andrews et al. 2012a; Hare et al. 2012), Scandinavia (Callanan 2012) and Central Europe (Hafner 2012; Rogers et al. 2014). Beside scarce human remains (Dickson / Mudie 2008; Richards et al. 2008), this research resulted in a diverse material record ranging from animal remains (Galloway et al. 2012) to organic artefacts (Alix et al. 2012; Callanan 2013; Helwig et al. 2014; Lee 2012; Nesje et al. 2012; Vedeler / Jørgensen 2013; ). Beside spectacular preservation, these finds are important for molecular biology (eg. Kuhn et al. 2010; Letts et al. 2012) and climate research (eg. Reckin 2013) also. Most ice patch sites in North America and Scandinavia are connected with caribou hunting as caribou use snow and ice patches during the height of the summer (Andrews et al. 2012a, 4; Hare et al. 2004, 262). Therefore ice patches were attractive focal places for hunters (Andrews et al. 2012b, 25; Greer / Strand 2012, 141).

In Greenland, which is the easternmost habitat of the barren-ground caribou (Rangifer tarandus groenlandicus), archaeological research on alpine ice patches has never been done systematically as archaeological fieldwork in the inland is restricted to the valleys, plains and low-laying lakes (eg. Grønnow et al. 1983; Odgard 2007; Pasda 2014). Also, it is difficult to take recent ice patches as evidence of the fossil record as the Holocene history of the ice cover was very dynamic: the inland ice retreated in the late Weichselian and early Holocene to create after c. 7500 BC the ice-free zone as known today (Larsen et al. 2014, 321). Maybe around 6000 BC the ice lobe readvanced, eg. to the middle of Kangerluarsunguup Tasersua (Weidick et al. 2012, fig. 3). However, during the Holocene Thermal Maximum (5000-4500 BC) the inland ice was behind its recent position (Bennike / Sparrenbom 2007; Weidick et al. 2012, 12), eg. 15-20km for the Jakobshavn Isbræ (Weidick /Bennike 2007, 42) or c. 10km in the Nuuk region (Weidick 1996, 260, fig. 21.4). In that time period local glaciers have disappeared or retreated to positions to their present-day margins (Kelly / Lowell 2009). After 4500 BC, in the Neoglacial, the inland ice readvanced and local ice caps and other types of glaciers were formed (Bennike / Sparrenbom 2007). In the Nuuk region the inland ice remained behind its present position as late as c. 200 BC-AD 1600, maybe with a local advance 2000 years ago (Weidick et al. 2012, 57). In the Medieval Warm Period (AD 800-1200), relative sea level was several meters below today in the inner most part of the Ameralik fjord (Weidick 1996, fig. 21.5; Weidick et al. 2012, 15). In the Little Ice Age, which started in AD 1200-1400 (Weidick et al. 2012, 55), glaciers began to grow but the inland ice and the local glaciers reached their maximum as late as AD 1750 and AD 1890-1900 (Bennike / Sparrenbom 2007; Kelly / Lowell 2009; Weidick / Bennike 2007, 42). After AD 1900 the ice retreated (Bennike / Sparrenbom 2007; Kelly / Lowell 2009), sometimes 1-3km behind its neoglacial maximum (Weidick / Bennike 2007; Weidick et al. 2012, 48-49). Therefore, it remains difficult to estimate presence and extension of ice patches and the presence of local snow patches in prehistoric, Norse and Thule times.

However, in Greenland animal remains are preserved by glaciers (eg. Bennike / Andreasen 2005, 306-307) and the alpine area has been used by caribou hunters. This is confirmed by a caribou-hunting site which was found by Jens Rosing (1956; 1958; 1988; Nellemann 1955; 1969-70; 1970) on a 1000m high mountain top southwest of Itinnera. Despite not being a large hunting-drive (Pasda 2011, 79), this site is exceptional due to the preservation of turf placed on top of stone-built inussuit and their radiometric dating into an earlier part of the Thule period (Gulløv 1997, 344-345).

As knowledge on archaeological sites in the alpine area of Greenland was restricted to this site, some kind of pioneer project was initiated to investigate the archaeological potential of the mountainous area above a well-known caribou hunting area. For two field seasons in 2014 and 2015 this project was funded by the Deutsche Forschungsgemeinschaft (projectno. PA527/12-1). The chosen region was the area around Kangerluarsunngup Tasersua in the Nuuk Municipality (fig. 1). This region was chosen as many, low-laying archaeological sites from Paleo-Eskimo, Norse, Thule and colonial times are surrounded by mountain chains >1000m asl. with glaciers and ice patches. Here, intensive fieldwork was done by Hans Kapel (1993) to preserve sites which were threatened by damming the lake for hydroelectric power. This investigation resulted in more than 50 archaeological sites, among them five from Paleo-Eskimo times and few indications of Norse presence (Kapel 1993, 91-92). Most sites derive from the last 400 years (Kapel 1993, 92): by radiocarbon dating the earliest evidence of Thule presence is AD 1650 but colonial and recent sites predominate. This late Thule/colonial use of the area contrasts historic sources (Kapel 1993), eg. the lake is not present on the map from 1776 from Egil Thorhallesen (Weidick et al. 2012, fig. 10) and appears first on the map of Samuel Kleinschmidt, which was drawn before 1859, but remains blank in its surroundings. The glaciated mountains southwest of Amitsorsuag, but not the lake itself, are indicated in the end of the 19<sup>th</sup> century for the first time (Jensen 1889, Tav. X).

For the 2014 field season the now inundated, former summer camp Oqaatsut nunaqarfiat (63V2-IV-21) was chosen to start the survey to follow the route of recent caribou hunters north to the eastern end of Amitsorsuaq (Kapel 1993, fig. 57). For the first part of the survey this inland lake was chosen as a base to explore the alpine areas to the north (Amitsorsuup Qulaa) and south (point 1500, point 1290) as maps and satellite images indicated glaciers as well as ice and snow patches here. The second part of the survey should be made at Qinnguusaq, some kilometers west, around the large glacier east of point 1300. Due to support by *Nukissiorfiit* entry to and exit from the survey area was unproblematic. The survey was done by four persons on foot with three tents and supplies for 18 days. Members of the survey team were:

- -Volker Neubeck (archaeologist, University of Jena),
- -Clemens Pasda (archaeologist, University of Jena),
- -Florian Pasda (privately funded guest, Jena),
- -Paul Pasda (privately funded guest, Jena).

For safety reasons a gun and a satellite phone were taken. During the survey geographic coordinates have been taken by hand-held GPS (*Garmin Foretrex 401*). Rough sketches of caribou hunting sites were made by CP by estimating distances and drawing of contour lines to characterize topography. In contrast, distances between tent houses of the summer camp (fig. 45) were measured by CP by counting steps and direction by compass (*Recta DS 50G*). Most hunters' beds and one tent house were drawn in detail by VN and CP in scale 1:100 with a measuring rule and a tape measure. Nearly all structures have been photographed with an analog (CP) and a digital SLR camera (VN). Artefacts associated with structures were recorded, rarely photographed, but left within the site. In two occasions artefacts were found outside of an archaeological context – two stone artefacts on the beach of Kangerluarsunngup Tasersua, a wooden artifact north of Amitsorsuaq. These artefacts were taken, labeled and given to the Greenland National Museum & Archive before leaving.

#### **Results**

In general, during fieldwork only 3-5 living caribou were seen and tracks were from few animals only. This may be connected with hot temperatures as caribou were supposed to be more towards the inland ice this summer (oral inf. J. Bjerge, 2014). Of course, it is unknown if this observation represents a typical situation but from a hunters point of view it makes no sense to walk up high into the mountains when nearly no caribou are present here. In total, 63 sites have been registered. Around Amitsorsuaq some new sites have been found and known localities have been mapped (fig. 1). Many new sites have been found on the northern slope of Kangerluarsunngup Tasersua as well as around the glacier which drains into the western end of this lake.

No artefacts and sites have been found near snow fields and ice patches where access was/is difficult for humans and/or caribou. In contrast, if access is easy, caribou tracks, dung and fur were seen in the snow fields. In few alpine snow fields caribou bones, cartridges and human waste indicate (recent) human hunting but no archaeological structures have been found. Stone-built caribou hunting structures have been found only in high valleys and on passes which did not end as a blind alley. These hunting sites were small (by number of structures) and not necessarily connected with presence of snow fields. In the high mountains presence of few hunters' beds and few used rock shelters, both scattered widely, indicate that not large groups but few people, like few companions or a couple, used the alpine area for short stays only. Therefore, large scale drive hunting / ambush tactics were not practiced in the high mountains.

On the shores of Kangerluarsunngup Tasersua no hunting drives and only few shooting blinds were known (Kapel 1993, 92). In contrast, in 2014 many small and large covert systems have been found. These covert systems are present in mid-elevation and on the upper end of the slope. This may indicate caribou hunting by a large group of cooperating hunters walking uphill from the lake shore.

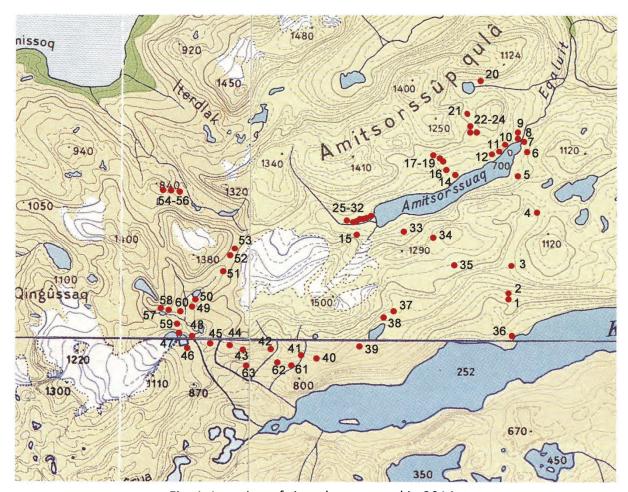


Fig. 1: Location of sites documented in 2014.

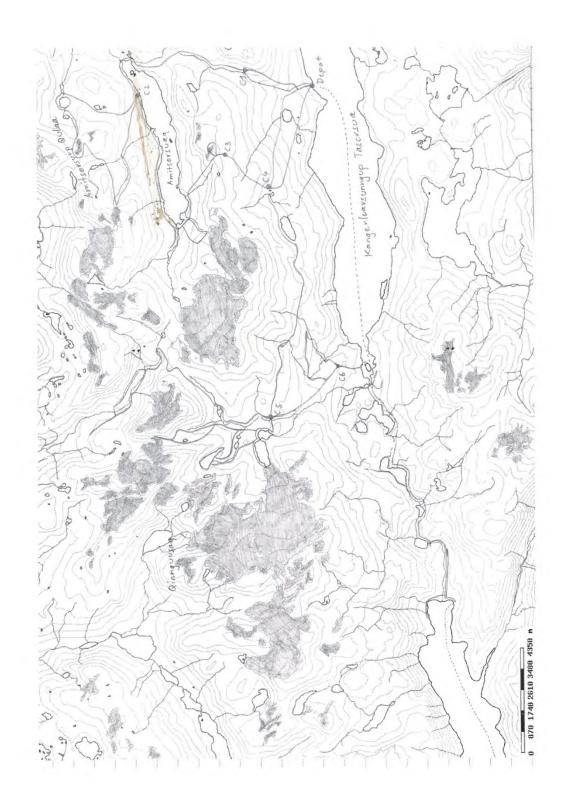


Fig. 2: Print of 1.100.000 map from Nunagis.gl used during the survey 2014 (grey: glaciers, ice and snow patches, with survey route and camps C1-C6).

#### **Itinerary**

### 13<sup>th</sup> July 2014

Travel by train from Jena to Copenhagen.

### 14<sup>th</sup> July 2014

Flight from Copenhagen via Kangerlussaq to Nuuk. In Nuuk sorting of food which was sent in advance to the NKA, buying food and equipment.

## 15<sup>th</sup> July 2014

Buying equipment and cartridges, loaning the gun from the NKA, packing the rucksacks and food bags. In the evening Mikkel Myrup and his wife invited us for coffee and tea.

# 16<sup>th</sup> July 2014

Leaving Nuuk with *Arctic Boat Charter* at 0900. Arrival at the pier in Buksefjord at 1100. Lunch at the powerplant. Introduction in the hydroelectric power station by Jens Bjerge. Jens drove the team (fig. 3: left) with equipment to the end of the gravel road and with the boat to Oqaatsut nunagarfiat (fig. 3: right). Here, food was left 20m above lake shore.



Fig. 3: Refueling at the powerplant (photo by VN) and farewell to the boat.

At 1430 the team started to walk north beside the creek running into the lake (fig. 4). A hunters' bed (site 1) and an inussuk (site 2) was found. Camp 1 (N64°01'40,3"-W050°30'01,9"-700m) was established at 1700 to register a caribou-hunting site (site 3).



Fig. 4: Kangerluarsunngup Tasersua in background (from N) with PP and FP on the ascent. Oquatsut nunagarfiat is situated below the lowest point of the green ridge in foreground.

# 17<sup>th</sup> July 2014

Camp 1 was left at 0800 to follow the valley leading to the easternmost end of Amitsorsuaq. Two inussuit (sites 4, 5), a hunters' bed (site 6) and a caribou hunting drive (site 7) were registered before crossing the outflow of Amitsorsuaq (fig. 5). Crossing involved careful wading in thigh-deep water but hot weather made that a pleasant break.



Fig. 5: Site 7 – structure 1 (from NE) with route used to cross the outflow of Amitsorsuaq (photo by VN).

On the other side of the outflow a recent camp (site 8), another small caribou hunting drive site 9) and a hunters' bed (site 10) were registered. At 1630 tent houses were found. The

decision was made not to head into the alpine area but to register sites at lower elevation also, but without making precise mapping of single structures. Therefore, Camp 2 (N64°03′45,2″-W050°32′46,8″-700m) was established to register site 11 on the next morning.

## 18<sup>th</sup> July 2014

At 0800 VN and CP left Camp 2 to register the small colonial summer camp (site 11). After returning to Camp 2 VN, FP and CP left to approach their first ice patch south of the western end of Amitsorsuaq. On the northern shore of Amitsorsuaq a meat cache (site 13), two rock shelters (site 13) and a hearth (site 14) were found. After the easy crossing of the inflow at the westernmost end of Amitsorsuaq by stepping from stone to stone the team went to the front of the glacier north of point 1456. Very early it became obvious that no caribou will take this route as approaching the small lake in front of the glacier (fig. 6) involved careful climbing through lichen-free, car-sized boulders. After reaching the glacier front a more western direction was chosen for the descent to investigate snow patches and grass-covered areas on the slope. Here, caribou tracks and dung as well as a high-laying meat cache (site 15) were found. Camp 2 was reached at 1830.



Fig. 6: Meltwater lake in front of the glacier at c. 1100m asl. (from N).

# 19<sup>th</sup> July 2014

At 0800 all members left Camp 2 to approach the snow fields which are situated in a northwestern and northern direction. In the valley northwest of Camp 2 a wooden artifact was found on the surface (fig. 7). In that valley, on higher areas a shooting blind (site 17), a hunters' bed (site 18), a meat cache (site 18) and a tent house (site 19) were found. While registration the latter FP and PP returned to Camp 2.



Fig. 7: locality 16 (from E).

VN and CP walked to the snow fields to the northwest. Here, 15m below a snowfield (at N64°03′41,8″-W050°36′23,7″-900m) two caribou crania with antler and a cartridge *Norma 30-06* were found. Afterwards a route in a northeastern direction uphill, to the Amitsorsuup Qulaa (fig. 8) was taken. Here, at c. 1100m asl., snow fields were checked: for the first time snow fields with many caribou tracks, dung, fur, tracks of song birds as well as few cartridges were present. In contrast to the vast boulder fields in front of the glacier surveyed yesterday, it was obvious that this easily accessible pass was and is used heavily by caribou. However, a stone-built site was found in lower elevation only, an inussuk (site 20), near the lake in the east. On the way back to Camp 2 a high plateau was surveyed and two hunting sites with shooting blinds (sites 21 and 22), a meat cache (site 23) and a single shooting blind (site 24) were found. Camp 2 was reached at 1800.



Fig. 8: View from Amitsorsuup Qulaa (towards W).

### 20<sup>th</sup> July 2014

At 0850 the team left Camp 2 with all equipment to store backpacks at the western inflow of Amitsorsuaq. To complete data of sites on lower elevation, the northern side of the river (fig. 9) was surveyed to find five rock shelters/hunters' beds (sites 26, 27, 29-31), a meat cache (site 25), a shooting blind (site 28) and a hearth (site 31).



Fig. 9: River running into Amitsorsuaq (from SE).

After lunch, the third alpine area with snow fields was approached: the team walked on the southern shore of Amitsorsuaq to cross the outflow of the glacier easily in ankle-deep water (fig. 10).



Fig. 10: PP fording the meltwater creek (photo by VN).

Afterwards the route to the only pass in the mountain chain south of Amitsorsuaq (fig. 11) was surveyed to find two shooting blinds in mid-elevation (site 33).



Fig. 11: FP and VN heading for the pass (from W).

On the pass many snow fields were present (fig. 12; 14). Beside one caribou, many caribou tracks (fig. 12) and fresh dung were present.



Fig. 12: View from the pass (see also fig. 9) and PP on the pass (from E).

After finding a hunters' bed with shooting blinds (site 34), at 1700, the decision was made to investigate this area in more detail tomorrow. Therefore, a lower spot east of the glacier below point 1456 (fig. 13) was chosen to establish Camp 3 (N64°01′46,8"-W050°33′51,8"-1050m).



Fig. 13: Glacier south of point 1456 (from E).

### 21st July 2014

At 0830 the team left Camp 3 to survey the pass (fig. 14: left) but only few shooting blinds and inussuit (sites 34-structures 4 and 5, site 35) were found.



Fig. 14: The pass (from S) and Camp 3 (from NE, photo by VN).

After registration, Camp 3, which was established on loose ground and exposed to wind (fig. 13: right), was moved into a lower position, to Camp 4 (N64°00′44,9"-W050°35′43,3"-750m) at 1300. After three full-day surveys, the first afternoon was spent for recuperation.

# 22<sup>nd</sup> July 2014

At 0800 the team left Camp 4 with empty backpacks to walk to the depot at Oqaatsut nunaqarfiat. Here, food for seven days was sorted. While having lunch on the beach, VN and FP found two stone artefacts (locality 36). After the walk uphill with heavy backpacks in scorching heat, Camp 4 was reached at 1430.

## 23<sup>rd</sup> July 2014

At 0845 the team left Camp 4 with full backpacks to follow the contour line towards west. The goal was to reach the next area with ice patches as well as to survey the slope above Kangerluarsunngup Tasersua in mid-elevation. This strategy was successful as many hunting

sites with up to nine shooting blinds (sites 37, 38, 40-42, 44), two hunters' bed (site 43, 45) and a single inussuk (site 39) were found. This is interesting as no or only few hunting structures were known from the lake shore (Kapel 1993). However, while crossing of creeks was unproblematic (fig. 15), walking was strenuous as it involved traversing steep slopes and, at one point, climbing.



Fig. 15: FP crossing a creek (photo by VN).

At 1830 the outflow of a small lake was reached. It is situated some hundred meters east of the start of the meltwater river which runs into the western end of Kangerluarsunngup Tasersua. Here Camp 5 (N63°59′39,1″-W050°47′10,0″-700m) was established (fig. 16).



Fig. 16: Camp 5 (from S, photo by VN).

## 24<sup>th</sup> July 2014

After the strenuous walk from yesterday a more easy survey was planned to check the fourth area with ice patches. At 0830, VN and CP walked into western direction to survey the shore of the meltwater lake. They found a hunting site with many shooting blinds (site 46) and a hunters' bed (site 47). No other sites were found. Therefore, after reaching the glacier front, where CP nearly drowned in quick sand (fig. 17), they headed back to Camp 5 which was reached at 1300. However, no proper rest was possible as moskito made retreating into the tents necessary, where temperatures inside reached +36°C. Therefore, CP draw the stone and wooden artefacts.



Fig. 17: VN in front of the glacier (in front of shadow: quicksand with foot track).

# 25<sup>th</sup> July 2014

Yesterdays half day followed a larger survey tour: its goal was to circumnavigate the glaciated mountain (fig. 16: in background right; 18: left) north of Camp 5. At 0830, VN and CP left Camp 5. This was the only day with rain which ceased during midday to leave fog above 900m asl. First, the hunters' bed (site 48) near Camp 5 was registered. Afterwards, the broad, u-shaped valley (fig. 18) northeast of Camp 5 was surveyed to find hunting sites with shooting blinds (sites 49, 50, 52-54) and a hunters' bed (site 51).



Fig. 18: CP photographing site 50 – structure 1 (from S, photo by VN).

After reaching the northern end of the broad valley (fig. 18) a steep descent was necessary to reach the bottom of the valley which runs northwest into Ameralik. After following a caribou path through the rock-strewn slope, crossing the creek (fig. 19) was easy by steeping on stones and jumping the last part. Afterwards a steep descent was necessary east of the impressive waterfall, but by following caribou tracks it was possible to reach the valley ground without problems (fig. 20).



Fig. 19: Creek leading towards Ameralik (from E, photo by VN).

Afterwards the survey followed the creek which runs into Ameralik (fig. 20).



Fig. 20: Valley leading to Ameralik (from E). Creek shown in fig. 19 runs in lower elevation (in foreground) between grassy ridge and rock wall.

No obvious structures were found on the valley bottom (fig. 20) but a tent ring (site 55) and a possible hunters' bed (site 56) higher up. At 1530 a height of 840m asl. was reached. As low fog (fig. 20; 97) as well as ice patches and glaciers not indicated on the 1:250.000 maps

(fig. 21) made a southern route back to Camp 5 difficult, the decision was made to head back the same route. Without finding sites, progress was much faster and Camp 5 was reached at 1900.

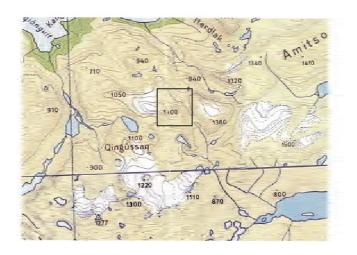


Fig. 21: Area on 1:250.000 SAGA map with non-mapped glaciers (in quadrangle).

## 26<sup>th</sup> July 2014

Rain during the night and fog did not allow to start fieldwork before noon. At 1300, the team started to approach the lake northwest of Camp 5. Three hunting spots with one or two shooting blinds (sites 57-59) and a sardine tin at the outflow of the lake were found. Camp 5 was reached at 1630.

# 27<sup>th</sup> July 2014

At 0830, VN and CP left Camp 5 to survey the next area with ice patches, the narrow valley which was not crossed on 25<sup>th</sup> July. On the highest spot of the valley fresh and old caribou tracks, dung and fur were visible on the snow (fig. 22: left). By climbing through a boulder field (fig. 22: right) the unmapped glacier (fig. 23: left) was reached.



Fig. 22: Snow field (left) and moraine (right, photos by VN).



Fig. 23: Narrow valley (from S) with boulder moraine and 'unmapped' glacier (left, photos by VN).

As no sites were found VN and CP returned to Camp 5. On lower elevation another small hunting site with two shooting blinds (site 60) was registered. By chance, both met FP and PP who came back from a glacier and all reached Camp 5 at 1400. The afternoon was used to discuss the outcome of the surveys: as all snow fields with easy access had been checked, the decision was made to survey the most lowest part of the slope above Kangerluarsunngup Tasersua before returning a few days earlier to the power plant.

# 28<sup>th</sup> July 2014

Rainfall started in the night and ended at 1030. At 1300, the team left Camp 5 to follow the eastern side of the creek / melt water river (fig. 24) to establish Camp 6 (N63°50′32,4″-W050°44′13,5″-400m) at 1500. No survey was done as the team was somehow tired as everybody did not eat well while resting in the hot tent yesterday and this morning.



Fig. 24: Western end of Kangerluarsunngup Tasersua below Camp 6 (from N).

# 29<sup>th</sup> July 2014

At 0830 the team started to survey the areas around the creeks which run down into Kangerluarsunngup Tasersua (fig. 25) but only two sites with one and three shooting blinds (sites 61 and 62) and a hunters' bed (site 63) were found.



Fig. 25: Survey area between site 63 and Camp 6 (from NW).

Camp 6 was reached in the afternoon. While eating on a windy spot with good view an employee of *Nuuk-Kraft* was seen training on the gravel road.

# 30<sup>th</sup> July 2014

Camp 6 was left at 0900 to walk down to the lake where the team was picked up by Jens Bjerge. He sailed the team to the depot to pick up supplies. After sailing back and driving down, *Nuuk-Kraft* was reached at 1200. The afternoon was spent with shower, shaving, reorganization of supplies and organization of accommodation in Nuuk.

### 31st July 2014

The team went to the pier at Buksefjord to catch fish, in the afternoon on the gravel road inland to visit sites 63V1-I-36, -37 and -39.

#### 1<sup>st</sup> August 2014

In the morning the team departed to walk to V501, the southernmost Norse buildings of the Western Settlement. The known Thule/colonial sites east of the farm were found but, as no map was taken, the search for V501 was unsuccessful.



Fig. 26: hunters' bed (photo by VN).

In the late afternoon, VN went again inland. Below 63V1-I-39 he saw a rock shelter with an inussuk (fig. 26) as well as a small hunting site with four inussuit (fig. 27).



Fig. 27: caribou hunting drive (photo by VN).

# 2<sup>nd</sup> August 2014

In the morning VN and CP went again to look for V501. Identifying the walls was difficult due to strong cover by birchs. However, two wooden poles with squared cross-section, painted red on top and with a nail (fig. 28) were found, which may be from the excavation of Hans Kapel (1993).



Fig. 28: V501 in 2014 (from NE, photo by VN).

# 3<sup>rd</sup> August 2014

#### Day-off.

Jens Bjerge, CP and FP ran to Kangerluarsunngup Tasersua and back, accompanied by PP on a bike. A shooting contest followed in the evening (fig. 29).



Fig. 29: (photo by VN).

# 4<sup>th</sup> August 2014

After cleaning the rooms and washing clothes, the team and employees of *Nuuk-Kraft* were picked up by *Arctic Boat Charter* at 1200. After whale watching (fig. 30) Nuuk was reached at 1400.



Fig. 30: Whale spotted south of Nuuk (photos by VN).

# 5<sup>th</sup> August 2014

Reorganisation of equipment and food. Visit to the NKA to give back the gun. The artefacts from localities 16 and 36 were labeled and put on the desk of the bureau of Mikkel Myrup as he was on field work in the Thule region.

# 6<sup>th</sup> August 2014

Day-off

# 7<sup>th</sup> August 2014

Flight from Nuuk (via Kangerlussuaq) to Copenhagen. Arrival at the hotel after midnight.

# 8<sup>th</sup> August 2014

By train from Copenhagen to Jena

# **Registered sites**

### Site 1

#### hunters' bed

- -3,0x1,5m large, rectangular structure built out of c. 25 stones (fig. 31)
- -u-shaped hearth beside a rock c. 3m southeast
- -N64°01′14,0"-W050°30′15,9"-650m

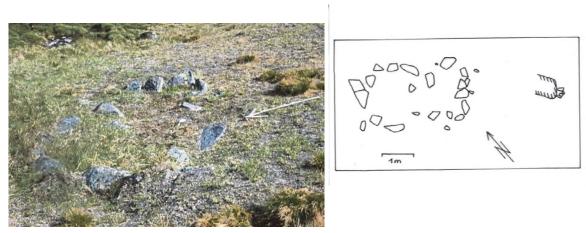


Fig. 31: site 1 (hunters' bed).

### Site 2

#### inussuk

- -two rocks (25x25x30cm and 25x40x10cm) placed side by side on edge of a 1x1x0,5m large, natural boulder (fig. 32)
- -N64°01′25,9"-W050°30′01,9"-750m



Fig. 32: site 2 (inussuk).

### Site 3

used rock shelter and caribou hunting drive with 5-6 inussuit and six shooting blinds (fig. 33)

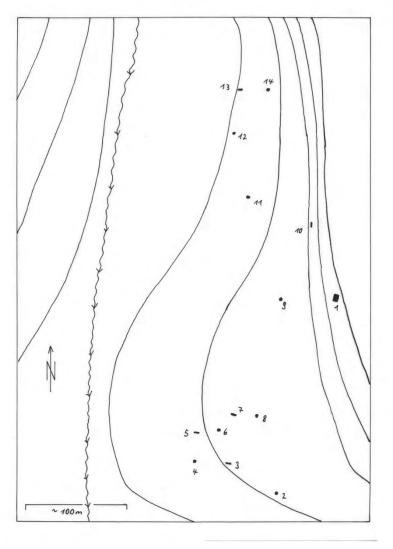


Fig. 33: site 3

- -used rock shelter
- -5x3x5m large, natural boulder
- -on northern side a 2,2x1,5x0,7m large, natural cavity
- -on western side a short wall built out of 3-4 rocks
- -on eastern side a 60x40cm large pile of stones
- -on top of boulder a large caribou antler fixed with rocks
- -around boulder lots of caribou bones (scapula, heel, lichen covered antlers etc.)
- -N64°01′32,1″-W050°29′54,1″-750m



Fig. 34: site 2 – structure 1 (rock shelter from S)

- -inussuk
- -40x30x20cm large rock lying obliquely on 1,8x1,8x0,5m large, natural boulder
- -N64°01′28,9"-W050°29′57,7"-700m

#### structure 3

- -shooting blind (fig. 35)
- -1,3m long row built out of seven rocks
- -on 2x3x1m large, natural boulder
- -N64°01′29,5"-W050°29′59,2"-700m



Fig. 35: site 3 – structure 3 (shooting blind).

#### structure 4

- -inussuk
- -30x20x20cm large rock on top of 2x1,05m large, natural boulder
- -N64°01′29,5"-W050°30′00,8"-700m

- -shooting blind (fig. 36)
- -0,9m long and 0,3m high row built out of five rocks
- -on 3x2x1m large, natural boulder
- -N64°01′30,4″-W050°30′00,0″-700m



Fig. 36: site 3 – structure 5 (shooting blind).

-possible inussuk

#### structure 7

- -shooting blind
- -disintegrated, 1,4m long and 0,2m high row built out of eight rocks
- -on edge of 5x4x1m large, natural boulder
- -on the same boulder, 2m in eastern direction, another, possible shooting blind built out of 2-3 rocks
- -N64°01′30,4"-W050°29′58,2"-700m

#### structure 8

- -inussuk
- -30x20x10cm large rock on 2x2x1m large, natural boulder
- -N64°01′30,3"-W050°29′57,5"-700m

- -inussuk
- -35x25x15cm large rock placed obliquely beside a 25x30x5cm large rock
- -on 2x2x0,5m large, natural boulder
- -on the same boulder, 1m in eastern direction, u-shaped formation built out of three rocks
- -N64°01′32,8"-W050°29′56,8"-700m

- -interpretation not clear (shooting blind/repository/fox trap?)
- -disintegrated, 2,0x0,6x0,4m large heap of c. 12 stones
- -inside piece of cord
- -on 1,5m high rock, in boulder field
- -N64°01′33,6"-W050°29′54,3"-700m

#### structure 11

- -inussuk
- -40x30x5cm large rock placed obliquely on to 30x20x20cm large rock
- -both on 2x0,5x0,5m large, natural boulder
- -N64°01′34,3"-W050°29′57,2"-700m

#### structure 12

- -shooting blind
- -1,3m long and 0,4m high row built out of 7-9 rocks
- -built between two large, natural rocks
- -single caribou bone beside
- -N64°01′35,9"-W050°29′55,9"-700m

#### structure 13

- -shooting blind
- -1,1m long and 0,5m high row built out of five rocks
- -between two natural boulders
- -N64°01′36,4"-W050°29′55,7"-700m

#### structure 14

- -shooting blind
- -2,3m long and 0,4m high row built out of twelve rocks
- -between three natural boulders
- -N64°01′36,3″-W050°29′54,9″-700m

#### Site 4

#### inussuk (fig. 37)

- -35x30x20cm large rock on ridge of a keel-shaped, 3x2x1m large, natural boulder
- -N64°02′52,7"-W050°29′30,1"-800m
- -another possible inussuk c. 60m in western direction



Fig. 37: site 4 (inussuk from S).

#### Site 5

inussuk

- -30x30x20cm large rock on 2x1,5x1,5m large, natural boulder
- -N64°30′53,0″-W050°30′09,7″-750m
- -maybe part of an indistinctive, small caribou hunting drive with four single-stone inussuit

### Site 6

hunters' bed (fig. 38)

- -rectangular, 1,7x1,2m large structure built out of c. 30 rocks on to southern side of a 0,6m high rock wall
- -N64°04′05,2"-W050°30′16,5"-700m
- -c. 200m in southern direction: 4-5 possible, single-stone inussuit



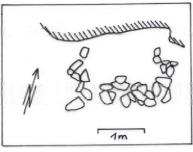


Fig. 38: site 6 (hunters' bed).

Site 7
caribou hunting drive with 5-6 inussuit (fig. 39)

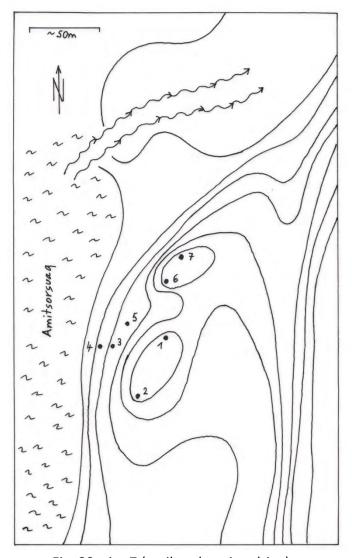


Fig. 39: site 7 (caribou hunting drive).

- -inussuk (fig. 40)
- -row of three 50cm high rocks, a smaller, fourth rock is situated beside
- -N64°04′24,4″-W050°30′24,3″-700m



Fig. 40: site 7 – structure 1 (inussuk).

- -possible inussuk
- -40x30x20cm large rock on edge of large, natural boulder
- -N64°04′24,0"-W050°30′24,6"
- -some meters towards south: two stone circles on bare rock surface

#### structure 3

- -inussuk
- -two 30cm high rocks side by side
- -immediately beside (and c. 5m above) the lake shore
- -N64°04′24,0″-W050°30′24,6″

#### locality 4

- -artefact
- -sheet of green tarpaulin with blue rope
- -covered by two rocks

#### structure 5

- -inussuk
- -40x20x5cm large rock on 1x1x0,5m large, natural boulder
- -N64°04′24,7"-W050°30′25,0"

#### structure 6

- -inussuk
- -40x20x30cm large boulder on large, natural boulder
- -N64°04′25,1"-W050°30′24,1"

- -inussuk (fig. 41)
- -40cm large and 15cm thick, pillar-like rock, supported by four rocks
- -N64°04´25,5"-W050°30´23,8"



Fig. 41: site 7 – structure 7 (inussuk), site 8 on the right side, behind outflow of Amitsorsuaq.

#### Site 8

recent summer camp

- -3-4 round and rectangular tent rings built out of single, head-sized stones, with >4m diameter
- -one u-shaped hearth
- -lots of waste: sherds of bottles and glasses, tin cans, fragments of blue rope, parts of tarpaulin, beverage cans, cartridge for *Primus*, tubes, caribou bones, plastic holder for cartridges, plastic bottle *Quicksilver*, cartridges *Sako 22*, *Norma 308*, *Norma 30-06* and *RP308WIN*
- -most southern tent ring at N64°04′28.1″-W050°30′27,2″-700m

#### Site 9

caribou hunting drive (fig. 42) with six inussuit

#### structure 1

- -inussuk
- -30x30x20cm large rock on 3,5x2x1,5m large, natural boulder
- -N64°04′35,8"-W050°30′26,8"-700m

#### structure 2

- -inussuk
- -25x15x20cm large rock on highest point of a 1,2x1x1m large, natural boulder
- -N64°04′35,9"-Wo50°30′25,1"-700m

- -inussuk
- -two white rocks (30x25x20cm and 25x20x10cm) side by side
- -N64°04′34,7″-W050°30′25,6″-700m

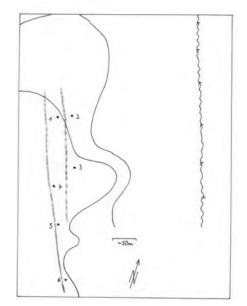


Fig. 42: site 9 (caribou hunting drive).

- -inussuk
- -30x20x15cm large rock on 1x05x05m large, natural boulder
- -N64°04′34,4″-W050°30′26,5″-700m

#### structure 5

- -inussuk (fig. 43)
- -white, 35x30x20cm large rock on 1,5x1,5x0,5m large, natural boulder
- -N64°04′33,8″-W050°30′26,1″-700m

- -inussuk (fig. 43)
- -white, 30x20x35cm large rock on natural rock surface
- -N64°04′32,7″-W050°30′26,0″-700m



Fig. 43: site 9 – inussuit 6 (in front) and 5 (in background, from S).

#### **Site 10**

hunters' bed (fig. 44)

- -built out of c. 40 stones
- -4,0x2,0m large, rectangular structure divided in two parts by a central wall
- -N64°04′25,4"-W050°30′23,9"-700m
- -4m towards north on the western side of a large, natural boulder a heap of stones is situated which may be nature or a meat cache



Fig. 44: site 10 (hunters' bed).

#### <u>Site 11</u>

summer camp with a shooting blind and three inussuit (fig. 45)

- -tent house (fig. 46; 47)
- -main room: rectangular (2,2m long and 2,0m wide), up to 70cm high wall built out of many rocks and stone slabs (up to 90x60cm)
- -second room: rectangular (1,2m long and 3,0m wide), up to 40cm high wall, inside the western wall a niche (fig. 48) with a roof built out of two slabs (of which one is fallen down), indistinct entrance (on southwestern edge?) but with massively built, round, 1,4x0,8m large annex on southern side
- -N64°04′06,8"-W050°31′23,9"-700m

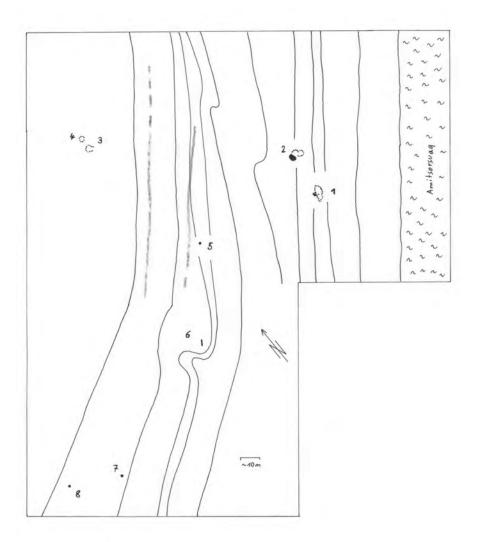


Fig. 45: site 11 (summer camp).



Fig. 46: site 11 – structure 1 (tent house from N, photo by VN).

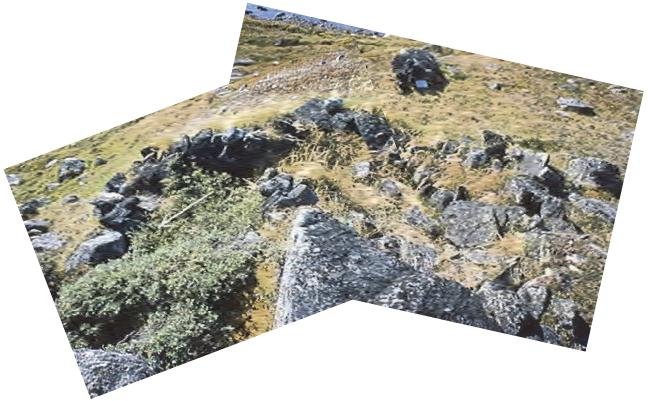


Fig. 47: site 11 – structure 1 (tent house).



Fig. 48: niche in site 11 – structure 1 (from E).

- -tent house (fig. 49)
- -main room: not as massive as structure 1, round (2m long and 1,7m wide), up to 50cm high wall, built out of numerous rocks and few slabs
- -second room: rounded (1,7m long and 1,3m wide), on western side built onto a 1,7m high, natural boulder, strong disintegration on eastern side
- -N64°04′07,6"-W050°31′23,6"-700m



Fig. 49: site 11 – structure 2 (tent house).

- -tent house (fig. 50)
- -main room: rounded (2,0m long and 1,5m wide), up to 50cm high wall out of large rocks,
- 1,5m long sleeping platform
- -second room: small and rounded, entrance on southeastern side/towards the lake, maybe small (90x40cm) cooking niche on southwestern side
- -N64°04′09,0"-W050°31′28,1"-700m



Fig. 50: site 11 – structure 3 (tent house).

- -tent house? (fig. 51)
- -round structure (1,2m diameter) out of few stones, built into the slope and beside natural boulders, entrance towards the lake, presence of second room/cooking niche not obvious -N64°04′09,2″-W050°31′28,3″-700m



Fig. 51: site 11 – structure 4 (tent house), structure 4 on upper left side.

- -inussuk
- -25x20x25cm large, white rock on natural rock surface
- -N64°04′07,9"-W050°31′26,9"-700m

### structure 6

- -shooting blind (fig. 52)
- -1,1m long row built out of four rocks, with central opening
- -parallel to caribou path
- -N64°04′07,0"-W050°31′29,4"-700m



Fig. 52: site 11 – structure 6 (from W).

### structure 7

- -inussuk
- -25x20x25cm large rock on 5x3x1,5m large, natural boulder
- -N64°04′06,9"-W050°31′33,2"-750m

- -inussuk
- -20x15x20cm large rock on 2x2x2,5m large, natural boulder
- -N64°04′07,2"-W050°31′35,4"-750m

meat cache

- -disintegrated
- -3,5x2,5x0,5m large arrangement of c. 20 rocks of which nine are situated on a natural rock surface
- -N64°03′33,3"-W050°33′32,8"-700m

### <u>Site 13</u>

two used rock shelters

- -both are situated on the lower end of a (now dry) ravine cut into rocks
- -N64°03′34,7"-W050°33′41,8"-750m
- -on the western side of the ravine a 2,0m long, disintegrated wall built out of c. 30 rocks is situated in front of a 2,0m wide, 1,2m deep and 1,1m high overhang (fig. 53: left), inside maybe black coloring by soot



Fig. 53: site 13 (two rock shelters, left: from E).

-on the eastern side an angular, stone-built wall is present under a 2,0m wide, 2,0m deep and 0,9m high overhang (fig. 53: right)

#### **Site 14**

hearth (fig. 54)

- -u-shaped, built out of many rocks with a large slab covering the whole ensemble
- -resembles that kind of hearth which was drawn by Aron from Kangeq around 1860 (Thisted 1999, 508)
- -N64°03′34,9"-W050°33′37,7"-750m

-maybe some single-stone inussuit are present on the slope above, west of site 14 -maybe sites 12-14 were part of a single locality



Fig. 54: site 14 (hearth).

## <u>Site 15</u>

meat cache (fig. 55)

- -1,5x1,0m large heap of c. 30 rocks (up to 40cm long)
- -situated on natural rock surface, near the edge to a 150m high precipice (fig. 55)
- -N64°02′12,8"-W050°38′40,1"-850m



Fig. 55: meat cache (left: from S, right: from W).

### Locality 16:

wooden artifact (fig. 56)

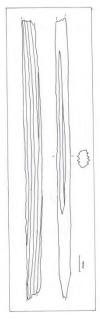


Fig. 56: wooden artifact.

- -18,0x0,9x1,1cm large
- -heavily weathered growth rings which run parallel to the outline
- -one end broken, other end fragmented but wedge-shaped (with a double bevel)
- -the artifact may be a peg used for stretching skins which can be up to 30cm long, but these pegs have a rounded cross section (Gulløv 1997, 179-189), pegs with squared cross sections occur rarely (eg. Gulløv / Kapel 1979, 198)
- -stray find within a larger area (fig. 7) where single fist- and head-sized rocks are loosely distributed on grass (indicating hill wash during snowmelt?)
- -N64°03′52,1"-W050°34′25,2"-800m

#### Site 17

shooting blind (fig. 57)

- -1,8m long, u-shaped, 0,4m high, built out of c. 30 rocks
- -partly between low, natural boulders
- -N64°04′00,8"-Wo50°35′02,4"-850m

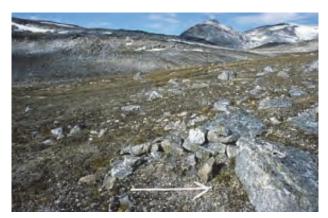


Fig. 57: site 17 (shooting blind).

### <u>Site 18</u>

meat cache? / shooting blind?

- -1,6x0,4m large, linear arrangement of c. 25 stones with four stones placed in centre
- -situated on natural rock surface (fig. 58)
- -N64°04′01,0"-W050°35′21,4"-850m



Fig. 58: site 18 (from E).

### <u>Site 19</u>

tent house (fig. 59)

- -wall built out of many rocks, entrance towards south
- -shape rectangular with rounded edges
- -rectangular canvas tent or tent house with main room on the western and cooking niche on eastern side?
- -u-shaped hearth some metres towards east
- -sherds of a cup scattered inside and outside (fig. 60)
- -N64°04′02,2"-W050°35′21,4"-850m



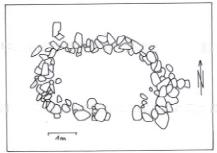


Fig. 59: site 19 (tent house).



Fig. 60: Sherds found in and around the tent house.

inussuk (fig. 61)

- -composite, built out of >20 rocks and slabs
- -dome-shaped, 40cm high
- -on 2,5x1,5x1,5m large, natural boulder
- -N64°05′35,3″-W050°32′24,4″-800m



Fig. 61: site 20 (from S).

caribou hunting drive with two shooting blinds and two inussuit (fig. 62)

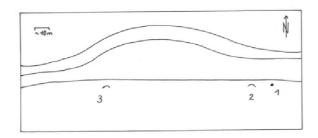


Fig. 62: site 21.

#### structure 1

- -inussuk
- -40x25x40cm large rock on 2x1x05m large, natural boulder
- -N64°04′56,7"-W050°33′07,5"-900m

### structure 2

- -shooting blind
- -0,8m long and 0,2m high, built out of three stones
- -N64°04′56,6"-W050°33′08,6"-900m

#### structure 3

- -shooting blind
- -1,0 long, built out of c. 20 head-sized rocks
- -on 2,5x1x0,5m large, natural boulder
- -N64°04′56,1"-W050°33′12,2"-900m

#### structure 4

- -inussuk
- -20x40x10cm large rock slab on35x20x15cm large rock slab
- -both situated on 1,5x1x0,5m large, natural boulder
- -N64°04′54,5″-W050°33′15,7″-900m

500m further south another possible shooting blind and a (single stone) inussuk may be present.

## <u>Site 22</u>

# 5-6 shooting blinds (fig. 63)

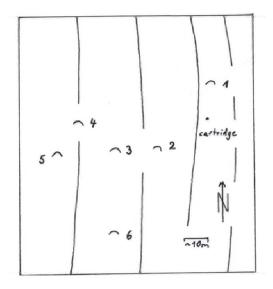


Fig. 63: site 22

- -shooting blind (fig. 64)
- -three stones with a gap in between forming a 1,0m long row
- -three rocks laying nearby
- -N64°04′19,4″-W050°33′29,0″-950m
- -15m to the south a cartridge S & B 30-6 SPRG was found



Fig. 64: site 22 – structure 1 (shooting blind from S).

- -possible shooting blind
- -six stones scattered on a 1,5x1x05m large, natural boulder
- -N64°04′18,4"-W050°33′30,1"-950m

#### structure 3

- -shooting blind (fig. 65)
- -five rocks with a gap in between forming a 1,6m long and 25m high row
- -N64°04′18,6"-W050°33′31,3"-950m

#### structure 4

- -shooting blind
- -1,4m long, built out six up to 40cm long rocks
- -situated on the side and on top of a 1x1x0,5m large, natural boulder
- -N64°04′19,0"-W050°33′32,0"-950m

#### structure 5

- -shooting blind
- -two large rocks forming a 0,6m long row
- -both situated on a 2x1,5x0,5m large, natural boulder
- -N64°04′18,6"-W050°33′33,3"-950m

- -shooting blind (fig. 65)
- -three rocks forming a 0,8m long row
- -on a large, 0,5m high, natural rock slab
- -N64°04′17,6″-W050°33′31,7″-950m

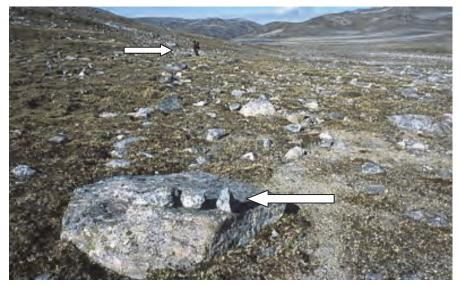


Fig. 65: site 22 – structure 6 (from S, structure 3 in background).

meat cache or inussuk

- -a heap out of c. 30 rocks and up to 80cm long, pillar-shaped stones
- -N64°04′15,6"-W050°33′29,2"-950m

### Site 24

shooting blind

- -1,8m long, (-shaped row built out of twelve small stones
- -situated on the ridge of a keel-shaped, 1m high, natural boulder
- -N64°03′55,7"-W050°33′05,4"-750m

### Site 25

meat cache?

- -c. 30 rocks (inside 70x70cm)
- -situated between large, natural boulders (fig. 66)
- -N64°02´34,1"-W050°38´19,8"-700m



Fig. 66: site 25.

## Site 26

used rock shelter (fig.67)

- -large, natural boulder
- -on south-facing side a rectangular, up to 0,5m high wall built out of 40-50 rocks surrounding a 2,0x1,6x1,0m large space
- -inside splintered caribou longbones and tin cans

- -u-shaped hearth on southern side of the wall
- -N64°02′33,4″-W050°30′52,2″-750m
- -50m in southern direction a (single-stone) inussuk



Fig. 67: site 26 (used rock shelter).

hunters' bed with two shooting blinds (fig. 68)

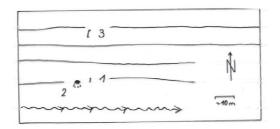


Fig. 68: site 27.

- -shooting blind
- -three rocks and one stone slab forming a 1,2m long and 0,4m high row
- -N64°02´32,8"-W050°39´10,1"-700m

- -hunters' bed (fig. 69)
- -rectangular wall built out of c. 20 head-sized rocks
- -inside 2,0x1,4m
- -wall built onto south-facing side of a 3x2x1m large, natural boulder
- -N64°02′32,9"-W050°39′10,7"-700m



Fig. 69: site 27 – structure 2 (hunters' bed).

- -shooting blind (fig. 70)
- -3,0m long row built out of 30-50 rocks
- -[-shaped (with two 0,5m long rows rectangular to the longer row)
- -N64°02´33,4"-W050°39´10,3"-700m



Fig. 70: site 27 – structure 3 (shooting blind).

## <u>Site 28</u>

## shooting blind and inussuk (fig. 71)

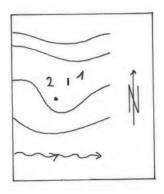


Fig. 71: site 28

#### structure 1

- -shooting blind (fig. 72)
- -1,0m long, (-shaped row built out of six rocks
- -on 2x2x0,5m high, natural boulder
- -N64°02′35,9"-W050°39′20,7"-750m



Fig. 72: site 28 – structure 1 (shooting blind).

- -inussuk
- -40x15x15cm large rock on 2x2x0,5m large, natural boulder
- -N64°02′35,9"-W050°39′22,0"-750m

hunters' bed and used rock shelter

#### structure 1

- -hunters' bed (fig. 73)
- -rectangular wall built out of >15 rocks
- -inside 2,7x1,4m
- -overgrown by dwarf shrub
- -N64°02′38,7″-W050°39′23,0″-750m



Fig. 73: site 29 – structure 1 (hunters' bed).

#### structure 2

- -used rock shelter
- -a wall built out of few stones is situated below the overhang on the northern and eastern side of a large, natural boulder
- -inside 1,8x1,2m
- -N64°02′38,7″-W050°39′23,9″-750m

### <u>Site 30</u>

#### used rock shelter

- -a wall built out of five rocks on southern side of a large, natural boulder
- -rectangular, 2,2x1,2x1,0m large space inside
- -N64°02´37,7"-W050°39´21,3"-750m

hunters' bed (fig. 74)

- -rectangular wall (inside 3,0x1,2m) built out of c. 35 rocks which are up to 40cm long
- -strong overgrowth by grass
- -N64°02′32,7″-W050°38′24,7″-700m



Fig. 74: site 31 (hunters' bed).

## **Site 32**

hearth

- -built out of six rocks
- -u-shaped
- -N64°02′34,8″-W050°38′16,1″-700m

## **Site 33**

two shooting blinds (fig. 75)

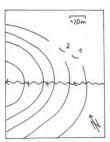


Fig. 75: site 33.

- -shooting blind (fig. 76)
- -1,2 long, straight wall built out of c. 10 rocks
- -on 0,5m high rock
- -N64°02´16,3"-W050°36´03,2"-850m



Fig. 76: site 33 – structure 1 (shooting blind, structure 2 in background).

### structure 2

- -shooting blind (fig. 76)
- -0,6m long wall built out of four rocks
- -N64°02′16,9"-W050°36′03,9"-800m

### Site 34

hunters' bed and 2-3 shooting blinds with one inussuk (fig. 77)

- -hunters' bed (fig. 78)
- -u-shaped wall built out of c. 25 rocks
- -wall built onto south-facing side of a c. 1m high, natural boulder
- -seven rocks are placed on top of that boulder
- -one slab has fallen down to the northwestern edge of that boulder
- -many caribou bones are loosely distributed around
- -N64°02′04,2"-W050°34′28,3"-1100m

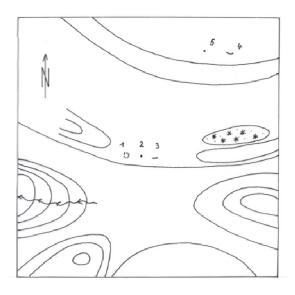


Fig. 77: site 34.



Fig. 78: site 34 – structure 1 (hunters' bed.)

- -possible, very small shooting blind
- -approx. 5m east of structure 1

- -shooting blind
- -0,6m long row built out of four rocks, two rocks are placed on top of each other
- -N64°02′03,2″-W050°34′24,9″-1150m

- -shooting blind (fig. 79)
- -1,0m long, (-shaped wall built out of eight head-sized and three smaller rocks
- -on 1,5x1,5x0,5m large, natural boulder
- -shooting blind is arranged towards the pass with its snowfields (fig. 79)
- -N64°02′11,0"-W050°33′55,5"-1100m



Fig. 79: site 34 – structure 4 (shooting blind, from N).

#### structure 5

- -inussuk
- -30x20x15cm large, black rock on top of a 2x2x0,5m large, natural boulder

### **Site 35**

### two shooting blinds

#### structure 1

- -shooting blind
- -1,0m long wall built out of four rocks and one stone slab
- -situated on a 2x1x0,5m large, natural boulder
- -shooting blind is arranged perpendicular to the slope, facing caribou paths which run parallel to the slope
- -N64°01′35,3"-W050°33′47,3"-1000m

- -shooting blind
- -1,5m long wall built out of 15 rocks
- -situated on a 4x3x0,5m large, natural boulder
- -shooting blind is arranged perpendicular to the slope, facing caribou paths which run parallel to the slope
- -N64°01′36,3"-W050°33′47,0"-1000m

### **Locality 36**

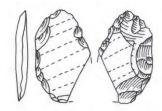
#### lithic artefacts

- -found on the northern side of Kangerluarsunnguup Tasersua
- -on a sandy beach between the proper lake shore and a rocky outcrop (fig. 80) right near the artificially raised lake level
- -N64°00′08,7"-W050°30′04,6"-300m



Fig. 80: area where the lithic artefacts have been found (from N).

The raw material is a semi-transparent white quartzite which is common in the Nuuk area (Sørensen 2012, 59-61). Due to the bifacial negatives on the right lateral edge (fig. 81: below) the flake may derive from the preparation phase of a bifacially prepared core (Sørensen 2012, 95-96). However, according to Sørensen (2012, 96) in West Greenland these cores were made not by using quartzite but killiaq. The second artifact (fig. 81: above) is bifacially retouched and may be a fragment of an arrow point or its broken preform (Sørensen 2012, 109-110; see also: Gotfredsen / Møbjerg 2004, 63).



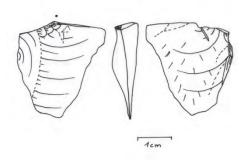


Fig. 81: lithic artefacts.

three shooting blinds and one inussuk (fig. 82)

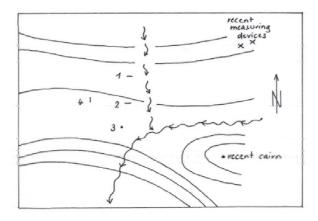


Fig. 82: site 37.

#### structure 1

- -shooting blind
- -1,3m long and up to 0,2m high row built out of eight stones
- -between flat natural boulders
- -N64°00′33,7″-W050°36′20,5″-750m

#### structure 2

- -shooting blind
- -disintegrated
- -on 2x2x0,5m large, natural boulder
- -N64°00′33,2"-W050°36′20,3"-750m

#### structure 3

- -inussuk
- -two rocks (40x20x30cm and 40x30x10cm) side by side on 2x1x0,5m large, natural boulder
- -N64°00′33,2″-W050°36′20,1″-750m

- -shooting blind
- -0,8m long row built out of three rocks and one 40cm long stone slab
- -between two larger natural boulders
- -N64°00′33,2″-W050°36′21,8″-750m

### <u>Site 38</u>

two shooting blinds and one inussuk (fig. 83)

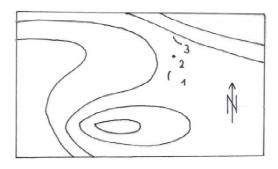


Fig. 83: site 38.

### structure 1

- -shooting blind
- -1,8m long, (- or u-shaped row out of eleven up to 50cm long rocks
- -N64°00′28,7″-W050°36′52,8″-800m

#### structure 2

- -inussuk
- -20x15x20cm large, white rock on 3x2x0,5m large, black, natural boulder
- -N64°00′28,9"-W050°36′53,7"-800m

#### structure 3

- -shooting blind
- -0,8m long, straight row built out of five up to 20cm high rocks
- -on 2x2x0,5m large, natural boulder
- -N64°00′29,5"-W050°36′52,0"-800m

## <u>Site 39</u>

### two inussuit

- -two single-stone inussuit, 60m apart from each other
- -both inussuit are situated in a boulder field
- -N63°59′42,1″-W050°38′36,8″-700m

## <u>Site 40</u>

## 3-4 shooting blinds (fig. 84)

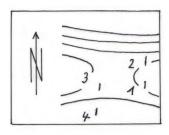


Fig. 84: site 40.

### structure 1

- -shooting blind
- -1,0m long, disintegrated row built out of five rocks
- -on natural rock surface
- -N63°59′37,7″-W050°41′27,2″-750m

- -shooting blind (fig. 85)
- -0,8m long row built out of ten rocks
- -rocks partly on top of each other
- -situated on the edge of a rocky outcrop
- -N63°59′37,9″-W050°41′27,2″-750m



Fig. 85: site 40 – structure 2 (structure 3 in background).

- -shooting blind (fig. 85; 86)
- -0,5m long row built out of six rocks
- -on 2x1x0,5m large, natural boulder
- -N63°59′37,5″-W050°41′28,5″-750m



Fig. 86: site 40 – structure 3 (shooting blind).

### structure 4

- -possible shooting blind
- -c. 6m southwest of structure 3

### **Site 41**

### shooting blind

- -1,8m long, straight row built out of 13 rocks
- -on 0,5m high, natural boulder
- -N63°59′28,3″-W050°42′36.4″-750m

### <u>Site 42</u>

### nine shooting blinds

- -shooting blind (fig. 87)
- -2,8m long, built with 10-15 rocks
- -on edge of 0,5m high, natural rock slab
- -N63°59′47,3″-W050°44′06,1″-850m



Fig. 87: site 42 – structure 1 (shooting blind).

- -shooting blind
- -1,6m long, (-shaped, built out of c. 10 rocks
- -N63°59′45,9″-W050°44′09,7″-850m

### structure 4

- -shooting blind
- -2,5m long, built out of c. 10 rocks
- -built between natural boulders with 0,5-2,5m diameter
- -N63°59′45,0″-W050°44′09,4″-850m

#### structure 5

- -shooting blind
- -1,3m long, u-shaped, built out of c. 13 rocks
- -N63°59′45,1"-W050°44′10,5"-850m

#### structure 6

- -shooting blind
- -2,4m long, built out of c. 20 rocks
- -N63°59′45,9"-W050°44′11,21"-850m

## structure 7

- -shooting blind
- -1,6m long, (-shaped, built out of eight flat rocks
- -N63°59′46,2″-W050°44′11,0″-850m

- -shooting blind
- -1,6m long, (-shaped, built out of twelve rocks
- -N63°59′45,8"-W050°44′09,9"-850m

- -shooting blind
- -1,6m long, straight, built out of 25 rocks
- -in small boulder field
- -N63°59′45,3″-W050°44′22,9″-800m

### <u>Site 43</u>

### hunters' bed

- -disintegrated, rectangular wall built out of c. 30 rocks (fig. 88)
- -inside 3,0x1,4m
- -N63°59′44,4"-W050°44′52,0"-800m



Fig. 88: site 43 (hunters' bed).

### **Site 44**

## two shooting blinds

### structure 1

- -shooting blind
- -1,3m long, (-shaped
- -stone row built out of eight rocks with a gap covered by a stone slab
- -N63°59′42,0″-W050°45′32,3″-800m

- -shooting blind
- -0,9m long, built out of 4-6 rocks
- -on edge of natural boulder
- -N63°59′42,4″-W050°45′33,4″-800m

## <u>Site 45</u>

## hunters' bed

- -u-shaped wall built onto the east-facing side of a 3m high rock wall (fig. 89)
- -wall built out of 15 up to 50cm long rocks
- -rectangular, inside 1,8x1,7m
- -N63°59′41,7″-W050°46′21,6″-750m



Fig. 89: site 45 (hunters' bed).

## Site 46

-5-9 shooting blinds (fig. 90)

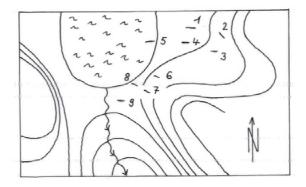


Fig. 90: site 46.

- -shooting blind
- -1,4m long, (-shaped
- -on two natural boulders (3x2x0,5m and 1x1x0,5m)
- -N63°59′38,3″-W050°47′48,5″-700m

#### structure 2

- -shooting blind
- -0,5m long, straight
- -built out of three rocks
- -on 3,5x1x0,5m large, natural boulder
- -N63°59′38,2"-W050°47′48,4"-700m

#### structure 3

- -shooting blind
- -2,2m long, straight
- -built out of 6-10 rocks
- -N63°59′37,8″-W050°47′48,9″-700m

#### structure 4

-possible (disintegrated?) shooting blind

### structure 5

-possible shooting blind as situated only 0,4m above lake level on large, natural rock slab

#### structure 6

- -shooting blind
- -2,4m long, (-shaped
- -built out of 25-30 rocks, some on top of each other
- -N63°59′37,7″-W050°47′50,0″-700m

#### structure 7

-possible (disintegrated?) shooting blind

- -possible shooting blind
- -built out of five rocks

- -shooting blind (fig. 91)
- -1,9 long, (-shaped
- -built out of c. 15 rocks
- -N63°59′36,8″-W050°47′51,7″-700m



Fig. 91: site 46 – structure 9 (shooting blind).

## **Site 47**

hunters' bed

- -wall built out of c. 45 rocks and turf/moss (fig. 92; see also photo on front cover taken by VN)
- -rectangular, inside 3,2x1,8m
- -N63°59′58,6″-W050°47′53,5″-700m



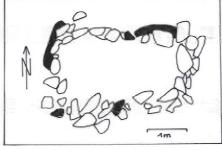


Fig. 92: site 47 (hunters' bed).

### hunters' bed

- -u-shaped wall built onto an east-facing, vertical, natural rock face (fig. 93)
- -east side of the wall is situated on the edge of a 0,5m high, natural rock step
- -wall built with c. 40 rocks (inside 1,6x1,5m)
- -N63°59′42,8"-W050°47′10,7"-700m



Fig. 93: site 48 (hunters' bed).

### **Site 49**

### shooting blind

- -0,9m long, built out of nine rocks
- -situated on the edge of a 1,5x1,5x1m large, natural boulder
- -N64°00′36,3″-W050°47′32,3″-750m

two more, possible shooting blinds are situated approx. 60m farther north and west

### **Site 50**

four shooting blinds

- -shooting blind (fig. 18; 94)
- -2,0m long
- -built out of >20 rocks, four rocks on top of each other
- -N64°00′45,2"-W050°47′22,4"-800m



Fig. 94: site 50 – structure 1 (shooting blind).

- -shooting blind
- -1,0m long
- -built out of 14 often very small rocks
- -on 1,5x1,5x0,5m large, natural boulder
- -N64°00′45,2"-W050°47′23,7"-800m

#### structure 3

- -shooting blind
- -1,0m long
- -built out of eleven rocks
- -on 3x2x0,5m large, natural boulder
- -N64°00′45,6"-W050°47′24,6"-800m

#### structure 4

- -shooting blind
- -five rocks, disintegrated, maybe straight originally
- -on keel-shaped edge of a rocky ridge
- -N64°00′46,3"-W050°47′27,4"-800m

### <u>Site 51</u>

### hunters' bed

- -situated between two 4x4x2m large, natural boulders
- -rounded wall (diameter inside 1,3m) built onto the natural rock walls
- -wall consists of nine up to 60cm long stone slabs and c. 10 smaller rocks
- -stone slabs now lay flat on the ground
- -N64°01′33,8"-W050°45′53,2"-900m

three shooting blinds (fig. 95)

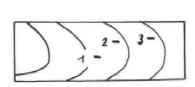


Fig. 95: site 52

#### structure 1

- -shooting blind
- -c. 2m long but disintegrated
- -built out of 15-20 rocks
- -situated on 3x2x05m large, natural boulder
- -N64°01′52,0"-W050°45′38,0"-900m

#### structure 2

- -shooting blind
- -2,5m long but partly disintegrated
- -built out of ten rocks
- -situated on a 0,5m high, natural rocky outcrop
- -N64°01′52,3"-W060°45′36,6"-900m

### structure 3

- -shooting blind
- -1,6m long, (-shaped
- -built out of eleven rocks
- -situated on a 0,5m high, natural rocky outcrop
- -N64°01′52,1"-W050°45′36,0"-900m

### <u>Site 53</u>

### shooting blind

- -0,7m long
- -built out of five rocks
- -wall is situated at the edge of a 0,5m high, natural boulder and built onto the eastern side of a 3x3x1,5 large, natural boulder
- -N64°01′55,9"-W050°45′26,9"-900m

### <u>Site 54</u>

## shooting blind

- -1,0m long, straight
- -built out of eight rocks
- -on 1,5x1x0,5m large, natural boulder
- -N64°03′07,2"-W050°48′36,4"-650m

### <u>Site 55</u>

tent ring (fig. 96)

- -ring (5m diameter) out of ten head-sized rocks
- -rocks are not or scarcely covered with lichen
- -N64°03′08,3"-W050°48′35,3"-650m



Fig. 96: site 55 (tent ring, from NW, photo by VN).

## Site 56

possible hunters' bed (fig. 97)

- -rectangular wall (inside 2,2x1,2m) built out of >15 rocks
- -N64°03′13,4″-W050°49′15,3″-750m



Fig. 97: site 56 (hunters' bed, from E, photo by VN).

## shooting blind

- -1,3m long, straight
- -built out of >9 rocks
- -on edge of a 2,5x2x0,5m large, natural boulder
- -N64°00′26,5"-W050°48′39,0"-800m

### Site 58

## shooting blind

- -1,0m long, (-shaped
- -built out of seven rocks
- -on edge of a 3x2x0,5m large, natural boulder
- -N64°00′25,4"-W050°18′32,7"-800m

### Site 59

two shooting blinds

- -shooting blind
- -0,9m long and (-shaped but disintegrated
- -built out of >8 stones
- -N64°00′09,1"-W050°48′11,3"-800m

- -shooting blind (fig. 98)
- -1,5m long, straight
- -built out of nine rocks, one of them is 60cm long
- -on rocky ridge
- -N64°00′08,6"-W050°48′11,5"-800m



Fig. 98: site 59 – structure 2 (left: from south).

## <u>Site 60</u>

## 1-2 shooting blinds

- -shooting blind (fig. 99)
- -2,5m long, straight
- -built out of >5 rocks
- -on keel of a ridge-like, 3x1x0,5m large, natural boulder
- -N64°00′22,9″-W050°47′51,3″-800m



Fig. 99: site 60 – structure 1

- -possible shooting blind
- -approx. 70m north of structure 1

## Site 61

shooting blind (fig. 100)

- -1,5m long, (-shaped
- -built out of >6 rocks
- -on edge of 2x2x0,5m large, natural boulder
- -N63°59′19,4″-W050°42′03,4″-600m



Fig. 100: site 61 (shooting blind).

## **Site 62**

## 2-3 shooting blinds (fig. 101)

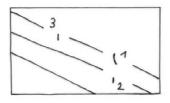


Fig. 101: site 62.

- -shooting blind (fig. 102)
- -1,5m long, straight
- -built out of seven rocks
- -situated on edge of a 2,5x2x0,5m large, natural boulder
- -N63°59´22,4"-W050°42´16,7"-700m



Fig. 102: site 62 – structure 1 (shooting blind).

- -shooting blind
- -0,6m long, straight
- -built out of two rocks
- -on edge of a 2x2x0,5m large, natural boulder
- -N63°59′22,3"-W050"42′16,7"-700m

#### structure 3

-possible shooting blind

### <u>Site 63</u>

hunters' bed (fig. 103)

- -rectangular wall (inside 2,3x1,7m)
- -built out of c. 25 rocks
- -partially overgrown by grass
- -situated west of a huge, partially overhanging, natural boulder
- -N63°59′05,0"-W050°44′55,3"-500m



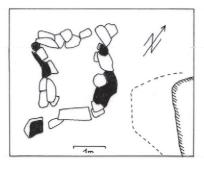


Fig. 103: site 63 (hunters' bed).

#### References

- C. Alix et al. (2012) A thousand years of lost hunting arrows: wood analysis of ice patch remains in Northwestern Canada. Arctic 65, 2012, 95-117.
- T.D. Andrews et al. (2012a) Archaeological investigations of alpine ice patches in the Selwyn Mountains, Northwest Territories, Canada. Arctic 65, 2012, 1-21.
- T.D. Andrews et al. (2012b) Alpine ice patches and Shúhtagot´ine land use in the Mackenzie and Selwyn Mountains, Northwest Territories, Canada. Arctic 65, 2012, 22-42.
- O. Bennike / C. Andreasen (2005) Radiocarbon dating musk-oxen (Ovibos moschatus) remains from northeast Greenland. Polar Rec. 41, 2005, 305-310.
- O. Bennike / C.J. Sparrenbom (2007) Dating the Narssarssuaq stade in southern Greenland. The Holocene 17, 2007, 279-282.
- M. Callanan (2012) Central Norwegian snow patch archaeology: patterns past and present. Arctic 65, 2012, 178-188.
- M. Callanan (2013) Melting snow patches reveal Neolithic archery. Antiquity 87, 2013, 728-745.
- J.H. Dickson / P.J. Mudie (2008) The life and death of Kwäday Dän Ts´inchí, an ancient frozen body from British Columbia: clues from remains of plants and animals. Northern Rev. 28, 2008, 27-50.
- J.M. Galloway et al. (2012) Diet and habitat of mountain woodland caribou inferred from dung preserved in 5000-year-old alpine ice in the Selwyn Mountains, Northwest Territories, Canada. Arctic 65, 2012, 59-79.
- A.B. Gotfredsen / T. Møbjerg (2004) Nipisat A Saqqaq culture site in Sisimiut, Central West Greenland. Meddelelser om Grønland Man & Soc. 31 (Copenhagen 2004).
- S. Greer / D. Strand (2012) Cultural landscapes, past and present, and the South Yukon ice patches. Arctic 65, 2012, 136-152.
- B. Grønnow et al. (1983) Aasivissuit The great summer camp. Meddelelser om Grønland Man & Soc. 5 (Copenhagen 1983).
- H.C. Gulløv (1997) From middle ages to colonial times. Meddelelser om Grønland Man & Soc. 23 (Copenhagen 1997).
- H.C. Gulløv / H. Kapel (1979) Haabetz Colonie 1721-1728 (Copenhagen 1979).
- A.Hafner (2012) Archaeological discoveries on Schnidejoch and other ice sites in the European Alps. Arctic 65, 2012, 189-202.
- P.G. Hare et al. (2004) Ethnographic and archaeological investigations of alpine ice patches in Southwest Yukon, Canada. Arctic 57, 2004, 260-272.
- P.G. Hare et al. (2012) The archaeology of Yukon ice patches: new artifacts, observations, and insights. Arctic 65, 2012, 118-135.
- K. Helwig et al. (2014) Ancient projectile weapons from ice patches in northwestern Canada: identification of resin and compound resin-ochre hafting adhesives. Journ. Arch. Scien. 41, 2014, 655-665.
- J.A.D. Jensen (1889) Undersøgelse af Grønlands vestkyst fra 64° til 67° N.B. Meddelelser om Grønland (Københav, 1889).

- H. Kapel (1993) Kangerluarsunnguup Tasersua / Tasersuaq Arkæologiske og etnologiske undersøgelser udført i forbindelse med etablering af vandkraft værket ved Bukseforden, Nuuk commune (Nuuk 1993).
- M.A. Kelly / T.V. Lowell (2009) Fluctuations of local glaciers in Greenland during the latest Pleistocene and Holocene time. Quat. Scien. Rev. 28, 2009, 2088-2106.
- T.S. Kuhn et al. (2010) Modern and ancient DNA reveal recent partial replacement of caribou in the southwest Yukon. Molecular Ecol. 19, 2010, 1312-1323.
- N.K. Larsen et al. (2014) Rapid early Holocene retreat in West Greenland. Quat. Scien. Rev. 29, 2014, 310-323.
- C.M. Lee (2012) Withering snow and ice in the mid-latitudes: a new archeological and paleobiological record for the Rocky Mountain region. Arctic 65, 2012, 165-177.
- B. Letts et al. (2012) Ancient DNA reveals genetic continuity in mountain woodland caribou of the Mackenzie and Selwyn Mountains, Northwest Territories, Canada. Arctic 65, 2012, 80-94.
- G. Nellemann (1955) Træk af rensdyrjagtens historie. Tidsskr. Grønland 1955, 81-87.
- G. Nellemann (1969-70) Caribou hunting in West Greenland. Folk 11-12, 1969-70, 133-153.
- G. Nellemann (1970) Rensdyrjagten i Vestgrønland Jagtmetoder i fortid et nutid. Tidsskr. Grønland 1970, 389-308.
- A.Nesje et al. (2012) The climatic significance of artefacts related to prehistoric reindeer hunting exposed at melting ice patches in southern Norway. The Holocene 22, 2012, 485-496.
- U. Odgaard (2007) Historic and prehistoric caribou hunters in West Greenland. In: S. Beyries / V. Vaté (Eds.) Les civilations du renne d'hier et d'aujourdhui (Antibes 2007) 89-109.
- C. Pasda (2011) Karibujäger in Grönland Ergebnisse der archäologischen Untersuchungen von 2005-2009 im hinteren Nuuk-Fjord. Int. Arch. 116 (Rahden/Westf. 2011).
- C. Pasda (2014) Regional variation in Thule and colonial caribou hunting in West Greenland. Arctic Anthr. 51, 2014, 41-76.
- R. Reckin (2013) Ice patch archaeology in global perspective: archaeological discoveries from alpine ice patches worldwide and their relationship with paleoclimates. Journ. World Prehist. 26, 2013, 323-385.
- M.P. Richards et al. (2007) Radiocarbon dating and dietary stable isotope analysis of Kwäday Dän Ts´inchí. Am. Ant. 72, 2007, 719-733.
- S.R. Rogers et al. (2014) Combining glaciological and archaeological methods for gauging glacial archaeological potential. Journ. Arch. Scien. 52, 2014, 410-420.
- J. Rosing (1956) Renjakt i det gamle Grønland. Polarårboken 1956, 99-112.
- J. Rosing (1958) Tanker ved et "viftested". Tidsskr. Grønland 6, 1958, 385-392.
- J. Rosing (1988) Rendyrjægere i Itinnera. In: T. Møbjerg et al. (Eds.) Palæoeskimoisk forskning i Grønland (Aarhus 1988) 69-79.
- M. Sørensen (2012) Technology and tradition in the Eastern Arctic, 2500 BC-AD 1200. Meddelelser om Grønland Man & Soc. 40 (Copenhagen 2012).
- K. Thisted (1999) 'Således skriver jeg, Aron' Samlede fortællinger og illustrationer af Aron fra Kangeq (Nuuk 1999).

R. Vanderhoek et al. (2012) – Ice patch archaeology in Alaska: 2000-10. Arctic 65, 2012, 153-164.

M. Vedeler / L.B. Jørgensen (2013) – Out of the Norwegian glaciers: Landbreen - a tunic from the early first millennium AD. Antiquity 87, 2013, 788-801.

A.Weidick (1996) – Neoglacial changes of ice cover and sea level in Greenland – a classical enigma. In: B. Grønnow (Ed.) The Paleo-Eskimo cultures of Greenland. Danish Polar Center Publ. 1 (Copenhagen 1996) 357-270.

A.Weidick / O. Bennike (2007) – Quaternary glaciations history and glaciology of Jakobshavn Isbræ and the Disko Bugt region, West Greenland: a review. GEUS Bull. 14 (Copenhagen 2007).

A. Weidick et al. (2012) – Neoglacial and historical glacier changes around Kangersuneq fjord in southwestern Greenland. GEUS Bull. 27 (Copenhagen 2012).

#### Adress of authors

Universität Jena
Bereich für Ur- und Frühgeschichte
Löbdergraben 24a
D – 07740 Jena
clemens.pasda@uni-jena.de

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