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SURVEY OF NORTH SHORE OF AASIVISSUIT TASIAT AND VULNERABILITY ASSESSMENT OF THE UNESCO WORLD HERITAGE KEY SITE OF AASIVISSUIT, 28-30 AUGUST 2020

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Management summary

On 28 August 2020, archaeologists from the Greenland National Museum (NKA) performed an overland survey along the north shore of Aasivissuit Tasiat at the request of Qeqqata Kommunia. The purpose of this survey was to evaluate the potential impact to ancient monuments in the area if the municipality's 'Nature Road' (naturvej) plan was extended from its current terminus at the western most edge of Aasivissuit Tasiat directly to the UNESCO World Heritage Key Site of Aasivissuit. Following this survey, from 29-30 August, a general inspection of the greater Aasivissuit Site was performed by the NKA with the UNESCO Site Manager and Park Ranger to assess the site's vulnerability using a new Vulnerability Index Assessment protocol. This report provides recommendations by the NKA on the future feasibility of the road and extension as well as the implications of increased public access to Aasivissuit. This includes not only immediate impacts posed by construction—but also consideration of the long-term consequences of increased annual visitor volumes to the site. Evaluations were made based on a new Vulnerability Assessment protocol modeled after similar approaches developed in Norway and Svalbard. Since no decisions for development of visitor infrastructure (eg. parking, camping areas, trails, signage, etc.) have been officially proposed by Qeqqata Kommunia at the time of the publication of this report, the recommendations remain general and informed only by the current legislation and on-going discussions between the NKA and Qeqqata Kommunia, as well as internal dialogues within the Aasivissuit – Nipisat UNESCO WH Steering and Management groups.

Dansk resume

28. august 2020 udførte arkæologer fra Grønlands Nationalmuseum & Arkiv (NKA) en besigtigelse langs nordkysten af Aasivissuit Tasiat på anmodning af Qeqqata Kommunia. Formålet med besigtigelsen var at vurdere den potentielle effekt på fortidsminder i området, hvis kommunens plan om forløbet af en 'Nature Road' (Naturvej) blev udvidet fra sin nuværende endestation på den vestlige mest kant af Aasivissuit Tasiat direkte til UNESCOs verdensarvsnøglested Aasivissuit. Efter denne besigtigelse udførte NKA 29.-30. august en , generel inspektion af omkring Aasivissuit sammen med UNESCO Site Manager og Park Ranger, for at vurdere lokalitetens udsathed ved hjælp af en ny protokol og indeks for en sårbarhedsvurdering Denne rapport indeholder anbefalinger fra NKA vedrørende den fremtidige gennemførlighed af vej udvidelsen, samt konsekvenserne af øget offentlig adgang til Aasivissuit. Dette omfatter ikke kun umiddelbare virkninger af byggeri-, men også hensyntagen til de langsigtede konsekvenser af øgede årlige besøgende på lokaliteten. Evalueringerne blev foretaget på grundlag af en ny sårbarhedsvurderingsprotokol udviklet efter lignende tilgange i Norge og Svalbard. Da ingen beslutninger om udvikling af besøgsinfrastruktur (f.eks. parkering, camping områder, stier, skiltning osv.) er blevet officielt foreslået af Qeqqata Kommunia på tidspunktet for offentliggørelsen af denne rapport, forbliver henstillingerne generelle og under henvisning til nuværende lovgivning og igangværende drøftelser mellem NKA og Qeqqata Kommunia, samt interne dialoger inden for Aasivissuit - Nipisat UNESCO WH Styre- og Management grupper.

Kalaallisuuata naalisarnera

Augustip 28-ni 2020 Qeqqata Kommuneata suliassiissutigisaa malillugu Nunatta Katersugaasiviani Allagaateqarfianilu (NKA) itsarnisarsiuut Aasivissuit Tasiata sinaa avannarleq pisuffigalugu misissorpaat. Misissuinerup siunertarivaa sumiiffimmi aqqusinniortoqarneratigut kulturikkut eriagisassanut sunniutaasinnaasut, sumiiffik pineqartoq tassaavoq Aasivissuup Tasiata isua killermiit Aasivissuit tungaannut, Aasivissuit tassaammat UNESCOp allattorsimaffianut ilanngussami pingaarnerpaatut inissisimasoq. Tamanna aqqusinniorfissatut eqqartorneqartoq misissorneqarareermat, 29. aamma 30. august NKA-meersut Site Manager taavalu Park Ranger peqatigalugit Aasivissuit eqqaatalu avataaniit sunnerneqarlutik mianernassusaanut uuttueriaasseq nutaaq 'Vulnerability Index Assessment' atorlugu misissorneqarpoq. Matuma nalunaarusiap imarivai, Aasivissuit siunissami aqqusinikkut inunnit tikikkuminarsissagaluarpat tullaatarineqarlerlunilu NKA-p peqqussutai assigiinngitsut. Uani sumiiffimmi sanaartortoqarnerani sunniutit saniatigut aamma siunissami sumiiffiup inunnit tikinneqartualerneratigut sunniutissat innarliisinnaasut eqqartorneqarputtaaq.

Sumiiffiup avataaniit sunnerneqarlutik mianernassusiinut nalilersuinermi Norgemi Svalbardimilu misissueriaatsit ineriartortinneqarsimasut misilittakkat aallaavigalugit ingerlanneqarpoq.

Nalunaarusiap massuma avammut saqqummiunnerani sanaartugassat (asserssuutigalugit; biilinut uninngaarfissiat, sukisaarsarfiit, pisuffissiat, allagartaliussassat il.il.) Qeqqata Kommuneaniit pisortatigoortumik suli sanaartornissaannut aalajangiisoqanngimmat NKA-p Qeqqata Kommuneata aammalu Aasivissuit – Nipisat UNESCOmi aqutsisuusut akornnerminni paasissuteqatigiittarneq taamatuttaarlu inatsisitigut peqqussutaareersut toqqammavigigallassavaat.

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Special thanks:

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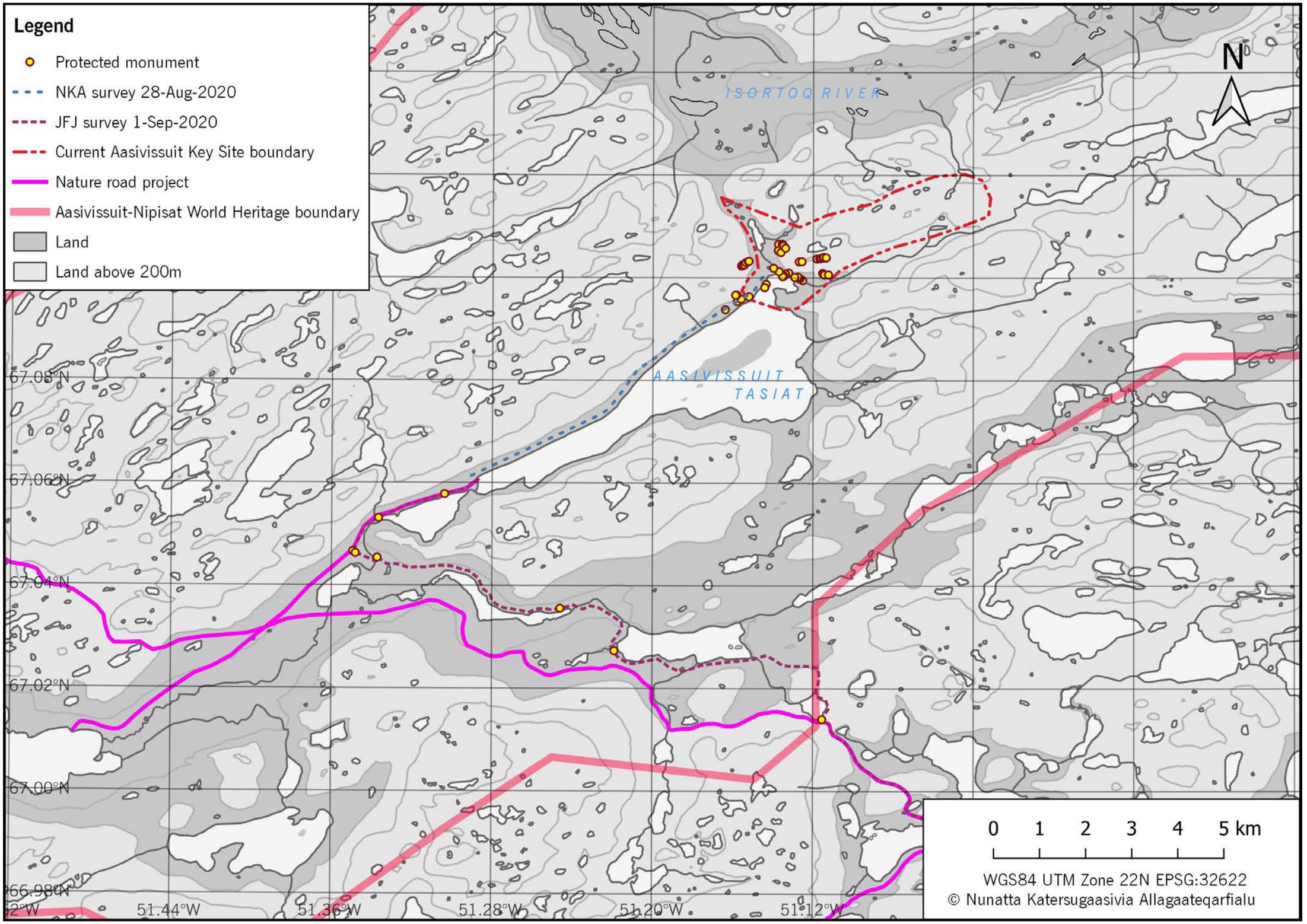

Fig. 1. The UNESCO Key Site of Aasivissuit. Several protected ancient monuments were identified during the surveys performed between 28 August and 1-2 September 2020.

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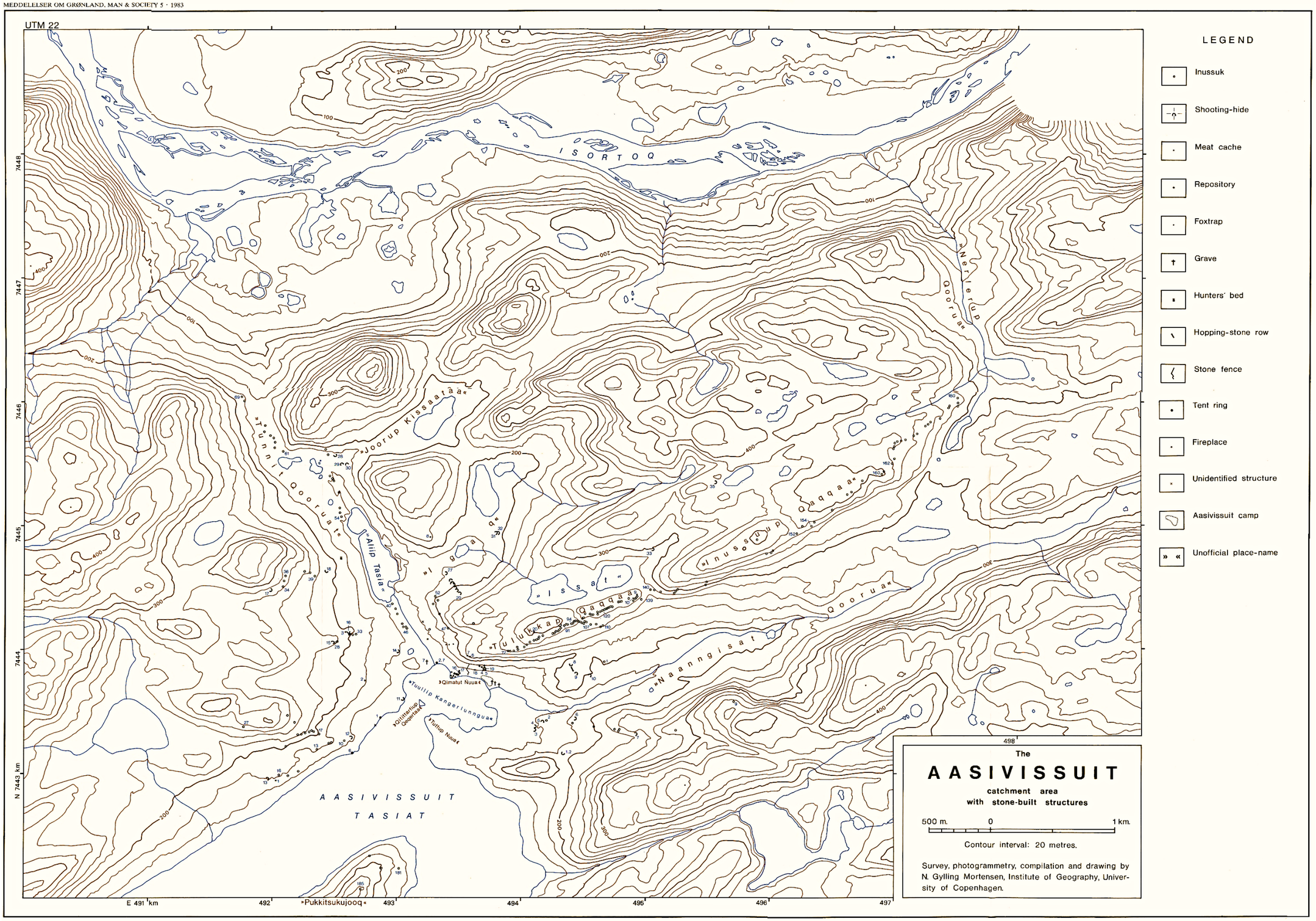


Fig. 2. Survey map showing approximate location of ancient monuments identified in surveys conducted in late 1970s and published in Grønnow, Meldgaard, and Nielsen (1983, Fig. 58).

1. INTRODUCTION

On 28 August 2020, archaeologists from the Greenland National Museum (Nunatta Katersugaasivia Allagaateqarfialu, hereafter NKA) performed an overland survey of a 4 km track of land stretching along the north shore of Aasivissuit Tasiat (Fig. 1) and from 29-30 August performed a general inspection of Aasivissuit to assess the site's vulnerability using a new Vulnerability Index Assessment protocol. The Aasivissuit Tasiat survey was conducted at the request of the Qeqqata Kommunia to identify any potential impacts to ancient monuments in the area that could occur as a result of creating a new direct access road to Aasivissuit, one of seven major Key Sites found within the UNESCO World Heritage property of *Aasivissuit - Nipisat: Inuit Hunting Ground Between Sea and Ice*. This new access route would be an extension of the on-going Nature Road (naturvej) project[1] that will connect the cities of Sisimiut and Kangerlussuaq in Qeqqata Kommunia. The proposed road extension would span the north shore of Aasivissuit, stretching from the road's current terminus at the western most edge of Aasivissuit Tasiat to the current boundary of the UNESCO World Heritage Key Site of Aasivissuit. Archaeological reconnaissance of the original Nature Road project is reported in Harmsen and Myrup (2017). This project plan designates that the majority of the road connecting Kangerlussuaq and Sisimiut will function as an all-terrain vehicle (ATV) and snowmobile track covering approximately 150 km at a width of approx. 3 m, with passing areas placed approximately every 1 km. Over time, the nature road is expected to be developed into a 3 m gravel road with ½ m buffer on each side. Qeqqata Komunnia have suggested that improved access to remote parts of the UNESCO WH property, such as the Key Site of Aasivissuit, will constitute an important element in the future economic development of the region and help to strengthen the municipality's tourist industry.

Aasivissuit, "the Great Summer Camp" is one of Greenland's largest and most archaeologically well-preserved ancient caribou hunting drive systems and the site played an instrumental role in the property's inscription on the UNESCO World Heritage list in 2018 (Jensen et al. 2017). Extending over an area more than 15 km^2, Aasivissuit is a complex and diffuse cultural landscape comprised of several different types of hunting features (e.g., inussuit, stone walls, lookouts, meat caches and shooting blinds) spread over an immense area. The site also possesses a core camp area located on the northeast shore of Aasivissuit Tasiat replete with the remains of 22 tent houses ruins, eight tent rings,

[1] See Tillæg nr. 22 til Kommuneplan 2012-24 for Qeqqata Kommunia Naturvej mellem Sisimiut og Kangerlussuaq.

and several ancient graves. The main caribou drive is one of the largest found in Greenland, stretching 3.9 km running along the southern face of the Tulukkap Qaqqa and Inussuup Qaqqa mountains (Fig. 2).

The deep history of Aasivissuit was revealed by excavations undertaken Grønnow, Meldgaard and Nielsen in the late 1970s (Grønnow, Meldgaard, and Nielsen 1983). Radiocarbon dates, lithic debitage and a microblade from the earliest cultural layers excavated at the Aasivissuit camp area on the shore of Aasivissuit Tasiat demonstrate that Paleoinuit caribou hunters had visited and utilized the site as far back as 200 B.C. (Grønnow, Meldgaard, and Nielsen 1983: 63). Upper layers suggest that Thule culture Inuit were possibly hunting at Aasivissuit as early as the 13th century, only a short time after their initial arrival in West Greenland. From the 13th-16th centuries, archaeological evidence suggests these visits by Inuit were both frequent and at times intensive, possibly recurring on an annual basis.

This report comprises three parts. The first part reports the findings of the NKA's road extension survey along the north shore of Aasivissuit Tasiat and identifies a particular portion of the proposed road extension area to be approached with extreme caution due to the high concentration of archaeological features and ancient monuments in the vicinity identified during both the 2020 and earlier investigations (see Grønnow 1980, Pind et al. 1991, Pasada 1999). The second part focuses on the potential consequences of creating a new public access route to Aasivissuit and how unregulated access for the public would potentially increase the vulnerability of the site and result in the denigration of the World Heritage area's Outstanding Universal Value (OUV). Because the documentation of Aasivissuit's archaeological remains and components is on-going, this report focuses only on the vulnerability of three specific locations within the boundaries of Aasivissuit: (1) the core camp, (2) a suite of hunting features found approximately 750 m to the north of the core camp area (hereafter Hunting Drive North), and (3) the Naanngisat playground. To complete this evaluation, a new Vulnerability Index Assessment protocol has been employed by the NKA to quantify the current state of sensitivity of the ancient monuments and features in these selected locations.

The last section of the report provides recommendations by the NKA on the future feasibility of the road and extension and the short- and long-term implications of creating unregulated public access to Aasivissuit through a new access road.

Fig. 3. NKA archaeologist, Frederik Fuuja Larsen, with Qeqqata Kommunia Project Manager, Laust Løgstrup, along the north shore of Aasivissuit Tasiat.

2. AASIVISSUIT TASIAT 'NATURE ROAD EXTENSION' SURVEY

On 28 August 2020, archaeologists form the NKA walked a seven km track along the northern shore of Aasivissuit Tasiat to the UNESCO Key Site of Aasivissuit. The two-person survey team from the NKA was accompanied by Laust Løgstrup, Projektchef from Qeqqata Kommunia (Fig. 3). In addition to traditional archaeological reconnaissance through ground survey, areal mapping of the track was performed by Mikkel Myrup from the NKA using a Wingtra 1VTOL fixed-wing drone to maximize coverage and digitally map the survey area (Fig. 4). This orthographic mapping of the area provided the additional benefit of providing of identifying any potentially significant features that may have been inadvertently missed by the ground team.

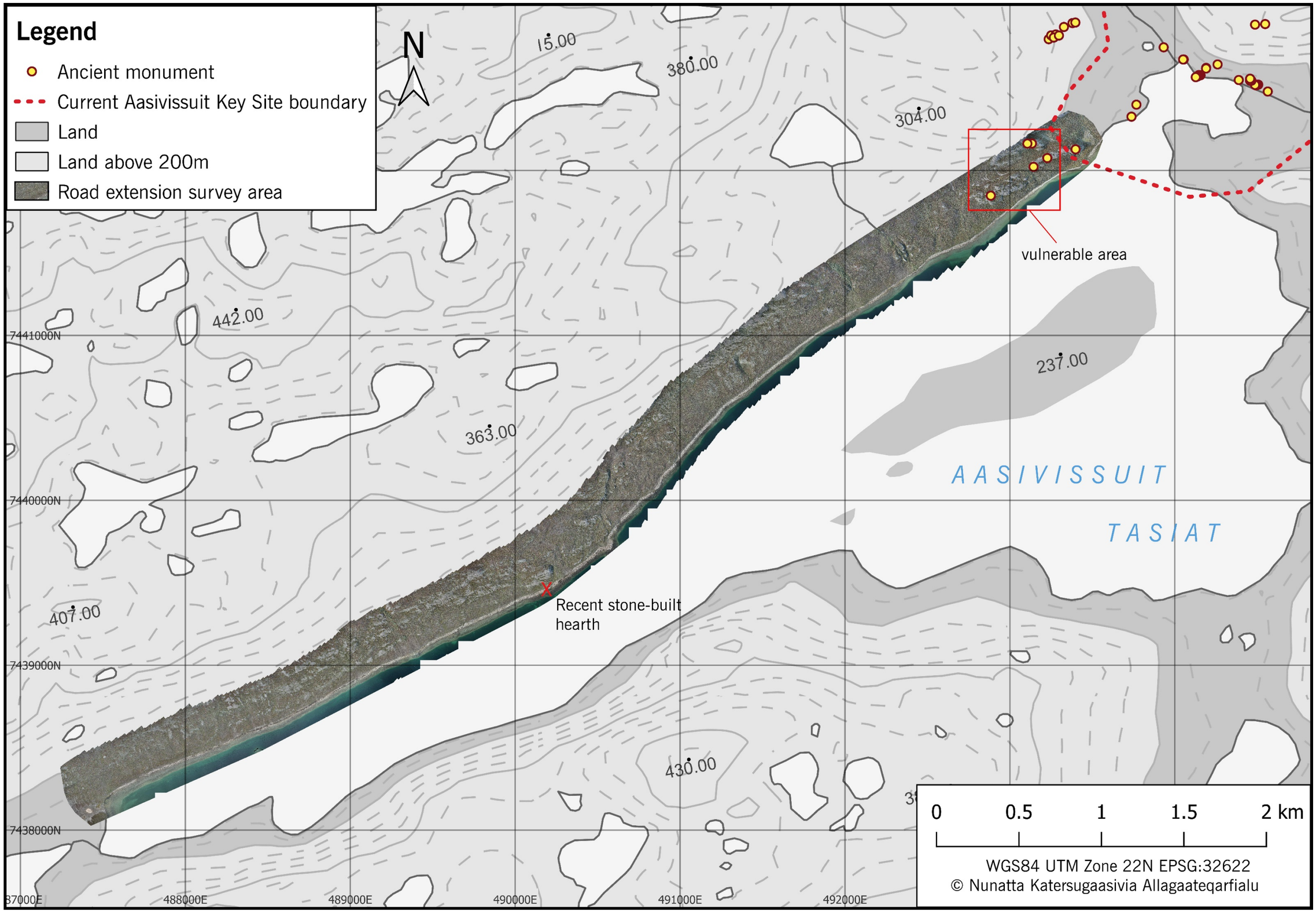


Fig. 4. Map showing the road extension survey area along the north shore of Aasivissuit Tasiat. The most vulnerable area is found to the northeast, near the current Aasivissuit boundary where five (*n* =5) ancient monumnets connected to the caribou hunting drive system oif Aasivissuit are identified. Drone data provided by Mikkel Myrup (2020).

Fig. 5. North shore of Aasivissuit Tasiat, facing northeast. Photo: Harmsen 2020.

Terrain along this stretch of the lake consisted of low-lying shrubs and grass, with occasional dense concentrations of gray willow and dwarf birch (Fig. 5). Along the higher elevation ridges to the north, the vegetation becomes more patchy, with clearings of exposed basement sediment rocks, glacial till and erratic boulders. Following the well-worn caribou tracks that paralleled the edge of the northern shore of Aasiviussuit Tasiat, the survey team began their survey at the westernmost edge of the lake and walked along the north shore until reaching Aasivissuit. Initial results revealed little visible evidence of any recent or ancient human activity along the main track except for one recently stone-built hearth (see Fig. 4). In total, only five ($n = 5$) significant archaeological features are identified in the survey zone that fall outside of the current Aasivissuit site boundary (see 'vulnerable area' in Fig. 4).

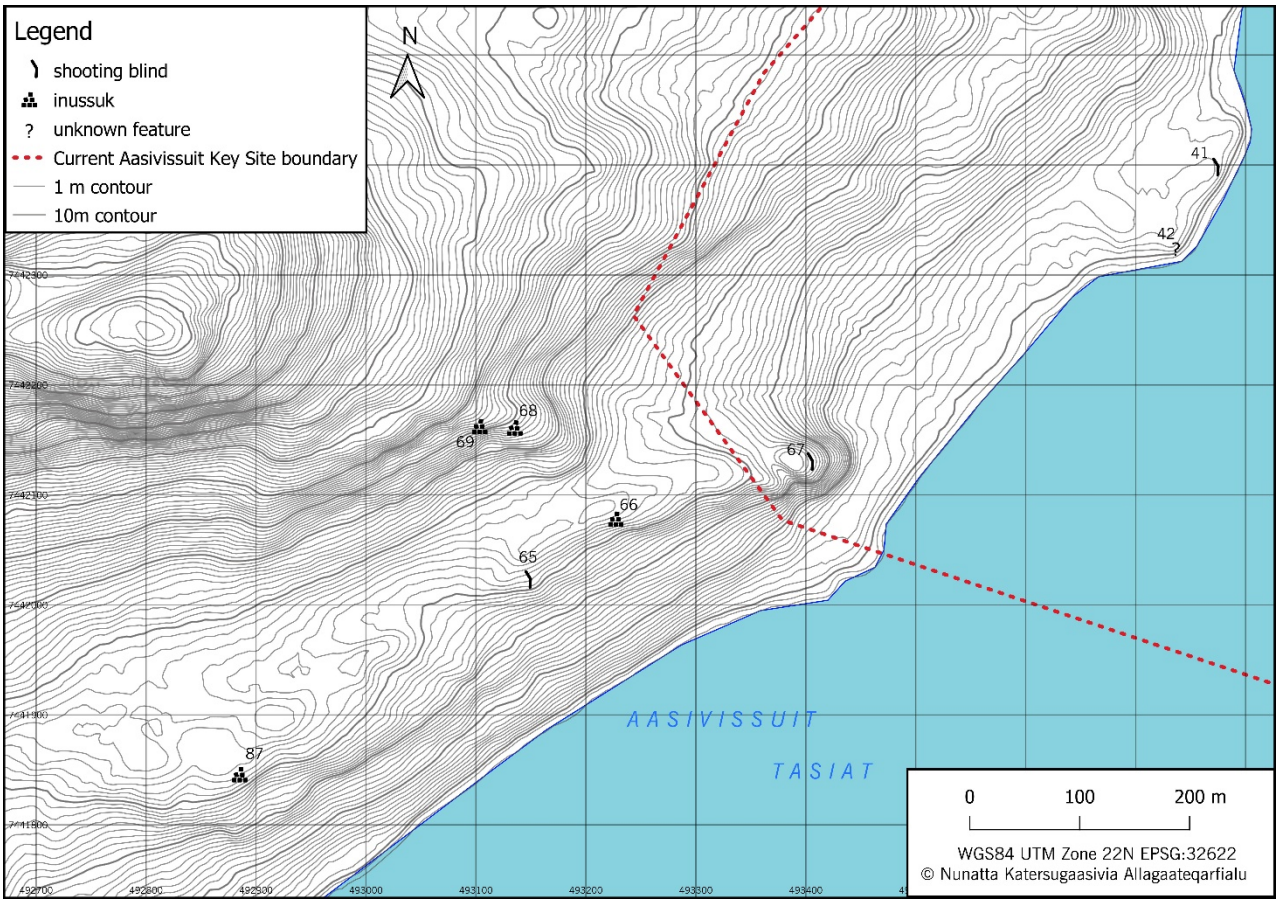


Fig. 6. Vulnerable area with several archaeological features found in cliose proximity to the current Key Site boundary.

The vulnerable area found in the northwest portion of the survey area represents a small cluster of archaeological features connected to the larger caribou drive system of Aasivissuit. As seen in Fig. 6, several of these archaeological features fall outside of the current site boundary. It is important to note that this boundary demarcation of Aasivissuit **is not** an official boundary, but in recent years has been used to define the geographic extent of Aasivissuit as a Key Site within the property (for example, in the allotment of trophy hunting concession areas in the municipality). Table 1 lists these features by type and their geographical coordinates.

Table 1. Ancient monuments and features identified within the northern portion of the August 2020 survey along the north shore of Aasivissuit Tasiat.

ID	Feature type	Northing	Easting	UTM
65	shooting blind	67.09551°	-51.15793°	493140.827, 7442035.613
66	inussuk	67.09591°	-51.15601°	493224.606, 7442080.689
68	Inussuk	67.09663°	-51.15802°	493137.270, 7442161.147
69	inussuk	67.09664°	-51.15879°	493103.955, 7442162.033
87	inussuk	67.09385°	-51.16381°	492884.007, 7441847.017

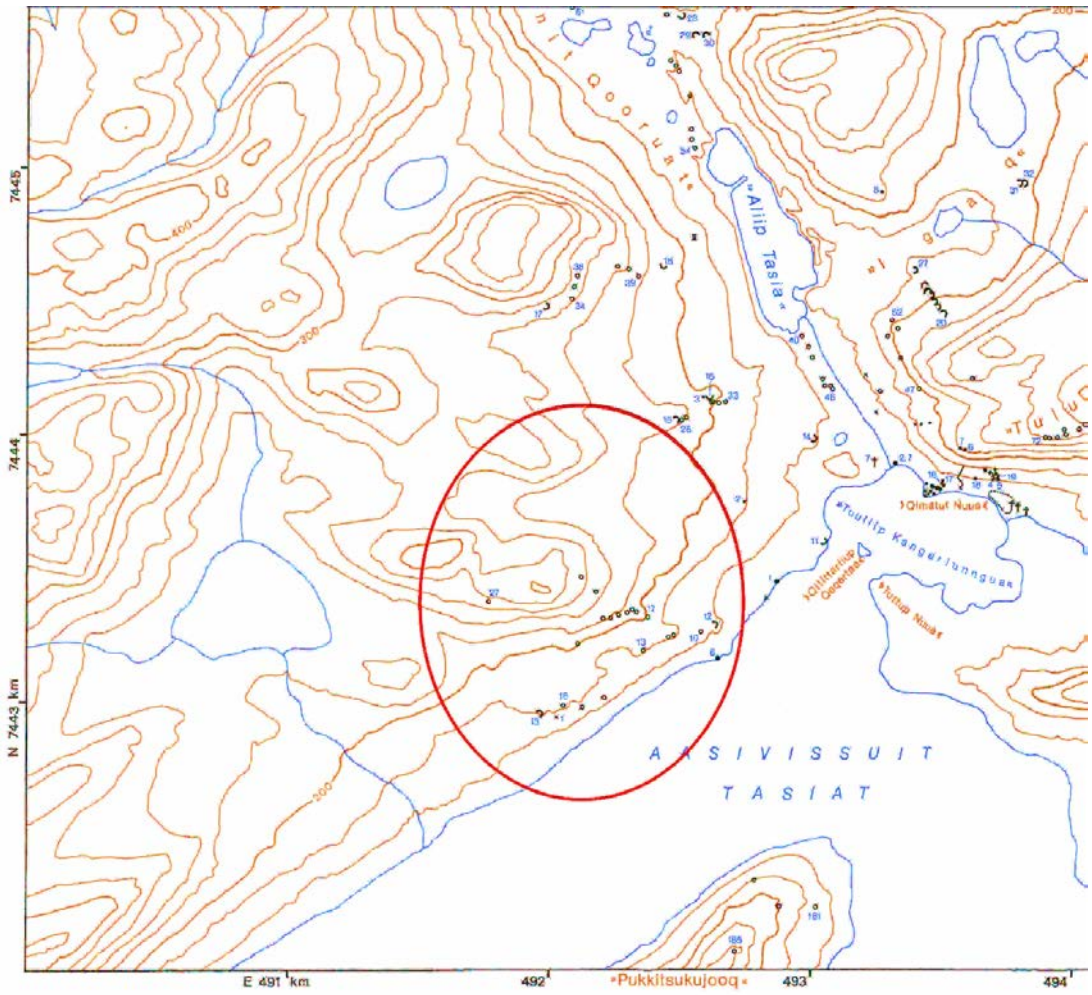


Fig. 7. Portion of the survey map from Grønnow, Meldgaard, and Nielsen (1983, Fig. 58). The red circle indicates the area of higher vulnerability due to the identification of several features that were not positively identified during the August 2020 survey. Many of the features may be currently obscured by increased vegetation growth over the past 30 years.

As is seen in the earlier survey map provided by Grønnow, Meldgaard, and Nielsen (1983, Fig. 58) (Fig. 7), this portion of Aasivissuit contains possibly many other hunting features not identified by the survey team during the investigations in late August 2020. Many of these features are most likely obscured by the increasing vegetation growth seen at Aasivissuit over the last 30+ years. Based on the data collected during the August 2020 survey, it is estimated that only 20-30% of the features in this area have been positively identified and that many other components of the larger hunting drive system remain undocumented in the vicinity. Given the frequency of archaeological ruins within this area, it is recommended that extreme caution be used in placement of the access route in the area extending 1 km from the demarcation of the current Aasivissuit boundary line.

3. VULNERABILITY ASSESSMENT

New public access to Aasivissuit through the extension of the nature road will inevitably bring increased pressures to the site and its archaeological components. These human pressures are bound to be exacerbated by climate-driven changes to the local environment as seen elsewhere in West Greenland and across the Arctic (see Hollesen et al. 2017, Harmsen et al. 2018, Hollesen et al. 2018, Fenger-Nielsen et al. 2019). Vulnerability is defined here as the relative degree to which an ancient ruin, monument or feature is susceptible to or will be adversely affected by human activity or localized climate driven changes to the environment. Indicators for vulnerability include the degree of exposure and potentiality of risk that combine already visible signs of damage or deterioration, as well as prior knowledge of site- and land use *and* as the potential likelihood of increased risk, should a site or unit become a primary destination by tourists and operators.

Determining the degree of vulnerability for Aasivissuit is important, as several areas within the current delimited boundaries of the site have been proposed as potential 'destination points' for tourists visiting the site. These include: (1) the core camp area, (2) Hunting Drive North, and (3) the Naanngisat or 'hopping-stones' playground (Fig. 8). This section of the report provides an assessment of the relative vulnerability of these three high-priority areas. The evaluations were completed during the general inspection of Aasivissuit conducted by the NKA between 29-31 August 2020. Archaeologists from the NKA worked closely with the UNESCO Site Manager and Park Ranger to complete the assessments while on-site, using a new protocol by which different vulnerability factors were ranked using a standardized descriptive approach. This methodology for quantifying vulnerability is modeled after the protocol developed by the Norsk institutt for naturforskning and Norsk institutt for kulturminneforskning and currently employed in Norway and Svalbard for use in national parks and cultural heritage areas (see Hagen et al. 2014, Hagen et al. 2019). Categories and their criteria for assigning point values are described in the following section.

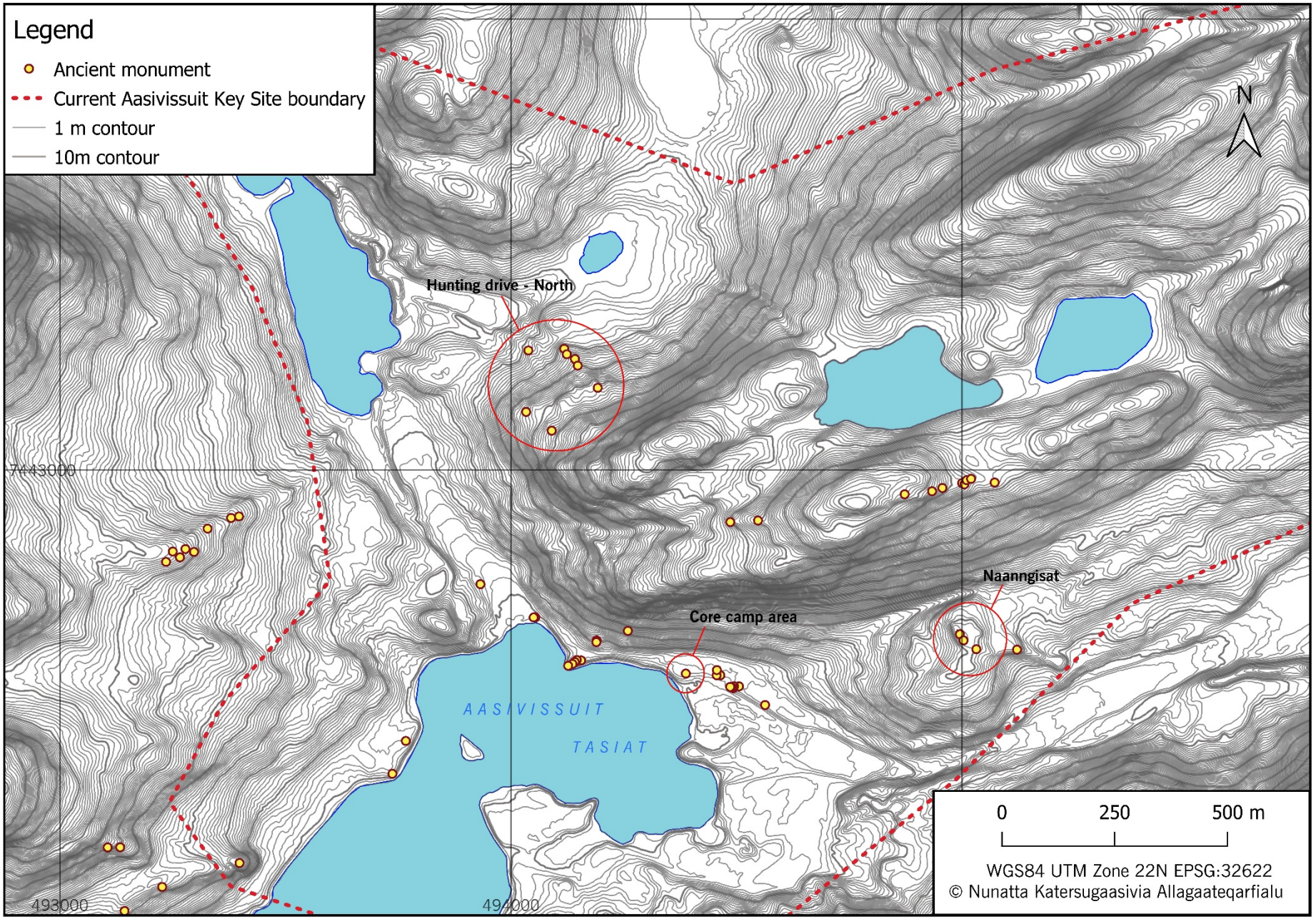


Fig. 8. Three areas within the current delimited boundaries of Aasivissuit are identified as potential 'destination points' for visitors. These include: (1) the core camp area, (2) Hunting Drive North, and (3) Naanngisat or 'hopping-stones' playground.

3.1. Vulnerability Assessment: Aasivissuit

Ancient monuments, ruins and archaeological features in the three study locales were segregated into individual 'units' for evaluation. Units are defined by the diagnostic type of archaeological feature being described (eg. tent house, tent ring, shooting blind, grave, etc.) and include any associated components found in close proximity to the feature (for example surface artifacts or displaced architectural components not found in situ). The evaluation of each individual unit is based on adding a point value to seven separate categories that include: (1) remoteness factor, (2) path, (3) access, (4) readability, (5) state of preservation, (6) objects, and (7) pull-factor. Once collected, unit scores were formulated and averaged to provide an aggregate Vulnerability Index Value (VIV) score for each locale.

1. **REMOTENESS FACTOR (*r*):** The 'remoteness factor' is a determination of how difficult or easy it is for visitors to reach the site or general area where the unit is located, for example by either land, sea or in some cases by helicopter.

1	**Extremely remote.** The site is rarely or never visited by tourists. Reaching the site is very expensive (for example, only by helicopter) and is not possible without extensive logistical support and/or specialized knowledge of the area.
2	**Very remote.** Access to the site is possible but some logistical support/local knowledge is required.
3	**Remote.** The site can only be accessed by a chartered private or commercial boat (e.g. a Targa) or reached overland by foot within a 24-hour period.
4	**Out-of-the-way.** The site is within a short journey (less than half day's hike) from a major town or settlement by foot.
5	**In the neighborhood.** Site is located inside or within a short walk or drive from a major town or settlement. In some cases, a remote site *could be included* in this category if it is known to be a target destination for expedition and/or larger class cruise ships.

2. **PATH (*p*):** This category designates whether a pre-defined walkway or footpath is present to directly or intuitively guide visitors to a safe distance directly to or near the unit. **Note:** caribou trails—although visible paths—are **not** intentional paths. In many cases caribou trails increase vulnerability as visitors will often step off the trail when they encounter an archaeological feature to inspect it more closely if no signage is present.

0,1	**Well-defined**, wide path, dirt road or track (possible to walk side by side)
2	**Clear path**, narrow or wide
4	**No path and/or unclear path**; movement is unrestricted and it is possible to walk over large area

3. **ACCESS (*a*):** This category asks to assess how easy or difficult is it for a visitor to approach within 2-meters of the vulnerable unit? This category also includes considerations of terrain and safety (e.g. loose soil or gravel or slippery rocks), vegetation overgrowth, natural and/or artificial obstructions, etc.

1	**Difficult**
2	**Moderately easy**
3	**Easy**
4	**Very easy**

4. **READABILITY (*r*):** The readability of a unit is a determination of how easy or difficult for a visitor (non-specialist) to understand that they are looking at a ancient or historic feature. This could also include how densely overgrown a unit is with vegetation, making it difficult for a layperson to identify without prior knowledge of the site.

1	**Easy to understand**
2	**Moderately easy to understand**
3	**Difficult to understand**

5. **STATE OF PRESERVATION (*S*):** This category describes how robust the integrity of a unit is at the time of the site visit by the evaluator. Indications of a poor state of preservation include any type of damage from human, animal and natural sources. These include trampling, visible signs of erosion (water, wind, coastal processes), physical disturbance of standing remains, vegetation overgrowth (i.e. gray willow and dwarf birch), looting and/or obvious missing components, modern construction, farming activities, evidence of camping, litter and garbage, and of course previous archaeological investigations, etc. **Note: a high state of 'poor preservation' will always lead to increased vulnerability over the long-term.**

1	**Good to excellent;** little to no disturbance
2	**Medium;** some disturbances
3	**Poor;** heavy disturbances but historic integrity is still present
4	**Extremely poor;** heavy disturbances – this can also mean that the historical integrity of unit has been irreversibly compromised

6. **OBJECTS (*o*):** Does the unit have loose objects or architectural elements that can be picked up, moved, or manipulated? For example: whale bones, wood, human remains, antlers, loose gravestones, scattered surface artifacts, etc.

1	**No visible objects**
2	**A few** (1-5)
3	**Some** (6-10)
4	**Many** (10+)

7. **PULL-FACTOR (*f*):** Is the site or destination advertised or well-known, or does the unit exist as special class of ruins that draw's visitors to the site? (for example, a unique historic feature with a story or visually impressive archaeological remains).

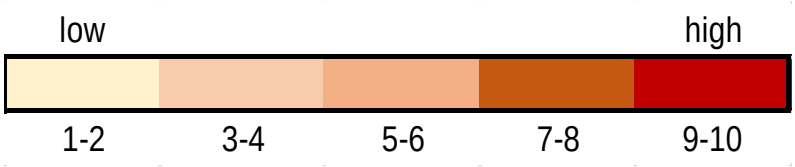
1	**Little to no significance**
2	**Significant,** the unit is an attraction for visitors
4	**Highly significant or main attraction**

Once the unit is scored, the numbers are entered into the equation below, where *V* equals the overall Vulnerability Index Value (VIV) for the unit as a whole:

$$\boldsymbol{V} = \frac{[(\boldsymbol{p} * \boldsymbol{a}) + (\boldsymbol{r} + \boldsymbol{S} + \boldsymbol{o} + \boldsymbol{f})] + \boldsymbol{R}}{\boldsymbol{3,6}}$$

The final value of *V* will be expressed as an integer between 1 and 10, where a score of 1 would indicate the lowest measure of vulnerability and 10 would be extremely vulnerable.

Vulnerability Index Value scale:



The utility of the index lies in the opportunity for archaeologists, project planners and site managers to assess where specific interventions can be made to decrease a unit (or a site's) overall vulnerability (for example adding a path or boardwalk to reduce the *p* value of an individual unit thereby significantly reducing the unit's VIV).

Fig. 9 The core camp area at Aasivissuit, facing north. Photo: Harmsen 2020.

3.1.1. Aasivissuit core camp area

The core camp (Fig. 9) covers an area approximately 3900 m^2 and is located below the southwest slope of Tulukkap Qaqqaa on two flat areas overlooking the little inlet of Tuullip Kangerlunngua. The upper camp is situated in on a flat area of loose gravel and silt with thin grass cover, approximately 6-8 m above the level of the lake. This terrace resides above a lower sloped oval shaped clearing to the southwest and closer to the lake shore. This lower terrace rests on a bed of turf and silt with dense vegetation cover surrounding the cluster of archaeological features (Grønnow, Meldgaard, and Nielsen 1983: 54). Several well-worn and deep caribou trails cross the site.

On the upper terrace twelve tent-house ruins and 4 tent rings are identified (Fig. 10, feature nr. 1-16). On the lower terrace 10 tent houses and 2 tent rings are still visible on the surface (Fig. 10, nr. 17-28). Detailed descriptions of the features and excavations at the core camp can be found in Grønnow, Meldgaard, and Nielsen (1983:54-80).

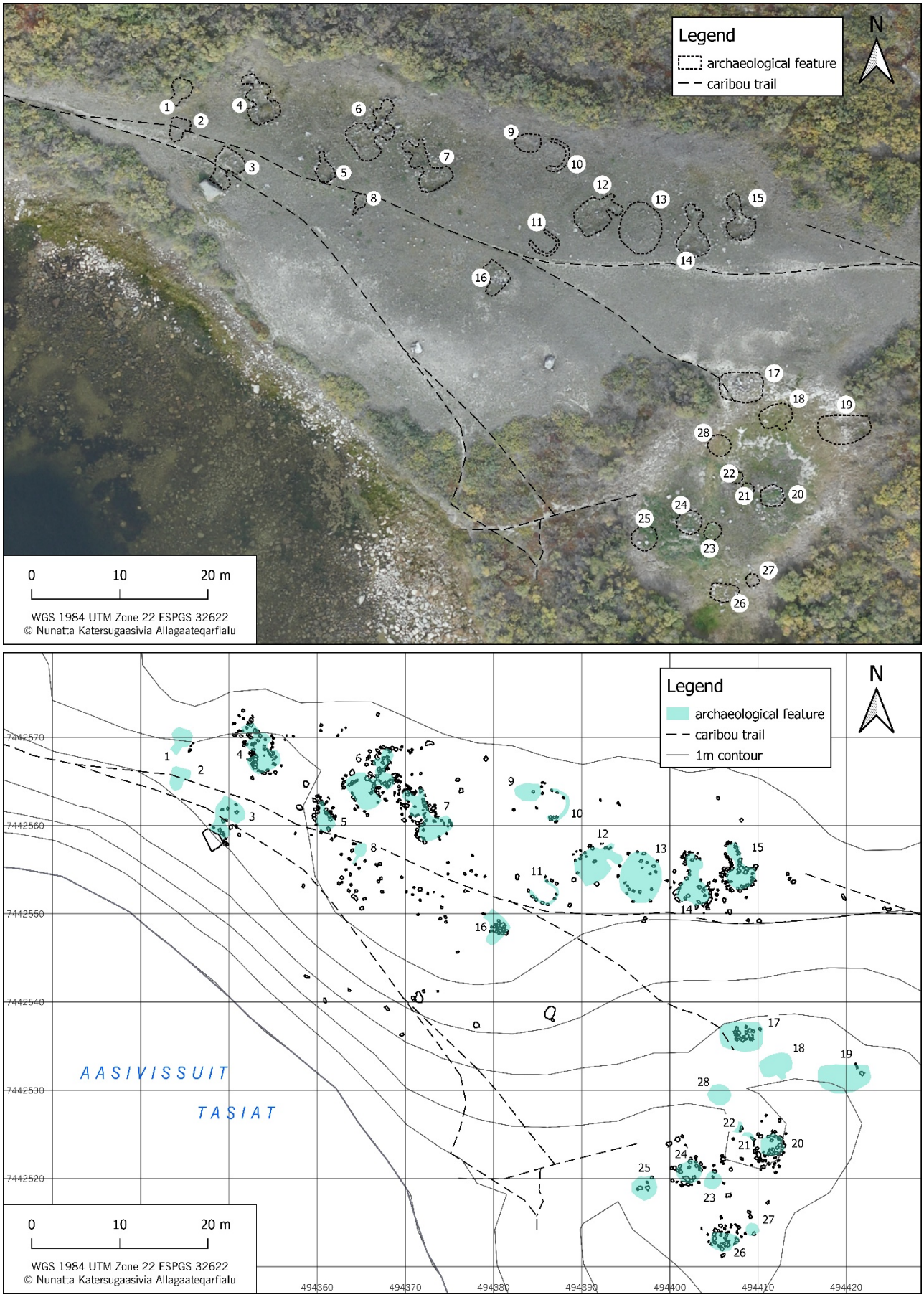


Fig. 10. Site maps of the core camp area identifying the main features. On the upper terrace twelve tent-house ruins and 4 tent rings are identified (nr. 1-16). On the lower terrace 10 tent houses and 2 tent rings are still visible on the surface (nr. 17-28).

Using the Vulnerability Assessment protocol, all archaeological features of the core camp were scored to provide a final average VIV for the entire area.

Table 2. VIV calculation for the core camp area at Aasivissuit.

Unit	feature type	R.F.	Path	Access	Readability	State of preservation	Objects	Pull-factor	VIV score
1	tent house depression	3	4	4	3	2	4	4	9
2	tent house depression	3	4	4	3	3	4	4	9
3	tent house depression	3	4	4	2	3	4	4	9
4	tent house depression	3	4	4	1	2	4	4	8
5	tent house depression	3	4	4	1	2	4	4	8
6	tent house depression	3	4	4	2	2	4	4	9
7	tent house depression	3	4	4	1	2	4	4	8
8	tent house depression	3	4	4	3	3	4	4	9
9	tent house depression	3	4	4	3	3	4	4	9
10	tent ring	3	4	4	3	3	4	4	9
11	tent ring	3	4	4	2	2	4	4	9
12	tent house depression	3	4	4	1	2	4	4	8
13	tent ring	3	4	4	3	2	4	4	9
14	tent house depression	3	4	4	1	2	4	4	8
15	tent house depression	3	4	4	1	2	4	4	8
16	tent house depression	3	4	4	3	3	4	4	9
17	tent house depression	3	4	4	3	3	4	4	9
18	tent house depression	3	4	4	3	3	4	4	9
19	tent house depression	3	4	4	1	3	4	4	9
20	tent house depression	3	4	4	2	2	4	4	9
21	tent house depression	3	4	4	3	2	4	4	9
22	tent house depression	3	4	4	3	2	4	4	9
23	tent house depression	3	4	4	3	3	4	4	9
24	tent house depression	3	4	4	2	3	4	4	9
25	tent ring	3	4	4	3	3	4	4	9
26	tent house depression	3	4	4	3	2	4	4	9
27	tent house depression	3	4	4	3	3	4	4	9
28	tent ring?	3	4	4	3	4	4	4	9
								Average score =	9

The core camp area was formulated with an overall VIV score of 9 out 10, ranking it as an extremely vulnerable area that requires significant interventions prior to any opening of the area to the public. The interventions should include both visible and demarcated trails and signage, as well as rope or chain barriers to indicate areas where visitors should not enter or traverse while on site.

Fig. 11. Hunting Drive North, facing NE. The arrow in the photo identifies the remains of a well-preserved shooting blind. Photo: Jacob Ørum, Aarhus School of Architecture.

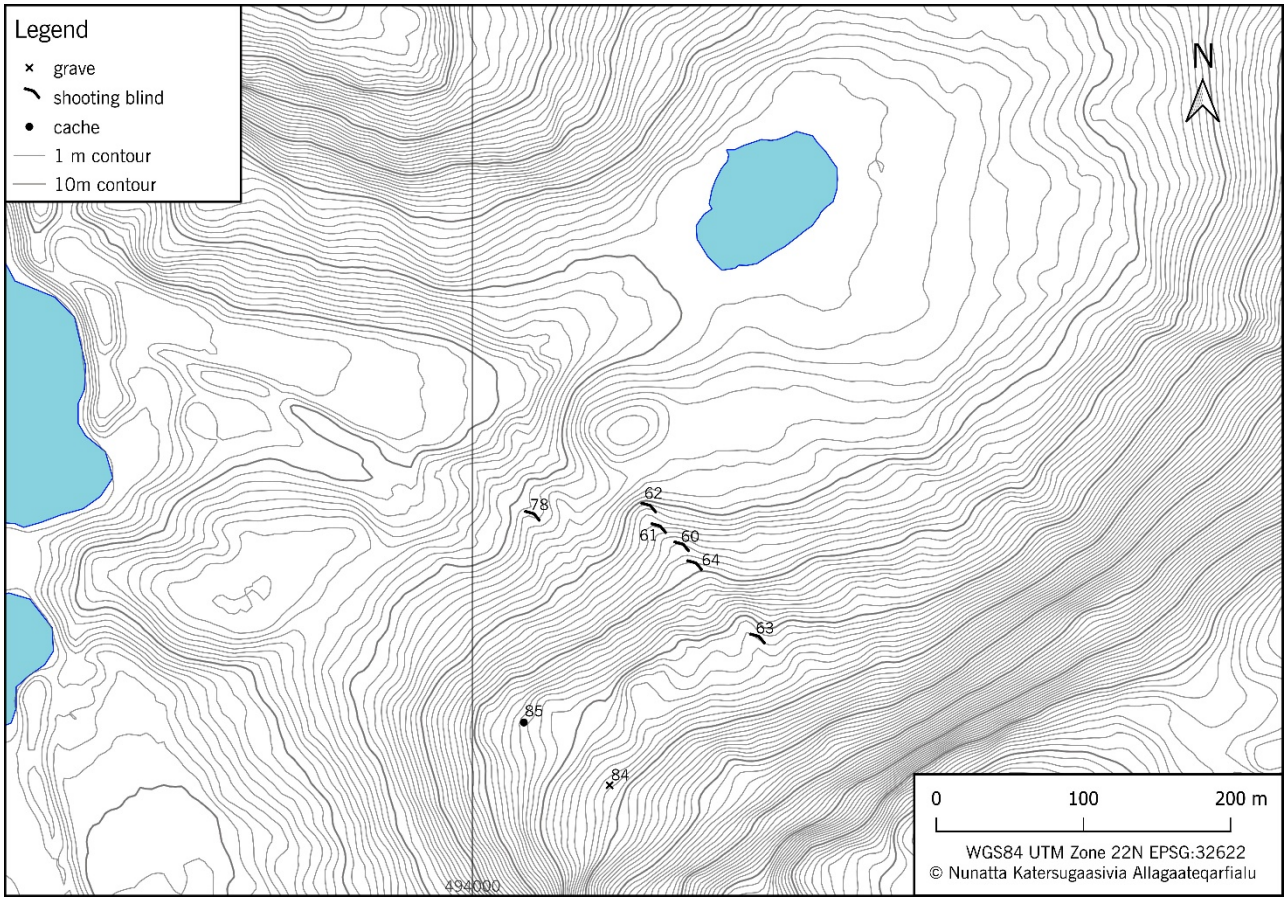


Fig. 12. Location of archaelogical features found in the Hunting Drive North, approximately 750 m north of the core camp area at Aasivissuit.

3.1.2. Hunting Drive – North

Approximately 750 m to the north of the core camp area is a cluster of archaeological features that include six shooting blinds, one ancient grave and a possible ancient meat cache. Referred to by Grønnow et al (1983:45) as “shooting-coverts” or “shooting-hides”, as many as 35 of these features have been identified across Aasivissuit. These shooting blinds are usually comprised of about 10-12 large cobbles, laid in a row, and supported by smaller stones or integrated into already existing natural features (i.e. boulders). Dimensions of the blinds can range between 1.5 to 2 m in length and .25 to .5 m in height. Shapes comprise both straight lines or slight arcs and usually oriented to camouflage a hunter to a nearby caribou trail where chances of successfully shooting a prey were greatest (e.g., Fig. 11). Technical illustrations of four of the shooting blinds from Hunting Drive North are provided in Fig. 13. Due to the high degree of integrity of the shooting blinds in this part of Aasivissuit, this area has been suggested as a potential point of interest for visitors because of the demonstrative

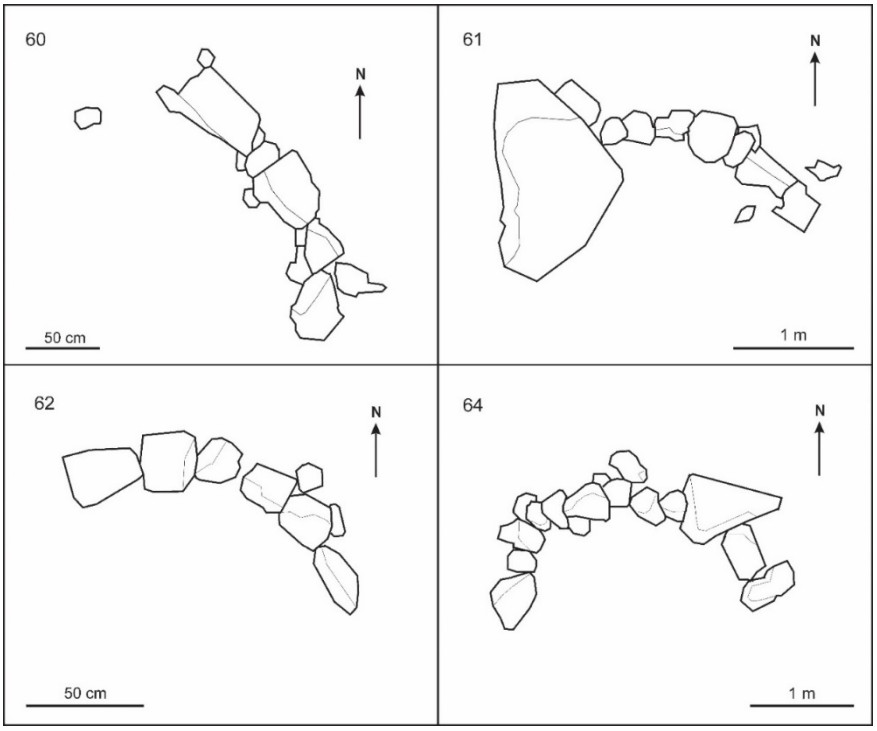


Fig. 13. Examples of shooting blinds from Hunting Drive – North. Locations of these features 60, 61, 62 and 64 can be found on the map in Fig. 12.

value of the archaeological features in showing how Thule and Historic Inuit used this landscape for hunting.

Using the Vulnerability Assessment protocol, all archaeological features of Hunting Drive North were scored to provide a average VIV score for the area.

Table 3. VIV calculation for the area, Hunting Drive North at Aasivissuit.

Unit	feature type	R.F.	Path	Access	Readability	State of preservation	Objects	Pull-factor	Vulnerability score
60	shooting blind	3	4	2	2	1	4	4	6
61	shooting blind	3	4	2	2	1	4	4	6
62	shooting blind	3	4	2	2	1	4	4	6
63	shooting blind	3	4	2	2	1	4	4	6
64	shooting blind	3	4	2	2	1	4	4	6
78	shooting blind	3	4	2	2	1	4	4	6
84	grave	3	4	2	3	1	4	4	6
85	cache	3	4	2	3	1	4	4	6
								Average score =	6

Hunting Drive North was calculated with an overall average VIV score of 6 out 10, ranking it as a moderately vulnerable. Some interventions would be necessary prior to any opening the area to the public. The interventions should include both visible and demarcated trails and signage.

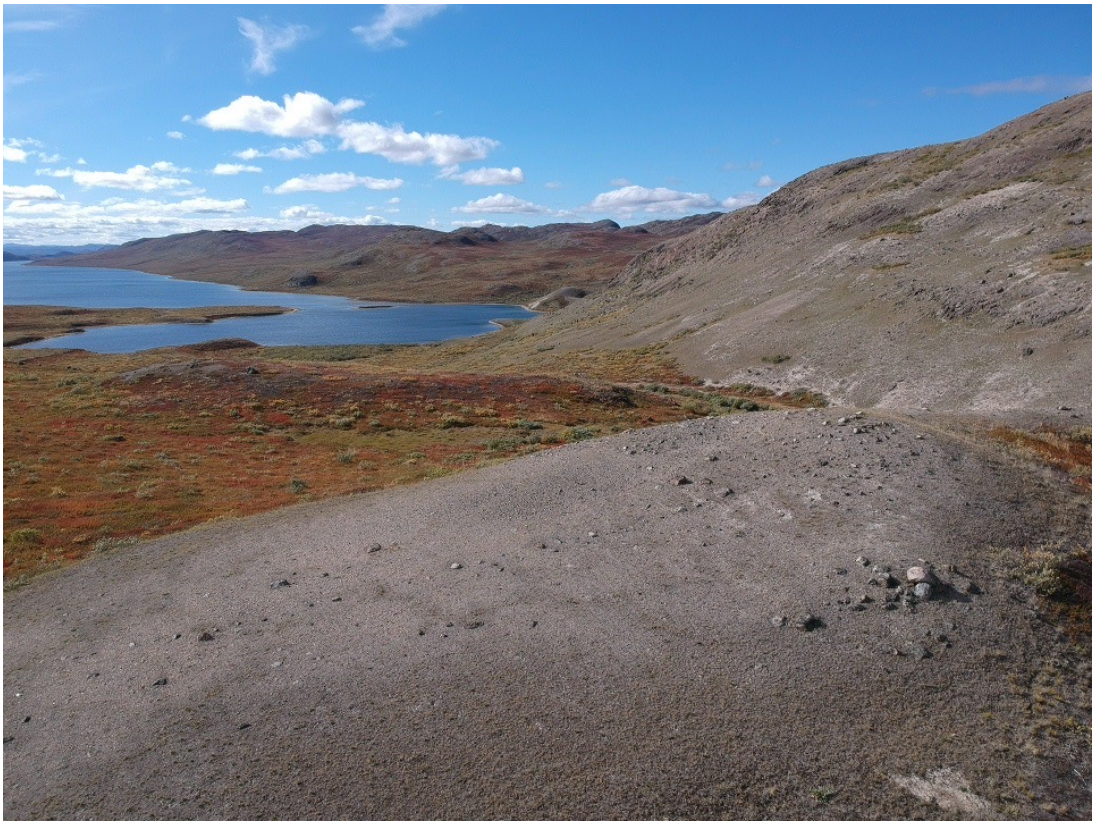


Fig. 14. The naanngisat or 'hopping-stone' playground, facing west. Aasivissuit Tasiat can be seen in the background. Photo: Harmsen 2020.

3.1.3. Naanngisat

The Naanngisat or hopping-stone playground lies about 650 m east of the core camp on a ridge clearing parallel to the south face of Naanngisat Qoorua (Fig. 14). The naangissat extends approximately 24 m, sloping down the ridge in an ESE orientation and is comprised of about 40 stones (Fig. 15) The naangisat at Aasivissuit is historically documented (eg. Mathiassen 1934, Gripp 1942, see Grønnow et al. 1983:50), providing insight into a different aspect of the day-to-day life and leisure activities of both children and adults at Aasivissuit in the past. Two shooting blinds are also found near the naanngisat (Fig. 16), with the northern feature (nr. 47) displaying some elements of at one time possibly possessing a more cohesive square form that could be interpreted as a remnant of a miniature child's 'tent house' like the ones observed on the island of Nipisat found on the outer coast. Conclusions remain speculative on this feature, but the overall character of this area suggests that it was an area included both recreation and hunting.

Fig. 15. Technical illustration of the naanngisat found at Aasivissuit from Grønnow, Meldgaard, and Nielsen (1983:50, Fig. 54A).

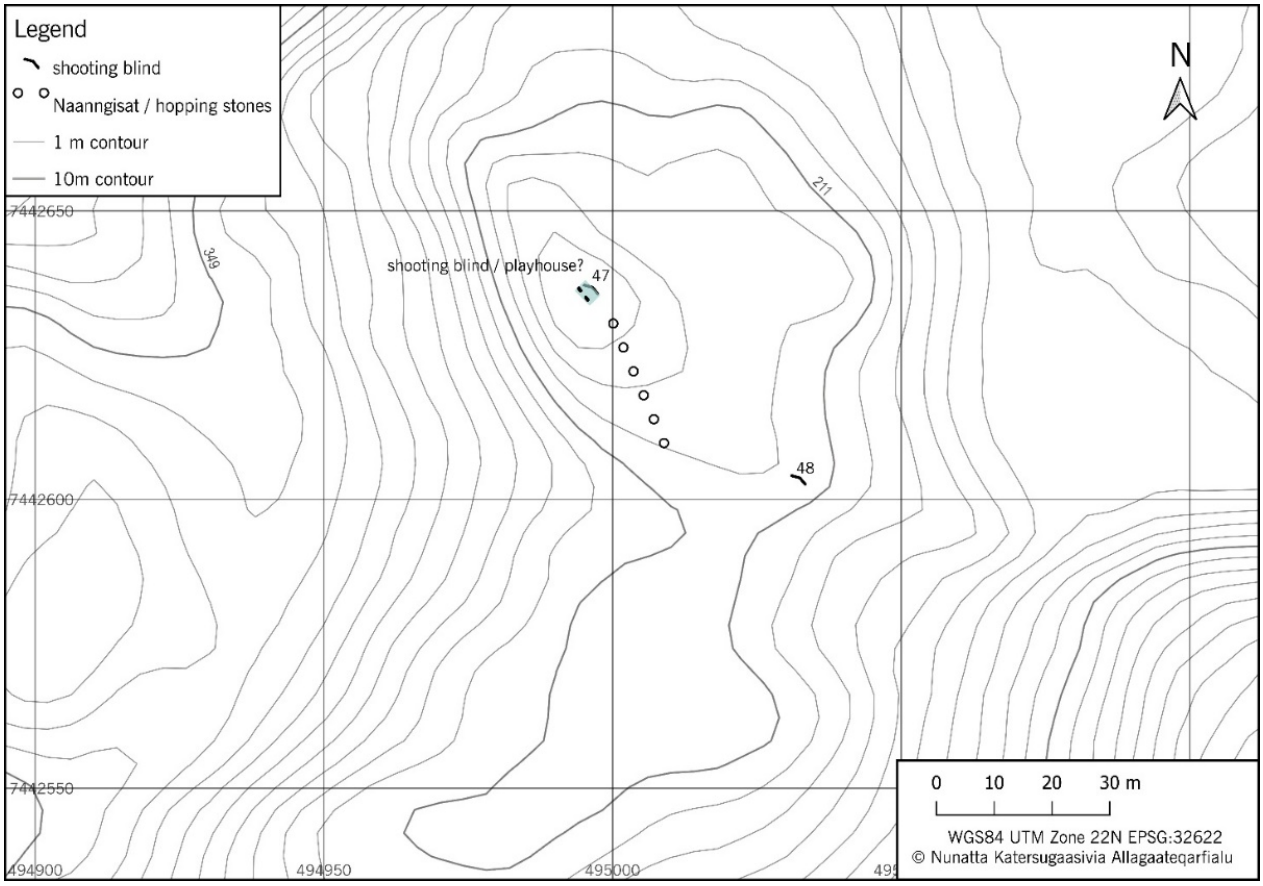


Fig. 16. Naanngisat playground. Two hunting blinds (features nr. 47 and 48) are found near the naanngisat. Feature 47 may have at one time served as a child's playhouse.

Using the Vulnerability Assessment protocol, all archaeological features of the Naanngisat playground were scored to provide a final average VIV for the area.

Table 4. VIV calculation for the Naanngisat playground at Aasivissuit.

ID	feature type	R.F.	Path	Access	Readability	State of preservation	Objects	Pull-factor	Vulnerability score
46	naanngisat (hopping stones)	3	4	4	3	1	4	4	9
47	play-house? / shooting blind?	3	4	4	3	1	4	4	9
48	shooting blind	3	4	4	3	1	4	4	9
								Average score =	9

The Naanngisat playground was calculated with an overall average VIV score of 9 out 10, ranking it as an extremely vulnerable area that requires significant interventions prior to any opening up of the area to the public. The interventions should include both visible and demarcated trails and signage, as well as rope or chain barriers to indicate areas where visitors should not traverse or move. Above all, strict interventions should be made to prohibit visitors from jumping on the Naanngisat.

4. SUMMARY AND RECOMMENDATIONS

4.1. Legal basis for heritage protection

All cultural assets, monuments and archaeologically sensitive areas older than AD 1900 in Greenland are legally protected by Inatsisartut Act no. 11, 19 May 2010 on Cultural Heritage Protection and Conservation (hereafter, the Heritage Act), providing the legal designation of ancient features and historic buildings in Greenland that possess scientific, historic and social value. The Inatsisartut Act no. 11, 19 May 2010 allows for the Government of Greenland (Naalakkersuisut) under the direction of the NKA, to set aside these features and monuments as nationally protected assets as well as change or annul an existing designation or other cultural heritage conservation measures which may pose a threat to the enduring legacies connected to these elements. Designation means that no destructive or damaging activities may take place within the immediate vicinity of the feature (2 m) apart from public access. The NKA can grant exemption to this law under special circumstances.

Additionally, the Selvstyrets bekendtgørelse nr. 1 af 30. januar 2018 om anden kulturarvsbeskyttelse af et nærmere afgrænset område i Vestgrønland omkring Aasivissuit-Nipisat also provides special additions to the Heritage Act, requiring the NKA and the municipal council of Qeqqata Kommune and ensure that the WH area's Management Plan is observed in accordance with the development of the property. This includes continuous dialogue occur between the UNESCO Site Manager, the municipality, the Aasivissuut – Nipisat Steering Committee, local stakeholders and other relevant parties to ensure updates and changes to the property are in alignment with protecting the property's Outstanding Universal Value (OUV).

Lastly, a new executive order has taken effect, Selvstyrets bekendtgørelse nr. 38 af 1. oktober 2020 om vurdering af aktiviteters virkning på kulturarven i kulturhistoriske områder. This order establishes the prerequisite for any actor wishing to conduct an activity which may impact the heritage values of a UNESCO World Heritage area to consult with the NKA in advance of the activity. This means that the NKA will assess whether the activity can be expected to have a significant impact on the cultural heritage of the area, and if so, what remedial measures should be taken to mitigate or decrease the scale of the impact. In all cases, the NKA and municipality will involve the respective Steering Group in the final assessment of the proposed activities.

4.2. Recommendations

4.2.1. Nature road extension

- The NKA believes that at this time, based on the available information and survey data, that a road extension is feasible along the north shore of Aasivissuit Tasiat. However, as noted in the report, several identified and unidentified hunting features connected to the Aasivissuit hunting drive system are present in the immediate area west of the site boundary are. Many of these features have most likely been obscured by the increasing vegetation growth over the last 30+ years and it is therefore estimated that only 20-30% of the features in this area have been positively identified and that many other features may remain undocumented in the immediate vicinity. Given the frequency of ancient monuments within this portion of the track, it is recommended that extreme caution be used in placement of the access route in the immediate area extending 1 km west from the demarcation of the current Aasivissuit boundary line (Fig. 17).

- Any activity planned in the area will still require that an official proposal and open public hearing for construction of the road extension be produced by the Kommunia. This proposal will be subject to the stipulations of Selvstyrets bekendtgørelse nr. 38 af 1. oktober 2020. Once a formal proposal for the road extension is made, the NKA will take into account the nature and scope of the precise activity, including in the extent to which the property's OUV is expected to be affected. All evaluations will involve the Steering Group in the final assessment.

4.2.2. Public Access to Aasivissuit

- The creation of a direct public access route to the doorstep of Aasivissuit brings with it a surplus of new challenges for the management and protection of the site and the World Heritage property's OUV. As is shown in the Vulnerability Index Assessments calculated for (1) the core camp area, (2) Hunting Drive North, and (3) the Naanngisat playground, all areas scored high on the Vulnerability Index (9, 6, and 9 respectively) requiring that significant interventions be made prior to any "opening up" of the area to the general public.

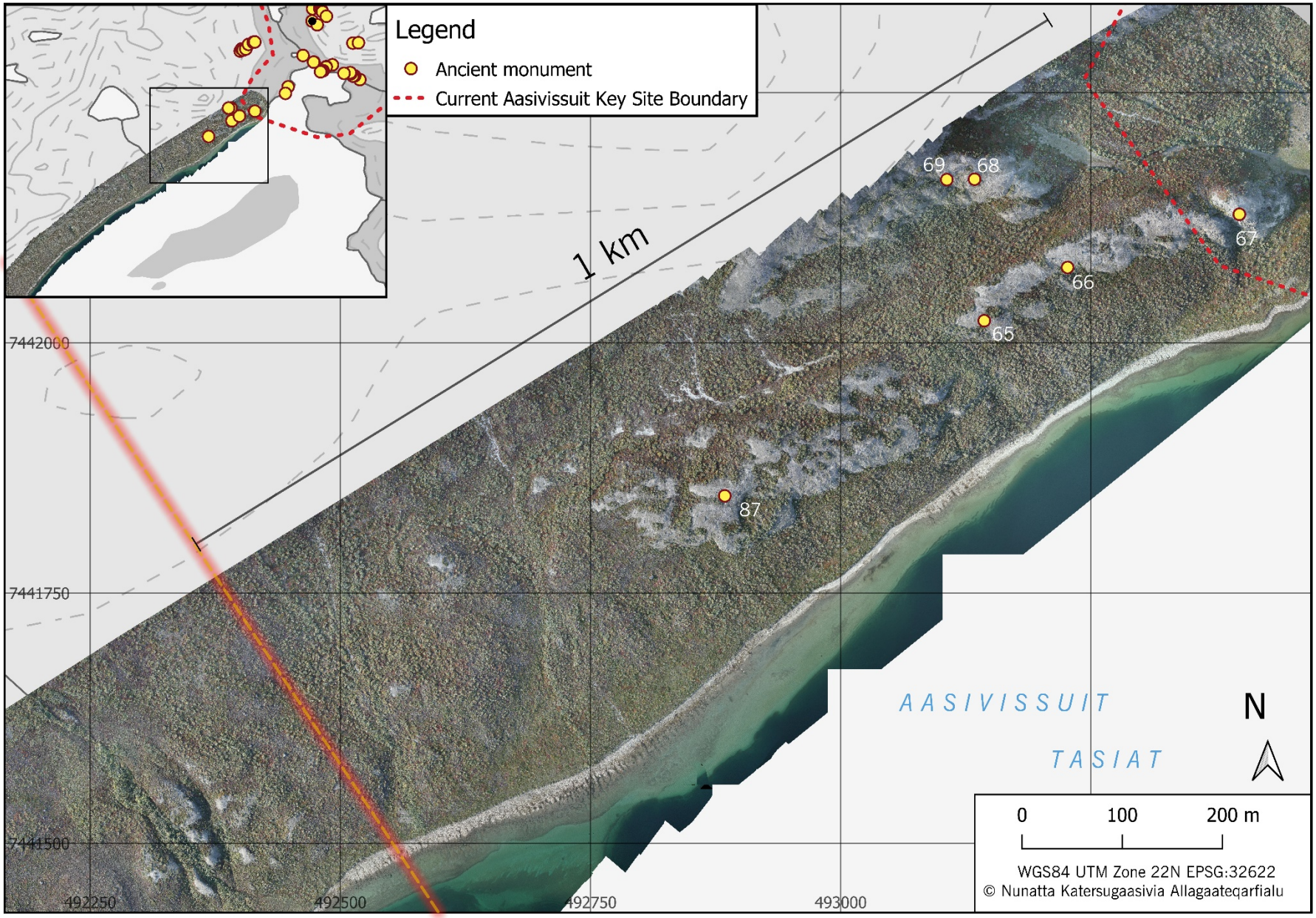


Fig. 17. Vulnerable area in the NE section of the survey area. Extreme caution be used in placement of the access route in the immediate area extending 1 km west from the demarcation of the current Aasivissuit boundary line.

- The creation of a public access route to Aasivissuit should not proceed before interventions and protections to the areas are set in place. General access to Aasivissuit without the necessary infrastructure places the entire site in a precarious state of risk, as uncontrolled access to the site would only result in irreversible damage to the area. These concerns include (but are not limited to): increased erosion through foot traffic, damage and manipulation to archaeological features and their components, illegal ATV and snowmobile use, illegal camping and other problems resulting from lack of sanitation and waste removal on site.

- Serious consideration should be given to opening up Aasivissuit in various stages or pre-determined timelines to coincide with the installation of authorized pathways and dissemination materials and signage. For example, in the early stages, conditions could be made to only allow visitors to enter the site under the supervision of an NKA certified guide or operator, trained in navigating the sensitive areas of Aasivissuit to minimize impacts. This could also include setting quotas on the frequency and number of visitors permitted to enter Aasivissuit at certain times of the year.

In all cases the NKA and the Steering Committee should be consulted by Qeqqata Kommunia in advance of any work and that all activities for development of the site and surrounding area are included as part Aasivissuit – Nipisat's official Management Plan in the coming years.

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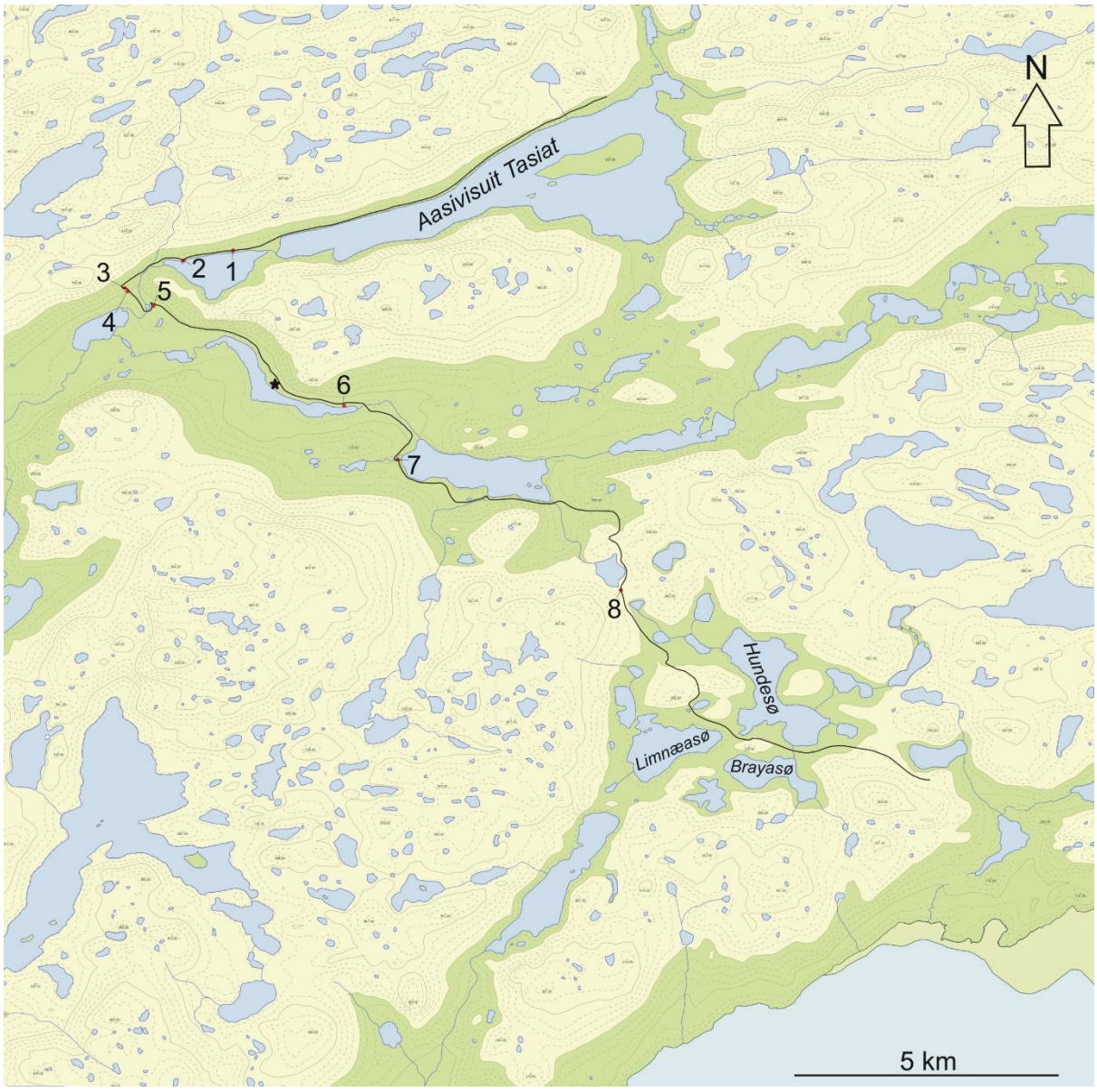
Survey of alternative road tracks between Aasivissuit Tasiaat and Kellywille, Kangerlussuaq

Jens Fog Jensen, National Museum of Denmark

The route was walked by the author in compagny with Laust Løgstrup Qeqqata Kommunia and Henrik Larsen Rambøll Greenland departing from Aasvissuit at august 31st and arriving at Kellyville sep the 1st 2020. Overnight camp was established at the eastern shore of SSE-NNV oriented lake to the southwest of Aasivissuit Tasiat (★ on map below). Observed features, and camp sites along the route was briefly described, positioned by hand held GPS, and photographed. No ducumentation was carried out along the northern shore of Aasivisuit Tasiat since this part of the route had already been walked by staff of the Greenland National Museum and Archives. Similarly the three first localities (1, 2 and 3) were only positioned due to the fact that the author was in doubt wether they had been documented previously.



Map showing the route and location of sites numbered 1 to 8.

List of registered sites / features with coordinates

no	object	N	W
1a	tent ring	67.05769	051.30392
1b	tent ring	67.05756	051.30375
2	inussuk and hearth	67.05367	051.32635
3	shooting blind	67.04655	051.34938
4	tent ring	67.04562	051.34713
5	rent ring	67.04562	051.34713
6	inussuk	67.03522	051.24445
7a	tentring	6702737	051.21949
7b	tentring	67.02730	051.21930
7c	hearth / inussuk?	67.02747	051.21952
7d	shooting blind / inussuk?	67.02753	051.21948
8	inussuk	67.01332	051.11028

1) Tent rings at lake to the west of Aasivissuit Tasiat

Presumably this locality have been mapped during previous surveys, however the site have not yet been included in the Nunniffiit database. It is therefore listed here, if nothing else as a remeinder for incluson in the register of protected sites in Greenland. The site is situated on a low but prominent sparsely grass covered ridge at the northerns side of the lake just to the west of Aasivissouit Tasiaat. In addition to the tent rings there is at least one open air hearth, and a closer inspection may well reveal more stone built features.

Site 1: Tent rings at northern shore of lake to the west of Aasivisuit Tasiat

2) **Inussuk, hearth and rudimentary tent ring**. From the northern shore, a minor point juts into the westernmost narrow elongation of the lake situated to the west of Aasivissuit Tasiaat. Some rudimentary tent rings and open air hearths are situated on the point. The observed remnants appear to be of relatively recent origin.

3) **Shoting blind**

Site 3: Shooting blind on ridge near the steep slope separating the 'Tasersuaq valley' and the Aasivisuit Tasiat valley. Looking from east towards west along the northern shore of 'Lersøen'.

4 **Tent ring,** rectangular

Site 4: Tent ring on ridge near the steep slope between the Tasersuaq valley and the Aasivisuit Tasiat valley, looking from east towards west along the northern shore of 'Lersøen'.

5 Innusuk

Site 5: Inussuk situated on ridge near little pond below the steep slope separating the Tasersuaq valley from the Aasivisuit Tasiat valley.

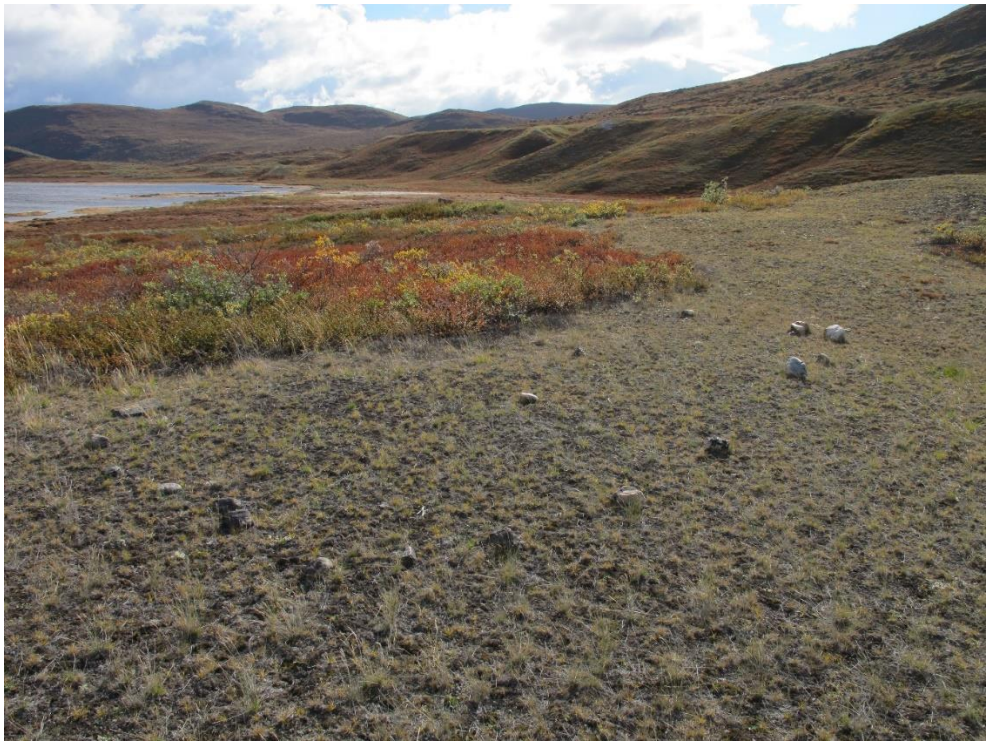
6 Tent ring on low ridge in southeastern end of lake.

Site 6: Oval tent ring seen from southeast towards northwest. The southfacin opening is 210 cm wide.

7) Tentrings and other features

Locality no 7 is a site with two tentrings beautifully situated on ridges at the western end of a large but nevertheless partially very shallow lake. One tentring is badly preserved and the other is a large rectangular feature which could be from a modern villa tent or similar structure.

Site 7a: Tentring on ridge in westernmost end of large partially shallow lake, view from southeast towards northwest.



Site 7b: 8 x 4m large rectangular tentring built of stones up to head size, no stone built periphery is present along birch shrub towards north. View along southern shore of lake from northwest towards southeast. Note esker terraces along the lake in the background.

Site 7c: Undefined boulderfeature, hearth or inussuk on ridge in westernmost end of large partially shallow lake. Viev from southwest towards northeast along the western end and northern shore of the lake. (The two marked hilltops in background are on the northern side of the lake).

Site 7d: disturbed feature near tent rings in westernmost end of large partially shallow lake, feature 7c is seen in the far left side of picture.

Site 8: Inussuk on bedrock beside winter trail between Kangerlussuaq and Sisimiut

From the southeastern corner of the lake where site no 7 is located and towards kangerlussuaq, the track follows the same general route as the current winter trach allowed for motorized transport between Kangerlussuaq and Sisimiut. Along this part of the track, there are some stone cairns presumably way finder cairns related to the winter traffic.

Registration no 8 is one such marker situated just where the winter trail enter the more open terrain around 'Hundesø', Limnaea Sø and Brayria Sø when moving in from west to east.

Summary

Surface stone features are notoriously difficult to date. However site 1 and 3 leaves an impression of being 'relatively old' in contrary to sites 4, 6 and 7, which have a more recent appearance for example by having the stones sitting on 'on top' of the ground and not sunken into it. A few remnants such as cigarette butts and a piece of aluminum foil was seen on '4' and '7', but the linking of these remnants to the use of the features is weak. Eventually the stones used for recent and

contemporary tent rings may well be taken from older stone built structures resulting in complex use histories of simple sites with just a few visible structures.

In general the valleys passed during the survey described here, has few traces of human activities, there are just a few caribou trails typically following the terraces along the larger lakes which also was followed by the author during the reconnaissance.

Caribou trails are seen on marked terraces parallel to the orientation of valleys and lakes, but we did not see any game after leaving Aasivissuit Tasiat. The valleys to the west of Aasivissuit Tasiat towards the lake of Tasersuaq are dominated by marine clays and widespread badlands, and the valleys and hills further towards southeast, along the route towards Kellyville near the harbor of Kangerlussuaq are more continuously vegetated, with ground moraine and bedrock and a single marked esker system along the southern shore of the larger lake where locality no 7 was registered.

18/9-2020

Jens Fog Jensen