## Archaeological survey of Amitsulooq and Killersuaq, June-September, 2024





Michael Nielsen & Frederik Fuuja Larsen

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Cover photo: Hunting bed at Amitsulooq (foto: NKA/Michael Nielsen, 2024).

# Archaeological survey of Amitsulooq and Killersuaq

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#### Prepared for:

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17 December 2024

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#### **Executive Resume**

In accordance with Inatsisartut Act no. 11 of May 19, 2010, on the preservation and other cultural heritage protection of cultural remains § 12 (hereinafter referred to as the Cultural Heritage Act), the Ministry of Agriculture, Self-Sufficiency, Energy and Environmentrequested the Greenland National Museum and Archives/Nunatta Katersugaasivia Allagaateqarfialu (hereinafter NKA) to conduct an archaeological survey of the areas Killersuaq and Amitsulooq, as well as to carry out preliminary investigations at Tasersiaq and an initial survey at the bottom of Kangerlussuatsiaq in connection with the preliminary investigations. The requested archaeological survey is carried out to clear the way for an upland reservoir for a planned, future hydroelectric power plant by Tasersiaq.

The archaeological survey was originally scheduled for early summer, 2024, but poor weather conditions resulted in several changes being made to the plan and the survey completed in a different manner.

The plan was, in June, to survey two stretches totaling approximately 60 kilometers along the lakes with three archaeologists over about nine days, and to conduct test excavations and examine cultural layers at a central site with tent foundations at Tasersiaq over two days. Due to lingering summer snow cover in June, low visibility due to low hanging clouds in August, the areas were not reached until September 12. Given the late season, a survey on foot in September was too risky due to the danger of snow and storms at those altitudes, so we had to limit our 2024 efforts to aerial surveys using a helicopter.

We made two landings and inspected two small areas for approximately one hour each. The first landing was at Amitsulooq, where a hunter's bed was documented, and the second landing was at the bottom of the Kangerlussuatsiaq, which is likely one of the access routes for cultures that used the lake landscapes for hunting.

It is our conclusion of the incomplete 2024 archaeological survey that there is great potential for the existence of still unidentified heritage sites in the impacted areas, as exemplified for instance by the discovery of a new hunter's bed. However, the aerial survey carried out in September also allowed us to better assess the landscape's character and therefore to plan required future surveys in a more efficient and cost-effective manner. For instance, a longer stretch near Killersuaq can be considered archaeologically unimportant, as it is too remote and unsuitable for reindeer hunting by the various

cultures. Conversely, areas like the lower valleys to the East require additional archaeological attention.

#### Kalaallisuuata naalisarnera

Eqqissisimatitsisarneq aamma allatigut kulturikkut eriagisassanik kulturikkut kingornussatut illersuineq pillugu Inatsisartut Inatsisaat nr.11, 19.maj 2010-meersoq (uani "Kulturikkut eriagisassatut inatsimmi", §12) tunngavigalugu Nunalerinermut, Imminut Pilersornermut, Nukissiutinut Avatangiisinullu Naalakkersuisoqarfiup Nunatta Katersugaasivia Allagaateqarfialu (NKA) piumaffigivaa sumiiffinni Killersuaq aamma Amitsuluup eqqaani itsarnisarsiorluni misissuisoqassasoq, taamatuttaaq Tasersiami Kangerlussuatsiallu qinnguani misissuinerit ingerlateqqinneqassapput. Misissuinerit tunngavigivaat siunissami Tasersiap eqqaanilu qatsinnerusumiittut tatsit atorlugit erngup nukissiorfiliortogarnissaanut pilersaarusiortogarnera.

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Sumiifinnut assigiinngitsunut marlunnut mippugut, sumiiffiit tamarmik immikkut 1 time missaa atorlugu misissuiffigivagut. Siulleq miffigisarput tassaavoq Amitsuluup eqqaa, tassanilu nassaaraarput qanga itsaq aavariat unnuiffigisarsimasaat, taannalu nalunaarsorneqarpoq, aappaattullu Kangerlussuatsiap qinngua qangarsuaaniilli timmut aavariat aallaavigisartagaat.

Itsarnisarsiorluni 2024-imi tamakkiinngikkaluartumik misissuinitta ilimanarsisippaa sumiiffinni erngup nukissiorfiliornermi sanaartorfiusussani suli kulturikkut eriagisassanik ilisimaneqanngitsunik peqassasoq, tassami ilimanannginnami aavariat unnuisarfiat nassaarisarput sumiiffik taamak annertutigisoq kisimiinnavianngimmat. Septemberimi qulimiguulimmik misissuinitsinni takujuminarsivoq nunap ilusaa, sumilu sukumiinerusumik misissuisinnaanerput sumilu pisariaqanngitsoq misissuissalluni. Assersuutigalugu Killersuup eqqaa nunaluttoq aavarfittut atorneqartarsimanissaanut ilimanngitsoq misissornissaa pisariaqarsorinngilarput. Kangia-tungaanili qooqqut appasinnerusumiittut itsarnisarsiorluni sukumiinerusumik misissuiffigineqarnissaat pisariaqarput.

#### Dansk resume

I overensstemmelse med Inatsisartutlov nr. 11 af 19 maj 2010 om fredning og anden kulturarvsbeskyttelse af kulturminder § 12 (herefter blot kulturmindeloven) anmodede Departement for Landbrug, Selvforsyning, Energi og Miljø, Grønlands Nationalmuseum og Arkiv/Nunatta Katersugaasivia Allagaateqarfialu (Herefter NKA) om at foretage en arkæologisk besigtigelse af Områderne KIllersuaq og Amitsulooq samt at lave indledende undersøgelser ved Tasersiaq og en indledende rekognoscering ved bunden af Kangerlussuatsiaq i forbindelse med anlæggelse af et vandkraftværk ved Tasersiaq.

Planen i juni var, at tre arkæologer skulle rekognoscere to strækninger langs søerne, der samlet set udgør omkring 60 kilometer, over cirka ni dage. Derudover skulle en central lokalitet ved Tasersiaq, hvor der findes teltfundamenter, prøvegraves og undersøges for kulturlag over en periode på to dage. Lokaliteterne blev på grund af dårlige vejrforhold gennem sommeren, først nået den 12. september. På grund af det sene tidspunkt på året ville en rekognoscering til fods i september være for risikabel på grund af risikoen for sne og storm i de højder. Derfor måtte vi nøjes med at overflyve områderne med helikopter.

Vi foretog to landinger og inspicerede to små områder i cirka en time. Den første landing var ved Amitsulooq, hvor en jagtseng blev dokumenteret, og den anden landing var ved bunden af

Kangerlussuatsiaq, som sandsynligvis er en af adgangsruterne for kulturer, der har brugt området til jagt.

Det er vores konklusion på den ufuldendte arkæologiske undersøgelse i 2024, at der er stort potentiale for, at der stadig findes uidentificerede kulturarvslokaliteter i de berørte områder, hvilket for eksempel understreges af opdagelsen af en ny jagtseng. Undersøgelsen, der blev gennemført i september, har dog gjort det muligt at vurdere landskabets og dermed planlægge nødvendige fremtidige undersøgelser mere effektivt. For eksempel kan en længere strækning nær Killersuaq betragtes som arkæologisk uinteressant, da den er for afsides og uegnet til rensdyrjagt for de forskellige kulturer. Omvendt kræver områder som de nedre områder mod øst yderligere arkæologisk opmærksomhed.

## Content

Execu	utive Resume	4	
Kalaall	llisuuata naalisarnera	5	
Dansk	k resume	6	
1. Ir	ntroduction, Project background	10	
1.1.	. Project Description	10	
1.2.	Logistics, timeframe, participants	12	
1.3.	Field methods	15	
2. P	Previous investigations	16	
		16	
3. R	Results of the investigation	17	
3.1.	. Identified sites and features	25	
4. C	Conclusions and Recommendations		
5. R	References2		

## **List of Figures**

Figure no. 1. Map of the area around Tasersiaq and Maniitsoq. The lakes at Amitsulooq and Killersuaq are surrounded by the Greenland Ice Sheet from the east, west, and south. (Map data: Nunniffiit, 2024)

Figure no. 2. Helicopter survey (red), foot survey (light blue) with dates for drop-off and pick-up by helicopter.

Figure no. 3. Map of Tasersiaq together with Amitsulooq and Killersuaq. The green circles indicate some of the key sites, including those of the Thule Inuit and Paleo cultures, with a possible connection to Amitsulooq and Killersuaq. (Map data: Nunniffiit, 2024)

Figure no. 4. Amitsuloog from south/east 14th of June. (Photo: M. Nielsen, 2024)

Figure no. 5. Low hanging clouds, Inland of Maniitsoq dir. north-east. 26th of August. (Photo: M. Nielsen, 2024)

Figure no. 6. Map of the route the 12<sup>th</sup> of September. Purple line, the surveyed area. Red markers the 2 one hour stops. (Source: Nunniffiit)

Figure no. 7. Rugged terrain at Amitsulooq looking to the east. (Photo: M. Nielsen, 2024)

Figure no. 8-9. The landscape of the north-western part of Amitsulooq shows a rugged landscape with gorges and streams. (Photo: M. Nielsen, 2024)

Figure no. 10-11. Amitsulooq view to the north and remains of caribou bones on the ground. (Photos: M. Nielsen, 2024)

Figure no. 12-13. Terrain between Amitsulooq and Killersuaq to the North. Flat landscapes with large boulders and small lakes. A landscape builds by expanding and retracting icecap. (Photo: M. Nielsen, 2024)

Figure no. 14-15. Landscape around Killersuaq seen to the north and to the south. Landscape dominated by large rivers and valleys. (Photo: M. Nielsen, 2024)

Figure no. 16. Lake Tasersiaq view to the west from the Killersuaq area. (Photo: M. Nielsen, 2024)

Figure no. 17-18. Kangerlussuatsiaq seen to the north and south. Landscape dominated from water activity, where you can see several riverbeds around the landscape. (Photo: M. Nielsen, 2024)

Figure no. 19. TAS2024001, hunter's bed appr. 5 meters from the lake shoreline. (Source: Google Earth)

Figure no. 20. TAS2024001 3,50m x 2,50m 21 rocks used as hunter's bed. (Photo: F. Larsen, 2024)

## 1. Introduction, Project background.

In accordance with Inatsisartut Act No. 11 of May 19, 2010, on the preservation and other cultural heritage protection of cultural remains § 12 (hereinafter referred to as the Cultural Heritage Act)<sup>1</sup>, the Ministry of Agriculture, Selfsuffiency, Energy and Environment requested the Greenland National Museum and Archives/ Nunatta Katersugaasivia Allagaateqarfialu (hereinafter NKA) to conduct an archaeological survey of the areas Killersuaq and Amitsulooq, as well as to carry out preliminary investigations at Tasersiaq and at the bottom of Kangerlussuatsiaq in connection with declassicication of any potential cultural heritage sites prior to a potential construction of a hydroelectric powerplant and associated off-take industry at Tasersiaq.

The Cultural Heritage Act authorizes NKA to conduct archaeological surveys, with the purpose of identifying and mapping any cultural remains that may be present in the designated areas and highlighting potential conflicts between construction activities and the cultural heritage or antiquarian interests within the same areas. Based on the archaeological survey, NKA may, pursuant to §13, subsection 2 of the Cultural Heritage Act, determine whether there is a need for further archaeological investigations if the construction is assessed to potentially disturb or destroy protected ancient monuments.

In accordance with §14 of the Cultural Heritage Act, the Ministry of Agriculture, Selfsuffiency, Energy and Environment, as the developer, funded the 2024 archaeological survey.

#### 1.1. Project Description

Prior to the survey, the investigations at Killersuaq and Amitsulooq were prioritized, as these areas had not previously been subject to archaeological surveys. Additionally, two other locations, Issormiut and the inner part of Kangerlussuatsiaq, were identified as important by the NKA and were therefore included in the plan. Kangerlussuatsiaq, between the two rivers, was considered a

10

<sup>&</sup>lt;sup>1</sup> https://nalunaarutit.gl/groenlandsk-lovgivning/2010/ltl-11-2010?sc lang=da

potentially important site due to its hunting strategic position in the landscape, which could serve as a point of access to the lakes.

Issormiut is interesting due to the presence of multiple hunting beds and tent foundations.

The objective of the investigation at Issormiut is to examine the cultural layers in and around the foundations to assess the site's preservation potential. By identifying and analyzing these cultural layers, it will be possible to gain a clearer understanding of the resources required to investigate and document the cultural heritage and to determine whether the site has potential for excavation.

**Killersuaq and Amitsulooq:** To be surveyed on foot. Both areas are connected to larger localities by Lake Tasersiaq and are likely to have been used for summer hunting by both Thule Inuit and Paleo cultures. There are no previous records in the surveyed areas, so it is important to thoroughly examine the stretches. Three people will walk to cover an area of about 100 meters. Expected finds include reindeer driving systems, hunting beds, shooting blinds, temporary camps, and possible artifacts related to cultural remains.

**Kangerlussuatsiaq:** A brief one-hour survey between the two rivers to understand the cultural landscape and assess if the area warrants further investigation. The area has not been previously surveyed.

#### NKAH 5123 – Issormiut:

Investigate cultural layers associated with temporary shelters. Small 50x50cm test trenches will be dug in front of the tent rings/shelters to find midden. The middens will be documented in context using drawings with interpretations and photographs. Soil samples will be taken to find dating material.

#### Other tasks:

Other tasks would be to drone the surroundings of the cultural remains and to drone the cultural remains so a reconstruction could be used for dissemination. Also to investigate cultural layers associated with temporary shelters or foundations if remains were to be discovered. Small test units will be dug in front of cultural remains to find midden. The middens will be documented in context using drawings with interpretations and photographs. Soil samples will be taken to find dating material.

#### 1.2. Logistics, timeframe, participants

#### Logistics:

The area to be surveyed ranges from sea level at the Kangerlussuatsiaq to over 1,000 meters in elevation at Amitsulooq. Amitsulooq and Killersuaq are located at approximately 1,000 meters above sea level, while Tasersiaq is situated at around 600 meters. None of the locations have any human-made infrastructure, and the nearest town is Maniitsoq. The distance from Maniitsoq to the first target at Amitsulooq is approximately 130 kilometers.



Figure no. 1. Map of the area around Tasersiaq and Maniitsoq. The lakes at Amitsulooq and Killersuaq are surrounded by the Greenland Ice Sheet from the east, west, and south. (Map data: Nunniffiit 2024)

The lakes at Amitsulooq and Killersuaq are surrounded by the Greenland Ice Sheet, primarily from the south, west, and east. A large glacier encompassing Tasersiaq and the lakes makes traversing the entire area impossible, as glacier tongues and rivers cannot be crossed. Therefore, multiple helicopter supports are necessary to complete a survey of the area.

At the same time, the plan of combining hiking with helicopter support to cross rivers and glacier tongues is the most practical approach in terms of time, safety, and cost. The plan involves hiking

with four helicopter supports and nine camps spread throughout the area. Field equipment includes tents, cooking gear, and safety equipment, which participants will carry from camp to camp.

#### Timeframe:

The key areas are located at approximately 1,000 meters above sea level, making the optimal timeframe for the project July and August. However, work can still be conducted with the risk of snow cover, in the second half of June and the first half of September. Due to the late planning, helicopter support was only available during these periods. The areas to be surveyed and examined were scheduled for June 14–24.



Figure no. 2. Helicopter survey (red), foot survey (light blue) with dates for drop-off and pick-up by helicopter. (Map data: Nunniffiit, 2024)

#### **GPS** positions for landings:

**Landing 1:** N66° 09.4277" W050°43.5770" (14 June arrival 10.15)

**Pick up 1:** N66° 05.2020" W050°27.5399" (18 June 10.15)

**Landing 2:** N66° 03.0231" W050°13.5955" (18 June arrival 10.30)

**Pick Up 2:** N66° 07.1036" W050°05.2139" (22 June 10.15)

**Landing 3:** N66°14.2142" W051°13.1604" (22 June arrival 10.45)

**Pick Up 3:** N66°14.2142"N W051°13.1604" (24 June 10.15)

**1-hour stop:** N66° 05.3369" W051°42.0619" (24 June 10.30 – 11.30)

#### **Participants:**

The most optimal number of participants is 3 people, consisting of 2 experienced archaeologists and 1 student. Having 3 people is most appropriate due to the area's remote location and vast expanse. For safety reasons, 3 people can better support each other in case any safety complications occur.

#### Frederik Fuuja Larsen, M.A. Ilisimatusarfik/University of Greenland

Archaeologist, Head of the Museum at the Greenland National Museum and Archives. Fuuja has decades of experience in North Atlantic and Arctic archaeology. He was involved in the reconnaissance of Tasersiaq in 2007-2009. Fuuja is responsible for the interpretation and registration of cultural remains and for interpreting the cultural landscape.

#### Michael Nielsen, M.A. Ilisimatusarfik/University of Greenland

Project-employed archaeologist at the Greenland National Museum and Archives. Michael has worked with North Atlantic and Arctic archaeology since 2009, specializing in excavations. He participated in the survey of Tasersiaq in 2009. Michael is the field leader responsible for safety, logistics, interpretation of cultural remains, and reporting.

#### Ivalu Lyberth Hard, B.A. Ilisimatusarfik/University of Greenland

Project-employed archaeologist at the Greenland National Museum and Archives. Ivalu has worked with tourism and communication since 2016 and archaeology since 2023. She has experience with

archaeology in the Qaanaaq area, providing insight into Arctic archaeology. Ivalu is responsible for the interpretation and registration of cultural remains.

#### 1.3. Field methods.

Reconnaissance focuses on 2 areas believed to have the highest likelihood of cultural remains:

**Killersuaq and Amitsulooq:** To be surveyed on foot. Both areas are connected to larger localities by Lake Tasersiaq and are likely to have been used for summer hunting by both Thule Inuit and Paleo cultures. There are no previous records in the surveyed areas, so it is important to thoroughly examine the stretches. Three people will walk to cover an area of about 100 meters from coastline to the inland. Expected finds include caribou driving systems, hunting beds, shooting hides, temporary camps, and possible artifacts related to cultural remains.

#### **Documentation:**

Cultural remains and artifacts will be documented with photos and written descriptions. If possible, drone footage will be taken to reconstruct the heritage sites in 3D, and document the surrounding environment. The area has good conditions for preserving items made of organic material. Climate changes may have exposed areas previously covered by glaciers or snow, potentially revealing well-preserved items and cultural layers.

## 2. Previous investigations



Figure no. 3. Map of Tasersiaq together with Amitsulooq and Killersuaq. The green circles indicate some of the key sites, including those of the Thule Inuit and Paleo cultures, with a possible connection to Amitsulooq and Killersuaq. (Map data: Nunniffiit, 2024)

The areas around the lakes at Killersuaq and Amitsulooq have not previously been subject to archaeological surveys and have no prior records. Tasersiaq, on the other hand, underwent systematic investigations in 2007, 2008, and 2009 as part of preliminary studies on the potential for hydropower plants at Tarsartuup Tasia and Tasersiaq for ALCOA. (Knudsen, P. K., 2009; Odgaard, U., 2008)

During the preliminary studies between 2007 and 2009, ancient sites were recorded along the shores of Lake Tasersiaq near Amitsulooq, as well as further upstream near the river and its associated small lakes. After the surveys at Tasersiaq, a total of 74 tent houses, 10 tent rings, 13 hunting beds, 2 fireplaces, and one grave with an associated side grave have now been recorded. Along with other types of cultural heritage sites, a total of 168 registrations have been selected for documentation, including excavations. (Knudsen, P. K., 2009)

Near Tasersiaq, close to Killersuaq, several Saqqaq tent rings have been documented on the northern side of Tasersiaq, including sites such as NKAH 5120 and NKAH 5115, 5117, and NKAH

5118. Structures from the Thule Inuit have also been identified in both the northern and southern parts of the lake, notably at NKAH 5116 and NKAH 5119.

At Tasersiaq near Amitsulooq, 10 sites from the Thule Inuit culture have been recorded. Historical sources mention these as caribou hunting camps. Both Amitsulooq and Killersuaq are ideal locations for hunting, as they connect the northern and southern sides of the lake at narrow passages where caribou tend to cross. One of the cultural hunting methods involved trapping the animals at the water's edge, where it was difficult for the caribou to escape.

## 3. Results of the investigation

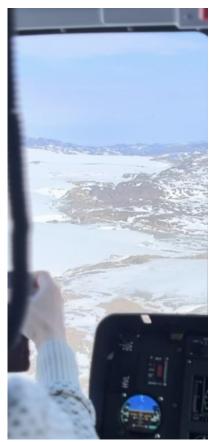


Figure no. 4. Amitsulooq from south/east 14th of June. (Photo: M. Nielsen, 2024)

14th of June

Our plan was to fly to the Tasersiaq area of Amitsulooq with a chartered helikopter H125 from Airgreenland. The goal was the planned 11 days survey. The weather was sunny and around 7-8 degrees Celsius. The lake of Tasersiaq was free of snow at the shores, but the area of Amitsulooq and Killersuaq was still around 60% covered with snow. We decided to return back to Nuuk with the helicopter and to assess in the next days for a new plan to survey the area.



Figure no. 5. Low hanging clouds, Inland of Maniitsoq dir. north-east. 26th of August. (Photo: M. Nielsen, 2024)

26<sup>th</sup> of August.

With The new plan for the survey, from 26<sup>th</sup> of August – 31<sup>st</sup> of August, (6 days) We took off from Nuuk Airport with Air Greenland's H125 helicopter. There was a chance of low hanging clouds and therefore a chance that we couldn't reach Amitsulooq or Tasersiaq safely. After a Fuelstop in Maniitsoq, we tried to approach the area to see if there was a gap between the clouds. However, the Pilot decided to return to Nuuk because the cloud cover was too low and thick.

#### 12th of September.

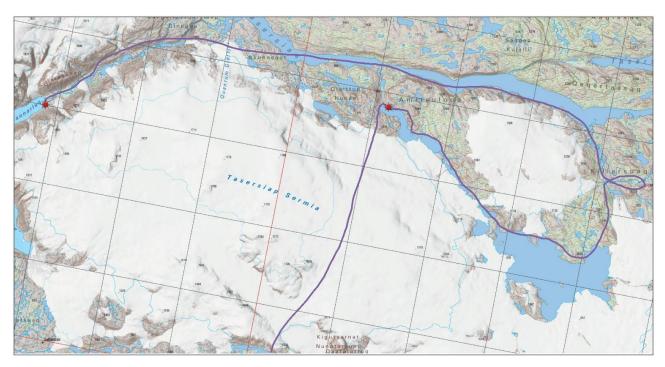


Figure no. 6. Map of the route the 12<sup>th</sup> of September. Purple line, the surveyed area. Red markers the 2 one hour stops. (Source: Nunniffiit)

Due to the late season of the expedition, conducting a survey on foot in September was too risky because of the threat of snow and storms at the high altitudes of the impacted areas. As a result, we had to limit our efforts to aerial surveys using a helicopter. We conducted two landings and

inspected two small areas, each for approximately one hour. The first landing was at Amitsulooq, where a hunting bed was documented, and the second was at the bottom of the Kangerlussuatsiaq, which is believed to have been one of the access routes from fjord to inland for the cultures that used the landscape for caribou hunting.



Figure no. 7. Rugged terrain at Amitsulooq looking to the east. (Photo: M. Nielsen, 2024)

The first stretch near Amitsulooq featured a terrain that was rugged and shaped by glacial movements, as evidenced by the many large stones in the area.



Figure no. 8-9. The landscape of the north-western part of Amitsulooq shows a rugged landscape with gorges and streams. (Photo: M. Nielsen, 2024)

From the air, one could sense a landscape that invited hunting, with the elevations making it a potentially important area for cultures during warmer periods, when caribou sought higher ground closer to the ice sheet.





Figure no. 10-11. Amitsulooq view to the north and remains of caribou bones with lichen, on the ground. (PhotoP: M. Nielsen, 2024)

It was difficult to spot cultural traces from the air due to the presence of many surface stones in the area, but it is likely that remnants of structures exist near the lake's surface and in the adjacent ravines along this stretch.



Figure no. 12-13. Terrain between Amitsulooq and Killersuaq to the North. Flat landscapes with large boulders and small lakes. A landscape builds by expanding and retracting icecap. (Photo: M. Nielsen, 2024)

Between Amitsulooq and Killersuaq, which is already challenging terrain due to its extreme ruggedness, the likelihood of activity appeared very low. This is primarily because it is a remote area that is difficult to access, both overland and by water. Land tongues, ice, and rivers blocked access for vessels such as qajaq, umiaq, or even on foot.





Figure no. 14-15. Landscape around Killersuaq seen to the north and to the south. Landscape dominated by large rivers and valleys. (Photo: M. Nielsen, 2024)

Around Killersuaq, near the meltwater rivers, the landscape also seems inviting for hunting. Several reindeer were observed from the air, as well as potential structures. Fresh polar bear tracks were also seen. This makes the area an interesting prospect for a return visit, as the likelihood of structures used for hunting being present is high.

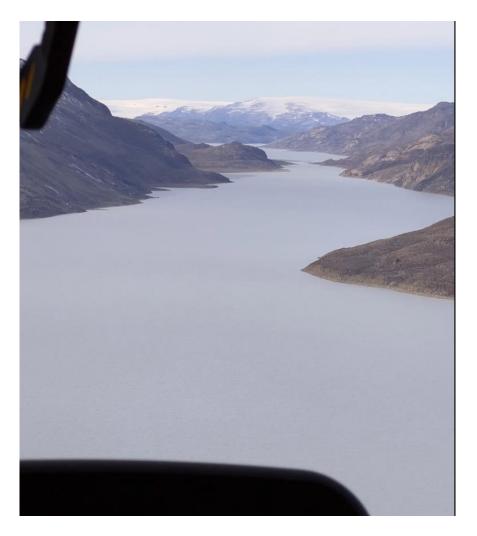


Figure no. 16. Lake Tasersiaq view to the west from the Killersuaq area. (Photo: M. Nielsen, 2024)

At our second stop, at Kangerlussuatsiaq, the aim was to gain an overview of the southern part of the moraine at the head of the fjord to identify potential signs of cultural heritage. The area was characterized by disturbances caused by water from the river. It was difficult to orient oneself due to large rocks, and only recent structures, such as measuring equipment and camps from previous investigations, were visible.



Figure no. 17-18. Kangerlussuatsiaq seen to the north and south. Landscape dominated from water activity, where you can see several riverbeds around the landscape. (Photo: M. Nielsen, 2024)

#### 3.1. Identified sites and features

#### Tas2024001

Dimensions of the structure: 3.50m x 2.50m, with a total of 21 stones used for the hunting shelter (or hunter's bed). Located approximately 5 meters above the lake.



Figure no. 19. TAS2024001, hunter's

bed appr. 5 meters from the lake shoreline. (Source: Google Earth, 2024?)



Figure no. 20. TAS2024001 3,50m x 2,50m 21 rocks used as hunter's bed. (Photo: F. Larsen, 2024)

Use of the large stones for this hunting bed indicates that it might have been used on several occasions. The vegetation has overgrown the stones, leaving them significantly buried beneath the surface, indicating that the structure may have been used several hundred years ago. The typology is unknown; however, it can be concluded that it must have been used by multiple people simultaneously due to its size. The presence of a hunting bed in the area suggests that cultures have been at the region and used the landscape for hunting.

Table 1 Sites and features register.

Site	nr.	Туре	LAT/LON (WGS84, UTM zone 22N)
Killersuaq	Tas2024001	Hunting bed	N 66 09.7630 ° / W 050 44.3800°

### 4. Conclusions and Recommendations

After the Archaeology Group at NKA convened and the results were presented, it was concluded that further survey is still required in two areas closest to Lake Tasersiaq. The discovery of a hunting shelter indicates that the area and the lake near Amitsulooq were used for seasonal hunting, and therefore there is a high likelihood of finding additional structures in the area. An additional survey will be required.

From aerial observations of parts of Killersuaq, it was evident that the landscape was unsuitable for hunting, and therefore parts of that area can be removed of the areas in need of future surveys. However, the area between Killersuaq and Tasersiaq, near the river, is likely to contain cultural remains and should still be a subject for a future survey.

#### The Significance of the Findings

The findings from the area around Amitsulooq and Killersuaq provide valuable insights into how the landscape was utilized by past cultures, including both the Thule culture and Paleo communities. The documentation of the hunting shelter (TAS2024001) at Amitsulooq, located approximately five meters from the lakeshore, suggests a strategic placement close to resources such as caribou. The use of large stones in its construction indicates that the site was prepared for repeated seasonal hunting expeditions.

This type of discovery points to a sophisticated understanding of the landscape's resources and a deliberate exploitation of the terrain for hunting purposes. It is likely that the area around Amitsulooq played a central role as a hunting ground, supported by its proximity to the lake and the opportunity to observe the movements of caribou from an elevated position.

Combined with previous records from the area, including findings at Tasersiaq, the discoveries show a continuity in the use of the landscape for subsistence activities over thousands of years. This supports the hypothesis that these regions served as vital hubs for both mobility and cultural activity in Arctic societies.

The findings also emphasize the need for further investigations, as they reveal potentially undiscovered cultural heritage in the area. The documented hunting bed represents only a small fraction of the archaeological potential in the region, and further reconnaissance is likely to uncover more evidence of past human activity.

## 5. References

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