

ICE-ARC project field report

R/V Porsild September 4th – 7th 2017

Naja Mikkelsen & Mikkel Myrup



GEOLOGICAL SURVEY OF DENMARK AND GREENLAND
DANISH MINISTRY OF ENERGY, UTILITIES AND CLIMATE



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*A testimony to 200 years of European and Inuit whaling activities
in the Disko Bay region. The monument is placed on Kitsissuarsuit/Hunde Ejland*

ICE-ARC project

Field report

R/V Porsild September 4th -7th 2017

1. Summary

A field program was undertaken September 4th -7th 2017 using the research vessel R/V Porsild as a platform for the 2017 ICE-ARC field campaign. The aim of the field campaign was to collect data for the EU project “ICE-ARC project - Ice, Climate and Economics in the Arctic” with special emphasis on Deliverable D.3.3 of the project.

Deliverable D3.3 of ICE-ARC Work Package 3 is phrased: *Consequences and impacts on indigenous hunting communities in NW Greenland caused by western civilizations – a case study base on European whaling and hunting activities in the Disko Bay area during the 17th to 19th Century.*

The Disko Bay region of West Greenland was selected as focal point for this deliverable, and the 2017 field campaign focused on some whaling sites which were important in the 17th-19th centuries. The aim of the field campaign was thus to locate and document known remains and sites of activity related to the European whaling period in the Disko Bay area.

The documentation included the use of two types of drones. A fixed-wing drone, which is usually used when a relatively large area is to be mapped, and a small rotor drone which is more practical for covering areas of lesser extent, *inter alia* historical and prehistorical settlements and their immediate vicinities.



2. Introduction

The EU funded *ICE-ARC project - Ice, Climate and Economics in the Arctic* was launched in January 2014 to investigate ongoing climate changes in the high Arctic and to study the impact of the changes on present day Arctic socio economy. A third dimension of the ICE-ARC project are investigations of past climate changes and their possible impact on the different cultures that have existed in the high Arctic through time – and to document the impact of western civilization on the Inuit culture in Greenland.

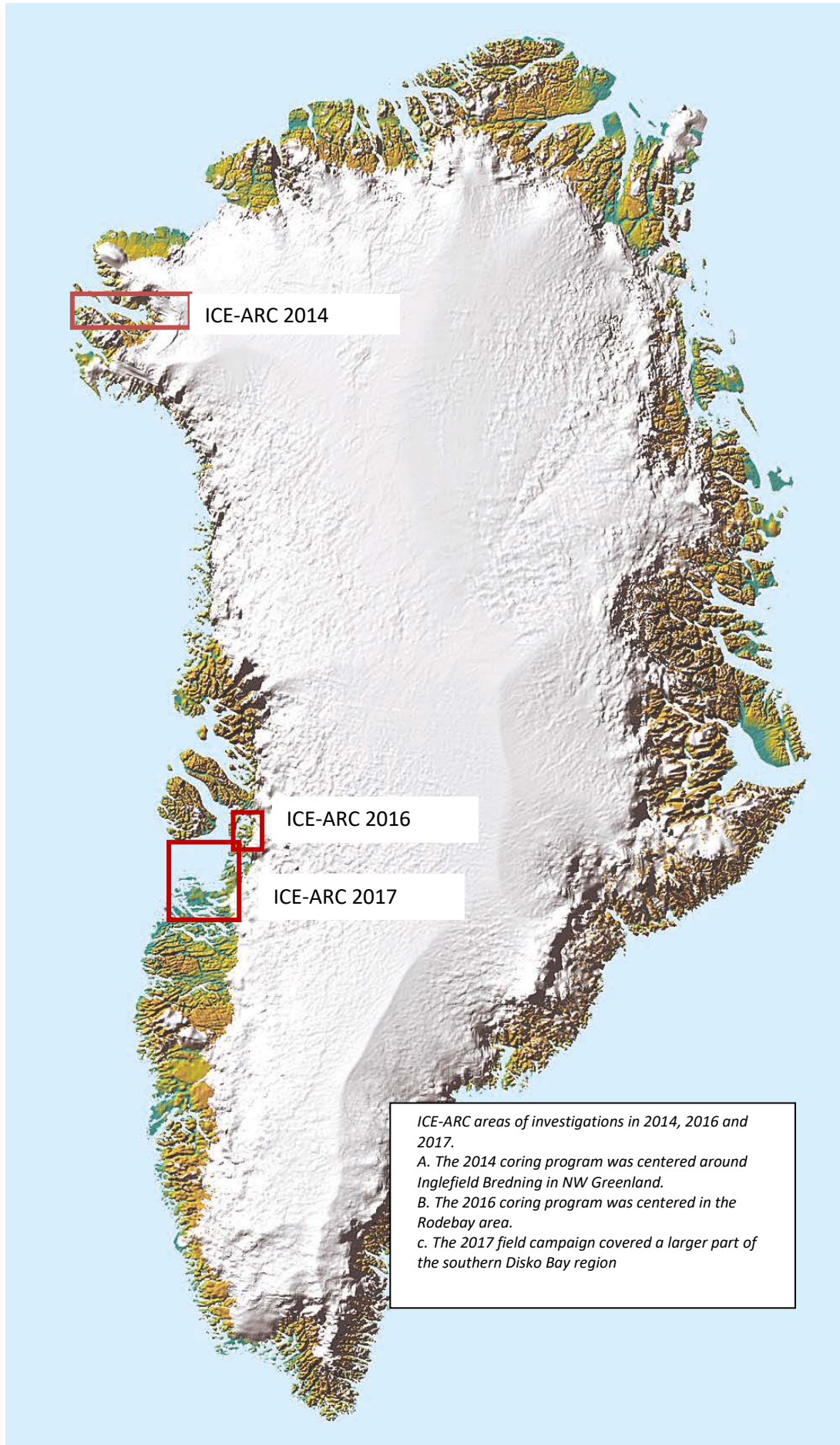
The present investigation focuses on the European whaling activity which started in the northern North Atlantic and adjacent Arctic Ocean in the early 17th century. Heavy slaughter of the whales off Spitsbergen and Jan Mayen reduced the prosperity of this industry and the whalers had to find new hunting grounds. A large part of the whaling fleet therefore moved to the Davis Strait off West Greenland where the Disko Bay region became the focal point of the whaling activities. Here Europeans Whalers initiated contact with the local Inuit population and this contact heavily impacted the culture and living conditions for the local population.

Archival data on the whaling period has been obtained from the Greenland National Museum & Archives/Nunatta Katersugaasivia Allagaateqarfialu in Nuuk, Greenland. This Archive hosts a unique collection of original documents presenting a detailed insight into the daily day life of the whaling colonies in West Greenland and the interaction between Inuit and Europeans from AD 1779 and onwards. These data are combined with results from our investigations of marine sediment cores collected during two Ice-Arc cruises in 2014 and 2016, where possible links between climatic changes and the impact of these changes on whaling activities and whale stocks along the west coast of Greenland are investigated.

The purpose of the ICE-ARC 2017 field program was to investigate and document physical remains in the landscape from the whaling period in the Disko Bay region, and the R/V Porsild was used as a platform for the field program (Fig. 1).



Fig. 1. The University of Copenhagen Research Vessel 'Porsild' was used as platform for the 2017 field campaign.



3. Cruise participants

Naja Mikkelsen,
Geological Survey of
Denmark and
Greenland,
Copenhagen,
Denmark

Mikkel Myrup,
Greenland National
Museum and
Archives, Nuuk
Greenland

Michael Rasmussen
(Only 4th September
2017)
Aasiaat Museum
Aasiaat, Greenland



4. Daily Log

September 4 2017.

- Rendezvous in Aasiaat for the cruise participants with R/V Porsild
- Investigations on Pullat Island.
- Night in Aasiaat harbour

September 5 2017

- Investigations on Kitsissuarsuit/Hunde Ejland. 3D mapping of the graveyard containing graves of European whalers.
- Investigations on Angissat/Grønne Ejland
- Brief survey of Qeqertasussuk island
- Night in Qasigianguit

September 6 2017

- Meeting with Anne Mette Olsvig, head of Qasigianguit Museum, to discuss the whaling period in the area.
- Investigation of the whaling site at Savik island
- Investigations of the remains from whaling activities in Oqaatsut/Rodebay including the Inuit winter houses used during the whaling period
- Night in Oqaatsut/Rodebay

September 7 2017

- Investigations continued in the Oqaatsut/Rodebay area.
- Departure from Oqaatsut/Rodebay @1000h, arrival in Ilulissat @1100h.
Disembarkment
- Data retrieval and report writing at hotel

September 8 2017

- Departure from Ilulissat

5. Area of investigation

A number of sites in the southern Disko Bay region were visited during the field campaign in 2017. Focus were on sites with possible remains from the whaling period in the 17th-19th centuries. Brief investigations were made at older sites like Qeqertasussuk and Angissat (Fig. 2).



Fig. 2. Areas of investigation during the 2017 field campaign

1. Pullat
2. Kitsissuarsuit/Hunde Ejland
3. Oqaatsut/Rodebay
4. Qeqertasussuk
5. Angissat/Grønne Ejland
6. Qasigiannquit and Savik island

6. Methods of investigation

The aim of the field campaign was to locate and document known remains and traces of activities related to the European whaling period.

For this purpose Mikkel Myrup from the National Museum and Archives, Nuuk, undertook a number of drone operations at three relevant areas in the southern Disko Bay region: Pullat, Kitsissuarsuit/Hunde Ejland and Oqaatsut/Rodebay. These investigations were supplemented by field investigations of a number of other sites.

The drone based mapping system basically generates maps out of jpeg-format photographs which the software will transform into a orthophotomosaic, *i.e.* the aerial photographs (up to several hundreds) are merged through pixel recognition. Spatial data attached to each individual photo (x-, y- and z-axis as well as photo angle via accelerometer) enable the software to create a so-called point cloud. This means that a geo-referenced 3D terrain model is established consisting of points. Each point has been assigned a colour extracted from the original jpeg photo, resulting in a point cloud which, in appearance, is quite close to what the mapped landscape looks like in reality.

The point cloud created via the drone photographs comprises a basic data set that can be used for several different purposes. In this context, for example, the generation of high-resolution 3D models and conventional contour line maps are in focus. The software provides the possibility of converting the basic data consisting of the point cloud into a wide variety of common GIS-formats, such as vectorised shape-files, which is the format generally used. Once the contour line map is generated and geo-referenced, additional GIS-layers may be imported, such as archaeological features that have been GPS-recorded. Another useful feature of the system is the possibility to illustrate or present an archaeological site or geological feature, by making fly-through videos of the 3D terrain model.

7. Results

Pullat

Hunting activities have taken place from Pullat through centuries. In 1823 a formal whaling station was established by Danish authorities and lasted as such only for two years – from 1823 to 1825. The new whaling station was populated with almost 100 inhabitants in 1823, including a catechist, some Danish staff and not least Inuit hunters and their families well known for their productivity and eager trading. They lived in two newly erected houses which testify to an intense effort by the *Kongelige Grønlandske Handel* (the Royal Greenland Trading Company) to boost the whaling activities from the island. Archival data in Nuuk document the will to invest in buildings, boats and whaling equipment. However, in the summer of 1825 the governor is commanded by authorities in Copenhagen to close down all whaling trade posts in the Egedesminde district due to lack of success and the high cost of maintaining them. This sealed the fate of Pullat as a place of trade and whaling and signifies that whaling was, generally, at a low point in the Disko Bay at that time. Some Inuit settlers however, remained on the island and continued their subsistence hunting.

Remains from the whaling period are abundant on Pullat (Fig. 3). Ruins of the two large houses from 1823 are still to be seen together with remains of the earlier and later Inuit winter houses (Fig. 4). Two major grave fields in the central part of the island testify to the long presence of people on the island (Fig. 5).

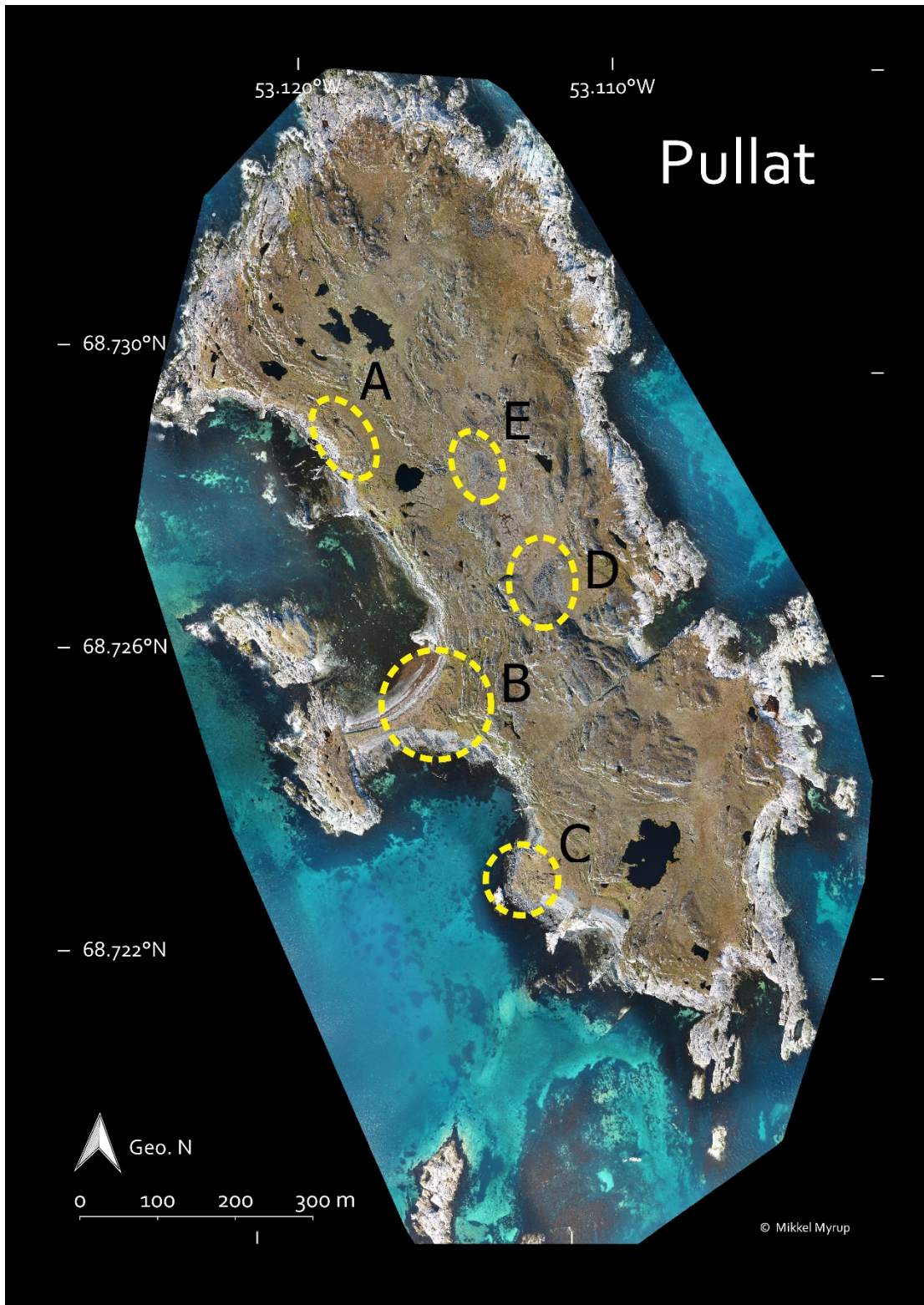


Fig. 3. Orthophotomosaic of Pullat. A) Winter house. B) The main structures from the whaling station period. C) Winter house. D) Gravefield (larger). E) Gravefield. (Orthophotomosaic: Mikkel Myrup)

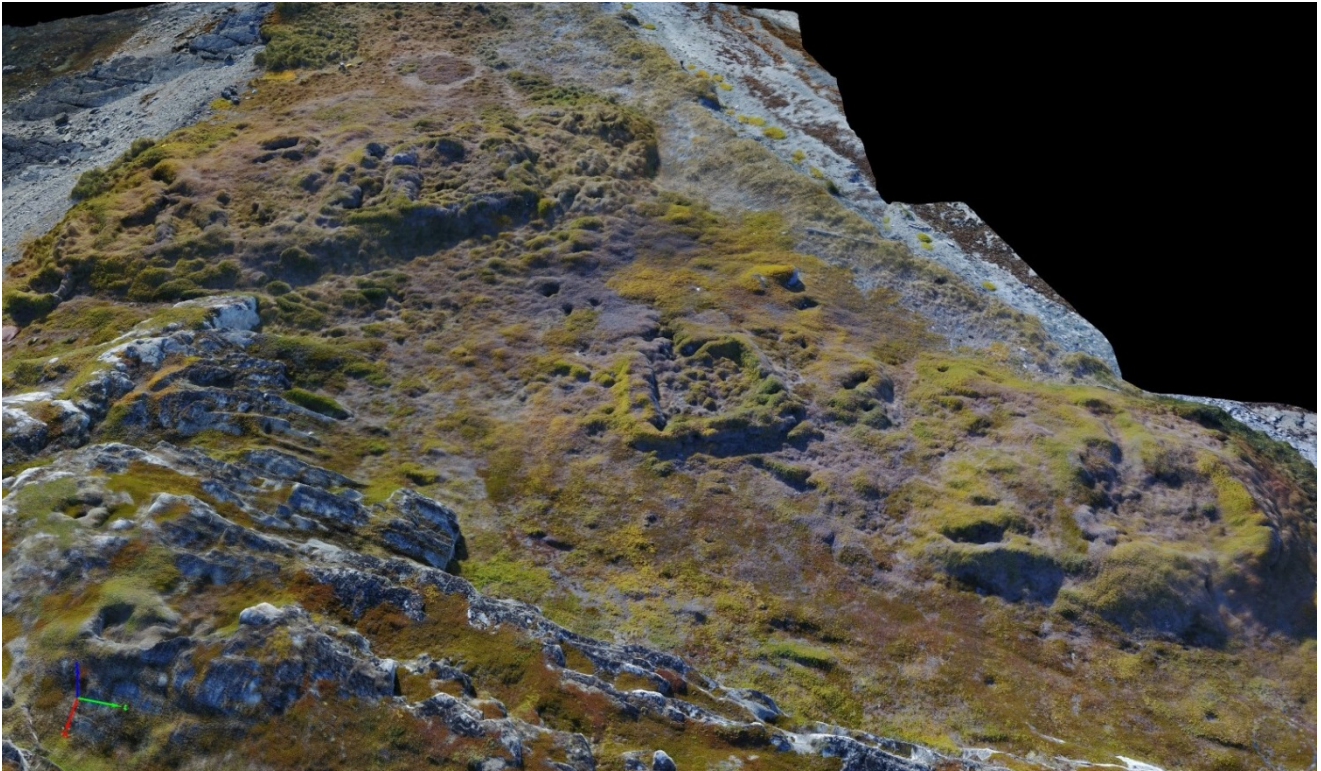


Fig. 4. Screen shot of 3D model of the whaler's housing area on Pullat (Site B). The two main buildings established by the Royal Greenland Trading Company in 1823 presumably appears to the right and in the center of the picture. A third structure in the upper left represents a conglomerate of several stages of Inuit building activities. (3D model: Mikkel Myrup)

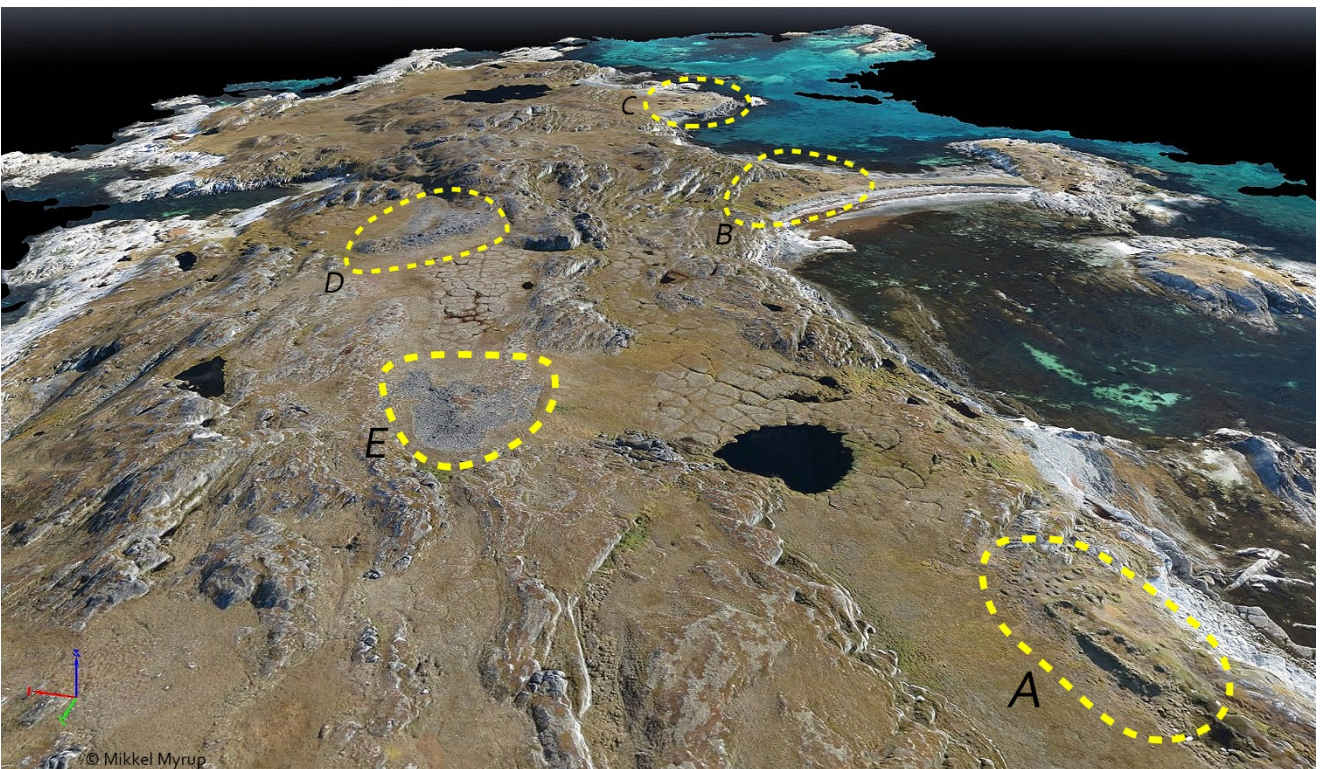


Fig. 5. North to south view screen shot of 3D model of Pullat. A) Winter house. B) Whaling station and winter houses. C) Winter house. D) Gravefield (Large). E) Gravefield. (3D model: Mikkel Myrup)

Kitsissuarsuit/Hunde Ejland

Kitsissuarsuit/Hunde Ejland hosted extended whaling activities in the 18th and 19th centuries.

The graveyard on Kitsissuarsuit/Hunde Ejland is impressive and composed by three separate ‘modern’ grave areas decorated with the traditional white painted wooden crosses (Fig. 6). The central part of the graveyard is characterized by approximately 100 graves composed by irregular and elongated stone piles without markings (Fig. 6) - except for a few and notable old markings very different from the modern wooden crosses (Fig. 7). The central grave area is apparently known as ‘the Old Whalers Graveyard’ by local people and appears to be much older than the surrounding modern graves. It is striking that two of the old grave markings have not been found elsewhere in Greenland but so far only seen on an old illustration from the graveyard ‘Liknesset’ on northwestern Svalbard, which was established by Dutch whalers in the 17th century (Fig. 7). Albrethsen (Report from the National Museum, Copenhagen 1998) therefore concludes that the old part of the Kitsissuarsuit/Hunde Ejland graveyard is likely established by the whalers who resided on Kitsissuarsuit/Hunde Ejland in the 18th and beginning of the 19th centuries and that the buried persons were of both European and Inuit origin.

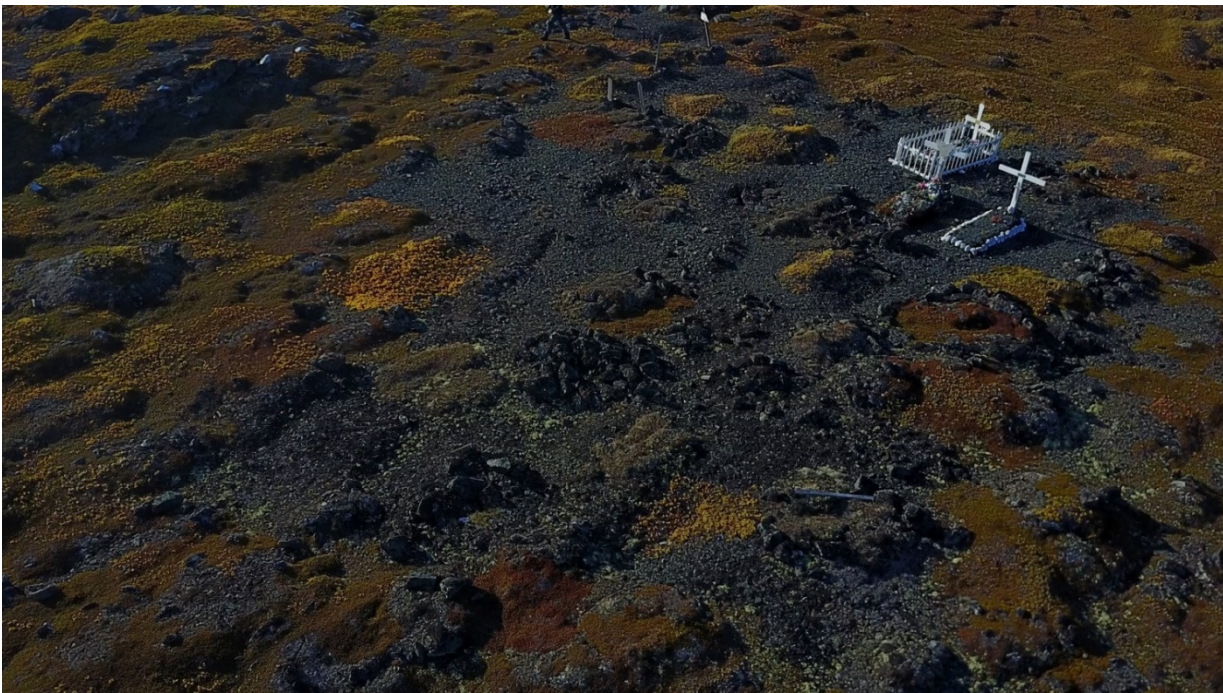


Fig. 6. Aerial photograph of the old part of the graveyard at Kitsissuarsuit/Hunde Ejland. This part is known as ‘the Old Whaler’s Graves’ by local people. The graves are irregular or elongated and consist of stones piled up in an irregular manner, and thus appear very different from the modern graves lined with white stones and marked by the characteristic white wooden crosses (Photo: Mikkel Myrup)



Fig. 7. Two grave markings called 'navnebrædt' (name plates) on 'the Old Whaler's Graves' on Kitsissuarsuit/Hunde Ejland. This type of marking has only been found in an old whaler's graveyard established in the 17th century on Svalbard. Modern graves decorated with the traditional white painted wooden crosses are seen in the back ground. (Photo: Naja Mikkelsen)

Oqaatsut/Rodebay

Rodebay or "Red Bay" is the Dutch name for the small Greenlandic settlement Oqaatsut just north of Ilulissat (Figs. 8, 9). Inuit and palaeoeskimos have lived in this area for millenia and trade and contact was established at an early stage of the Dutch and English whaling activities in the Disko Bay area Rodebay got the status as outpost in 1877. Today remains from Whaling activities are present as a modern whale butchering place with two winches (Figs. 12, 13), a Colonial period whale butchering site with one winch (Fig. 11), colonial period trade buildings (Fig. 10), Inuit Winter houses (Fig. 8) and a Cemetary.



Fig.8. Inuit has populated the Disko Bay area for 4500 years. The Thule culture came into the area around 1200 AD and hunted whales long before the European whalers appeared in region in the 17th century. Remains of Inuit winter dwellings from the whaling period are still visible in connection with whaling stations e.g. in Oqaatsut/Rodebay. (Photo: Naja Mikkelsen)



Fig. 9. Orthophotomosaic of Oqaatsut/Rodebay. A) Modern whale butchering, two whinches. B) Colonial period whale butchering, one whinch. C) Colonial period trade buildings. D) Winter houses. E) Cemetary. F) Winter houses. (Orthophotomosaic: Mikkel Myrup)



Fig. 10. The European whalers established in the 18th and 19th centuries a number of sprawling whaling communities in the Disko Bay region including Oqaatsut/Rodebay north of Ilulissat. In the 1600s Dutch whalers called this area for 'Roo Baj - the Red Bay'. The whalers pulled whales ashore on the flat rocks where blood from the butchered whales colored the small embayment red. (Photo: Naja Mikkelsen)



Fig. 11. Site B. The small embayment at Oqaatsut/Rodebay has been used by both Inuit and European whalers for centuries. Whales were winched ashore for butchering over the flat rocks using a natural depression in the bedrock. Oqaatsut/Rodebay still features two places for pulling up whales, one of which is still in use occasionally. (Photo: Naja Mikkelsen)



Fig. 12. Screen shot of 3D model of the flat rocks with two modern winches. Small iron chains and iron rings were fastened in the rocks to aid the handling of the whale carcass. All these remains are still to be seen. (3D model: Mikkel Myrup)



Fig. 13. The flat rocks at one of the newer sites for whale butchering seen from the bay where whales were hauled ashore with the two winches seen on the rocks. (Photo: Naja Mikkelsen)

Savik

Physical remains from whaling activities are still found onshore in many places in the Disko Bay region. Even though some of these remains are younger than the 16th and 17 century they still bear witness to the importance that whaling activities have had in the Disko Bay region through centuries.

On the island of Savik off Qasigianniguit two modern winches are situated on the flat rocks and used for hauling whales and larger marine mammals ashore (Fig. 14).



Fig. 14. Winches for whales and other large marine mammals on the island of Savik. R/V Porsild is seen in the background. (Photo: Naja Mikkelsen)

8. Acknowledgement

The success of the 2017 ICE-ARC field program was due to skipper Frederik Grønvold and his engaged crew on board the R/V Porsild. Support and inspiring discussions with Inge Seiding and Antoon Kuijpers is acknowledged with gratitude.

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