



# SEABIRD COLONIES IN THE MELVILLE BAY, NORTHWEST GREENLAND II

Final survey in August 2013

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Technical Report from DCE – Danish Centre for Environment and Energy

No. 32

2013



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## Data sheet

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Abstract: In August 2013 seabird breeding colonies in the northern part of Melville Bay were surveyed to complete surveys in August 2012 in the southern and central part of Melville Bay. The present report describes the results. There were very few seabird breeding colonies in the surveyed part of Melville Bay (n = 15), and only glaucous gull and black guillemots bred in these colonies in low numbers compared to other sites in West Greenland. However, there are very large colonies of little auk in the westernmost part of the bay and along the coast between Cape York and Thule Air Base. These colonies were only mapped as high or low density colonies as the bird numbers are almost impossible to count. The results will be incorporated into the Greenland Seabird Colony Register, and will be available for planning, monitoring and regulation of hydrocarbon activities.

Keywords: Colonial seabirds, seabird colonies, Melville Bay, little auk, black guillemot, glaucous gull, Greenland

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## Summary

In August 2013 seabird breeding colonies in the northern part of Melville Bay were surveyed to complete surveys in August 2012 in the southern and central part of Melville Bay. The present report describes the results. There were very few seabird breeding colonies in the surveyed part of Melville Bay (n = 15), and only glaucous gull and black guillemots bred in these colonies in low numbers compared to other sites in West Greenland. However, there are very large colonies of little auk in the westernmost part of the bay and along the coast between Cape York and Thule Air Base. These colonies were only mapped, as the bird numbers are almost impossible to count. The results will be incorporated into the Greenland Seabird Colony Register, and will be available for planning, monitoring and regulation of hydrocarbon activities.

## Sammenfatning

I august 2013 blev ynglekolonier for havfugle kortlagt og optalt i den nordlige del af Melville Bugt som supplement til de tællinger, der blev gennemført i sommeren 2012 i de sydlige og centrale dele. Det viste sig, at der var meget få ynglekolonier af havfugle i området, og disse var små og kun med arterne gråmåge og teyst. Med der er også meget store kolonier af ynglende søkonger i den aller vestligste del af Melville Bugt og langs kysten mellem Kap York og Thule Air Base. Disse kolonier blev kortlagt og fotograferet, da optællinger ikke er mulige. Resultaterne vil indgå i den grønlandske database over havfuglekolonier og vil være tilgængelige når olieeftersøgningsaktiviteter skal planlægges, overvåges og reguleres.

## Nalisagaq

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# 1 Introduction

In August 2013 seabird breeding colonies in the northern part of Melville Bay were surveyed to complete surveys in August 2012 in the southern and central part of Melville Bay (Boertmann & Huffeldt 2013). The survey was completed in connection with another DCE seabird-project in the area – the little auk studies at Pituffik Glacier. The northwestern part of Melville Bay was surveyed in the period 7-12 August and the coast between Thule Air base and Cape York on 7, 12 and 16 August.

This study is part of the Baffin Bay Environmental Study Program conducted by DCE and GINR for the Bureau of Minerals and Petroleum, Greenland Government, and financed by license holders in the area. The aim of the study programme is to collect strategic background information and baseline data for planning, monitoring and regulation of hydrocarbon activities in the Baffin Bay licensing area.

## Acknowledgements

Ministry of Domestic Affairs, Nature and Environment (NNPAN), Greenland Government gave permission to enter the Melville Bay Nature Reserve, where access normally is prohibited to the interior part of the reserve. Eric Steen Hansen identified lichens recorded at the little auk colonies near Savissivik.

## 2 Material and methods

The observation platform was a 47 foot yacht 'Vagabond' from Brest, France, owned and navigated by Eric Brossier and France Pinczon du Sel and their two kids Leonie and Aurore (Figure 1). This vessel is especially adapted for sailing under Arctic conditions.

During the survey, as many of the previously known colonies as possible were revisited, and the coastlines were searched for new colonies. Steep cliffs were searched from the boat, and a few were surveyed at distance from land. The birds in the colonies were counted as Apparently Occupied Nests (AON) if possible (gulls which build obvious nests) and as individuals present in case of black guillemots. Little auk colonies were recorded and photographed, while numbers of birds present was impossible to count due to the immense numbers. The sailing route was recorded on a GPS (GARMIN E-trex 20).

**Figure 1.** The vessel 'Vagabond' used for the survey in 2013.

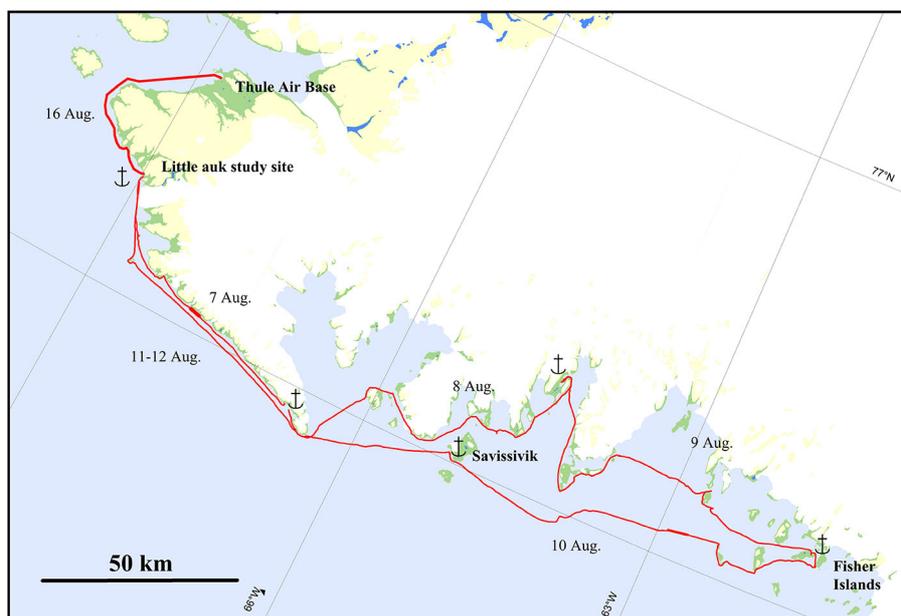


The two large thick-billed murre colonies at Parker Snow Bay and Appat Appai were not surveyed, as they were surveyed in 2006 by Greenland Institute of Natural Resources (Merkel et al. 2007).

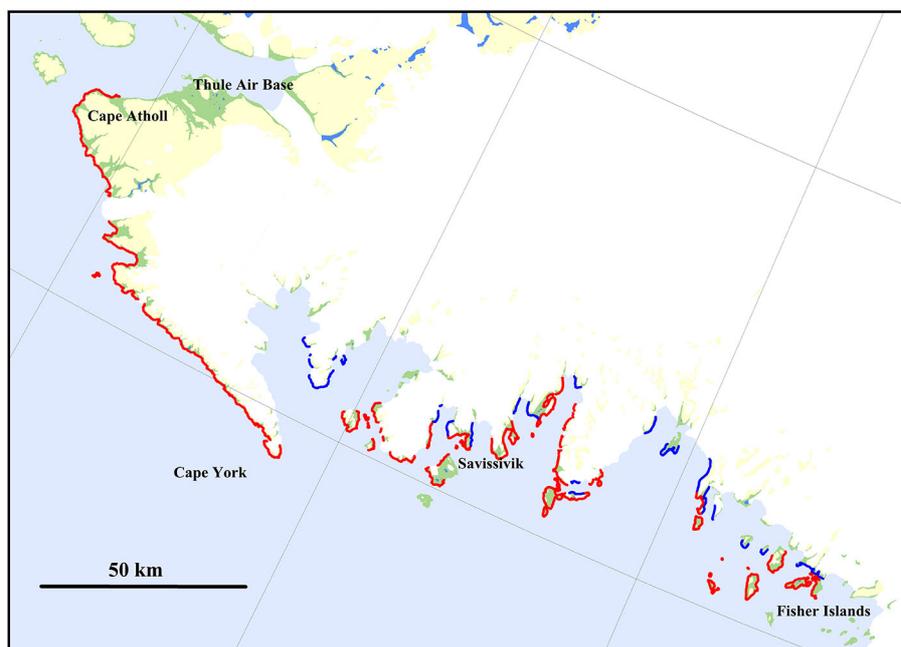
### 3 Results

The surveyed coastlines and sailed tracks are shown in Figures 2 and 3.

**Figure 2.** Route sailed during the seabird colony survey in 2013. Anchor symbols indicate where the nights were spent between the survey days.



**Figure 3.** Coasts surveyed in August 2013. The red coasts were surveyed on close hand, and colonies would have been seen if any were present. Blue coasts indicate coasts seen on distance, and only very conspicuous colony sites would have been discovered here.



#### Survey conditions – weather

With no winds and calm sea, the conditions for seabird surveys were optimal. However, fog on 11 August prevented surveying the island of Bushnan.

#### Survey conditions – ice

There was dense ice in the Meteor Bay and east of Cape Melville, but not impossible to navigate. This ice was partly some large fields of winter ice,

while the ice generally was from the many glaciers calving along the coast. Only two of the previously known colonies were inaccessible due the ice.

### **Itinerary**

7 August 2013. Survey was initiated at the little auk field camp on the north side of Pituffik Glacier at 15.00 h. The entire coast from here to the anchor site at Niaqornaarsuk surveyed (Figure 2). Anchor dropped at 23.50 h, after sailing 60 NM.

8 August 2013. Survey initiated at 9.00 at Niaqornaarsuk and coast from here to Cape York surveyed, followed by the southwest and east sides of Salve Island, Pattefjeldene, George Island and coasts until Savissivik and further on past Appalik, Saveqarfik (dense ice) and to the bay north of Eqalulik, where anchor was dropped at 23.05 h. 60 NM sailed during the day.

9 August 2013. Went ashore to the little auk colonies on west side of bay. Departed at 10.50 h and went to the opposite coast; further on south to Cape Melville, along Sorte Fjeldvæg to Appaliarsulipaluk, across the bay (much ice) to Cape Edvard Holm, Cape Murdoch and to the bay on north side of western Fisher Island (where the 2012 survey stopped). Anchor dropped at 01.10 (on 10 Aug). Distance sailed 65 NM.

10 August 2013. Went ashore until noon, and then left the harbour at 12.10 h. Sailed to Heilprin Island, Skene Islands and from here more or less straight to Savissivik (some ice fields on the way. A plankton sample was taken east of Cape Melville and anchor was dropped off Savissivik on 02.00 h (11 August). Distance sailed 64 NM.

11 August 2013. Dense fog throughout the day preventing a survey of Bushnan Island. Left Savissivik at 16.30 h, and rounded Cape York at 20.10 h. Sailed throughout the night.

12 August 2013. Surveyed the coasts of Conical Rock 02.05-02.35 and arrived at little auk field camp 04.50.

Just before this survey the coasts of Parker Snow Bay were surveyed on 6-7 August also from 'Vagabond', and in connection to a plankton sampling programme. On 16 August the coast between Thule Air Base and little auk field camp at Pituffik Glacier was surveyed 10.50-14.25 h from a Targa 31 during an equipment pick-up.

## **3.1 Species account**

### **Birds**

#### **Red-throated diver *Gavia stellata***

One heard on the western Fisher Island on 10 August and another on Skene Islands same day.

#### **Northern fulmar *Fulmarus glacialis***

Commonly observed during sailing on all days. No breeding records.

#### **Snow goose *Anser caerulescens***

Six birds (apparently three pairs) seen on long range at the lake at Eqalulik on 9 August.

**Canada goose *Branta canadensis***

A large flock (55) of non-breeding birds (some unable to fly) in fjord north of Eqalulik.

**Common eider *Somateria mollissima***

No breeding birds found. But common eiders were observed here and there in small flocks (max. 50) – perhaps non-breeders and post-breeding males.

**King eider *Somateria spectabilis***

Only at Skene Islands on 10 August was a small concentration of moulting birds found: In total 80 birds (76 males and 4 females). Small migrating flocks of mainly males (max. 16) were seen here and there.

**Peregrine falcon *Falco peregrinus***

Prey exchange between two birds seen at Eqalulik on 9 August. An adult male passed by at western Fisher Island on 10 Aug.

**Gyr falcon *Falco rusticolus***

Two recently fledged young seen on east facing cliff northeast of Eqalulik on 9 August.

**Glaucous gulls *Larus hyperboreus***

Besides the colonies (Figure 5), some single pairs seen along the coasts. First fledged young seen on 9 August.

**Black-legged kittiwake *Rissa tridactyla***

Large breeding colonies in Parker Snow Bay and at Appat Appai. But these not censused. Elsewhere seen throughout the surveyed area in small numbers.

**Ivory gull *Pagophila eburnea***

Only one observation; an adult just west of Cape York on 8 August.

**Pomarine skua *Stercorarius pomarinus***

One adult just east of Cape York on 8 August, and two adults south of Cape Atholl on 16 August.

**Long-tailed skua *Stercorarius longicaudus***

Two observations on 9 August in bay east of Cape Melville: 1 single adult and later a flock of six adults and an immature. On 10 August three adults east of Cape Melville.

**Black guillemot *Cephus grylle***

The most widespread seabird in the surveyed part of Melville Bay. Some breeding colonies recorded (Figure 5), but birds seen almost everywhere where open water was present. Little auks also bred more or less scattered in the little auk colonies, where rocks were available, and sometimes very high on cliffs with low-density little auk colonies.

**Thick-billed Murre *Uria lomvia***

Large breeding colonies in Parker Snow Bay and at Appat Appai, but these not censused.

**Atlantic puffin *Fratercula arctica***

None seen at Conical Rock, where a few birds were observed in 1998 (pers. obs.).

**Northern raven *Corvus corax***

Seen here and there especially at the seabird colonies.

**Mammals**

**Polar bear *Ursus maritimus***

Three observations: on 8 August a big individual resting on old winter ice east of Saveqarfik, on 9 August another big bear on old winter ice between Appaliarsulipaluk and Cape Murdoch and on 12 August a third bear on west side of Conical Rock.

**Ringed seal *Phoca hispida***

Very common in the areas with dense glacier and old winter ice.

**Harp Seal *Phoca groenlandica***

On 8 August two flocks (20 and 138) were resting on the old winter ice east of Saveqarfik in the same area as were a polar bear was observed (Figure 4).



**Figure 4.** Harp seals on old winter ice on 8 August.

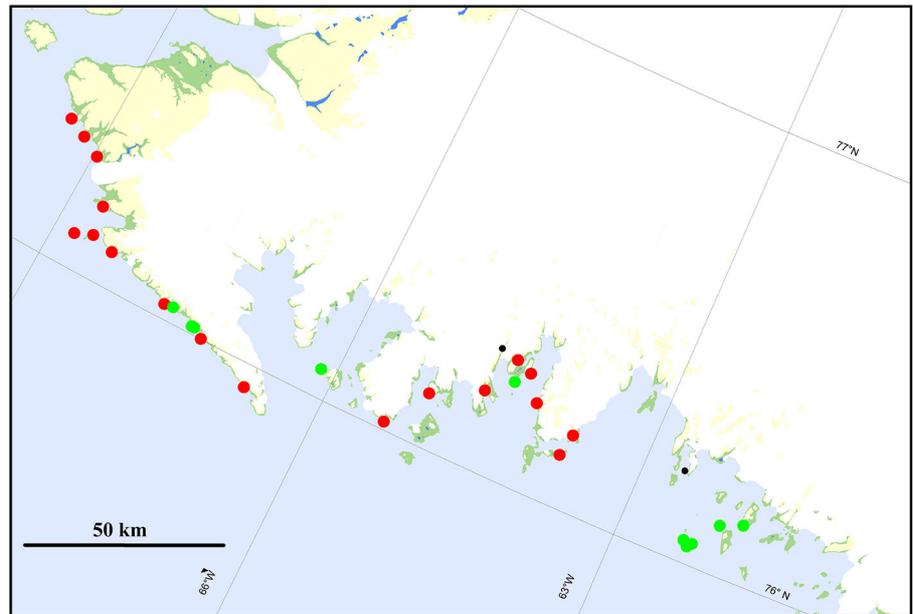
**Bearded seal *Erignathus barbatus***

Only a few seen in the areas with glacier and old winter ice.

**3.2 Seabird colonies**

Figure 5 shows the distribution of the observed colonies. Besides the little auk colonies, in total 15 occupied seabird colonies were surveyed in the Melville Bay-area, and of these 7 have not been visited before. Only glaucous gulls and black guillemots occurred in these colonies and all were very small with maximum 10-15 pairs of glaucous gulls and 300 black guillemots. In addition the colonies on the coast between Cape Atholl and Cape York were surveyed and here three new sites were found and in total 13 sites were surveyed (besides the little auk colonies) and all with glaucous gulls and black guillemots.

**Figure 5.** The seabird breeding colonies in the surveyed area – except the little auk colonies. Red dots are those known in advance and visited in 2013, green dots are those discovered during the survey in 2013 and black dots (n = 2) are known colonies not visited because they were inaccessible due to ice.



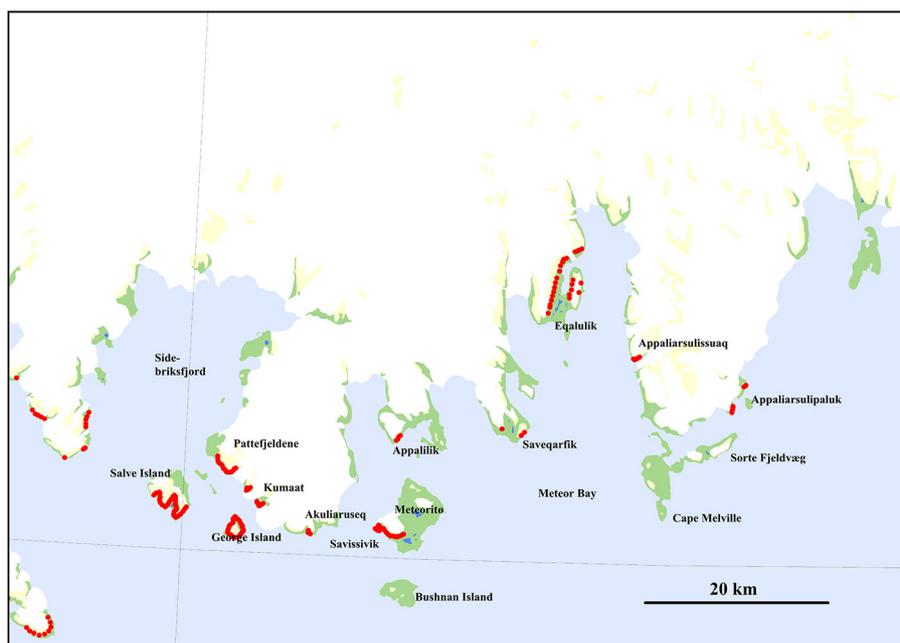
Atlantic puffins had been recorded earlier (1998) at Conical Rock, but none were observed here in 2013.

In addition, all the little auk colonies passed by were photographed and compared to the previous information available (pers. obs in 1998 from aircraft). Figure 6 and 7 shows the colonies as observed in 2013. It is surprising that some of the colonies recorded at Sorte Fjeldvæg and Qeqertaarsuussuaq in 1998 could not be confirmed (see below).

**Figure 6.** The little auk high density colonies seen and photographed during the survey in 2013 and indicated by filled red dots. Open red dots show high-density colonies previously recorded (Boertmann & Mosbech 1998), but not seen in 2013. There are many low-density colonies on the coasts, e.g. on Conical Rock.



**Figure 7.** The little auk high density colonies seen and photographed during the survey in 2013 and indicated by red dots.



Most of the little auks breed in large and very dense colonies in talus slopes (Figure 8). However, on many coasts there are breeding little auks in lower densities often on steep cliffs, such as on Conical Rock (Figure 9), and these low-density colonies can be difficult to detect. In Figures 6 and 7 only the obvious high-density colonies are shown.

### 3.3 Survey of little auk colonies

This is an account of the observed breeding colonies for little auks. Numbers in bracket indicate the reference number in the Greenland Seabird Colony Register. This account includes the high-density (HD) colonies in the talus slopes as these can be observed on long distances. Low-density (LD) colonies are often found on steep cliffs and are not as conspicuous, and they are mentioned if they covered large areas.

#### Coast from Thule Air Base to Cape Atholl

No colonies

#### Coast from Cape Atholl to Cape Atholl Loran-station (76039)

A small high-density colony on valley side just west of the former Loran-station.

#### Coast between Cape Atholl Loran-station and Illuluarsunnguit (76040)

A small HD colony on east side of Qaersorsuaq.

On wall between Iterlaq and valley at Illuluarsunnguit probably scattered breeding little auks.

A small distinctive HD colony on slope just west of Illuluarsunnguit. The coast from here and to Quaraatit Nuua without or only with very few little auks in LD colonies.

### **Coast between Illuluarsunnguit and Pituffik Glacier (76041)**

Small colonies on west facing slopes east of Illuluarsunnguit, and in mouth of Maniiserqat (Savissuaq). – Further inside Maniiserqat and far from the coast previous surveys have revealed large HD colonies (Boertmann & Mosbech 1998).

Only small and LD colonies between Illuluarsunnguit and Savissuaq.

On the wall of Ukkusissaq probably scattered breeding pairs of little auks.

Valley inside Paakitsoq, very large HD colonies (the westernmost of this size and extension – at least near the coast).

Coast between Paakitsoq and Nigaarfivik: Probably few and scattered little auks.

Coast inside Eqe: Large HD colonies along entire north side, and in mouth of the two valleys to the north of the glacier.

### **Coast between Pituffik Glacier and head of Parker Snow Bay (76042)**

Between glacier and Cape Dudley Digges only small HD colony in bay east of the cape.

Cape Dudley Digges, no little auks on west exposed side south of cape.

North coast of Parker Snow Bay, HD colonies along entire coast, but most seems not as dense as at Paakitsoq.

Also an isolated HD colony on small hill NE of the cabin at Issuvissaaq.

### **Conical Rock (76031)**

There are no talus slopes on this island, but thousands of little auks breeding in low density on all the steep cliffs on all sides of the island (Figure 8).

**Figure 8.** South side of Conical Rock, where little auks and black guillemots nest in cracks and crevices on the steep cliff faces.



### **Coast between head of Parker Snow Bay and Oollee (76043)**

Small isolated HD colony on hill SE of cabin at Issuvissaaq.

South coast of bay, has probably scattered and LD colonies all over the area, but this coast only seen in headlight and on distance.

Coast between Parker Snow Næs and Oollee is mostly steep cliffs, but with extensive orange areas and probably only with scattered and LD colonies. In a circus valley there were some talus slopes apparently with small HD colonies.

Oollee has three valleys, all with extensive talus slopes; one to the west and two with common mouth to the east. A large HD colony is located on the north side of the mouth of the eastern valleys and much smaller HD colonies are found on the opposite side. On sides of western valley there are large HD colonies too.

### **The bird cliff Appat Appai (76012)**

No little auks recorded in main colony or on the cliffs between main colony and eastern satellite.

Just east of the satellite HD colony on a talus slope almost above the murre.

### **Coast between Appat Appai and Sermipaluk (76044)**

A talus slope east of the bird cliff has small LD little auk colonies.

South coast of Nunapalussuaq has steep cliffs with orange areas and talus slopes. But no little auks seen (18:53 h) and talus looks like without colonies; but there may be LD colonies on cliffs and small HD colonies in the talus slope.

### **Coast of Ujarasussuit (76045)**

Large HD colonies on southeast facing talus slope. These are of a size and density comparable to the colonies at Paakitsoq.

### **Crimson Cliffs, coast between Sukkat and glacier west of Sisussat (76046)**

Large and extensive HD colonies on south and southeast facing cliffs – the latter often over the glaciers. No colonies seen on slopes behind the coastal mountains.

In valley with lake, the largest and most extensive colony seen during the survey is located (Figure 9).

On east side of valley with lake, only HD colony in outermost part.

Slope on east side of Nanuarsorseq has minor talus-areas with HD colonies; talus slope to the south with large HD colony.

### **Sisussat – Niaqornarsuaq (76047)**

Large HD colonies on south facing talus slopes of Sisussat.

Small HD colonies on west and south sides on hill between Sisussat and Niaqornarsuaq and a bigger one on east side.

Small HD colonies on west side of Niaqornarsuaq, large on south side and large on east side above glacier.

No colonies seen on slopes behind the coastal mountains.

#### **Saneraq (not in colony database)**

Large HD colony on talus slopes on western part, and larger colonies on eastern part both on south facing slope and east facing (above glacier). From this site and eastwards the colonies are less green than seen so far.

**Figure 9.** The largest little auk colony observed in 2013. Situated in talus slope west of the lake at Crimson Cliffs.



#### **Bewerly Fjelde – Cape York (75009)**

Coast between Puersut and Niaqornaarsuk (cabin) almost continuous HD colony on the talus slopes.

A short stretch without colony at Quussusuaq.

Niaqornaarsuk, HD colonies on slopes all way around the natural harbour and smaller HD colonies on slope east of the lake.

Large HD colony on east facing slope above glacier west of lake.

Smaller HD colonies on southwest facing slopes of Alussaq and even smaller on southfacing slope.

Further on to Sermipaluk no colonies.

No colonies from Sermipaluk and around Illernap Nuua.

Coast on SW-side of Cape York with large colonies in talus slopes especially east of the Peary Cairn and around the cape to Perlernerit above the red cabin and some ruins.

No colonies beyond the glacier northwest of Perlernerit.

**Peninsula between De Dødes Fjord and Sidebriksfjord (76032, 76048, 76049, 76050)**

Seen on long distance.

76032, two large HD colonies in talus slopes.

76050 large HD colony in talus slope.

76049 or perhaps 76048 large HD colony too far away.

**Salve Island (76051)**

Southwest side with large HD colonies. Also LD colonies on parts with steep cliff rather than talus slopes.

No colony between glacier on north side and Qaamat

Southeast side, HD colony from Qaamat to Inersussat.

**Pattefjeldene (76053)**

Large and extensive HD colonies on west, southwest and southeast (above glacier) sides.

**Kumaat, north (76054)**

On southwest side only small HD colonies, on southeast side (above glacier) much larger. Large areas of the talus slope covered by the lichen *Lecanora polytropa*.

**Kumaat, south (76055)**

Large colonies on southwest side, no colony below snow drift on southern part.

**George Island (76052)**

Only northwest side seen, and here large colonies in the talus slopes. But previous surveys revealed large HD colonies all around island (Boertmann & Mosbech 1998).

**Akuliaruseq/Qilalugaqarfik (76027)**

No colony from Sermipaluk to southwest corner. Further on, large HD colony on south facing talus slope and large HD colony on east facing slope above valley.

Only LD colony on cliff northwest of Qilalugaqarfik, and very high on the cliff.

**Meteoritø (76057)**

The talus slope just above Savissivik to the east and somewhat to the west with small areas of HD colony.

Much larger HD colony further west on mountain. On small hill just west of Savissivik also talus slopes with large HD colonies.

**Tarsanipaluk/Qeqertaarsuttalik (76056)**

No colony on south-facing slope, some small LD colonies just above Qeqertaarsuttalik. On east-facing slope/cliff only small LD colony areas.

**Appalilik (76058)**

Only HD colonies on southeast facing talus slope and these large.

**Saveqarfik (76059)**

The slope northwest of cabin without colony, perhaps small LD area in southern part.

The slope above (to the east of) lake without colony.

The slope on southeast coast with some small HD colony areas to the north-east.

**Qeqertarsuussaq (76060)**

Looks like there never have been colony here (although seen in very bad light conditions).

**Illernaarsussuaq (76034)**

On east-facing cliff only LD colony; larger HD colonies in talus on top, and in northern part.

**Eqalulik (76061)**

South to southeast facing slope on mountain (point 740) to the north of the glacier with large HD colony.

Long HD colony in talus slope from glacier to lakes at Eqalulik. North of narrow passage in fjord they are generally very high on the slope and generally covering only small parts of the talus as large areas are covered by *Lecanora polytropa*. South of narrow passage the HD colonies are more extensive, and are also here located high on the slope.

Large HD colonies high on slopes on east side of fjord all the way to below the peak.

**Innalissup Timimiutaa, Appaliarsulissuaq (76062)**

LD colony on the steep cliffs facing west, apparently no little auks in talus slope below the steep cliff.

HD colony in talus on top of cliff to the south and in talus slope above glacier.

**Sorte Fjeldvæg (76028)**

No little auk colonies found, and all coasts searched on close hands except north side seen on distance. No little auks seen on the sea near the site.

**Appaliarsulipaluk (76063)**

This is the easternmost colony in the Thule area.

South part, large talus slope facing east with large HD colony.

North part, large talus slope facing southeast, but only with two small HD colony areas; a large part of the talus is covered with the grey-green lichen *Lecanora polytropa*.

At least two colony sites for little auks recorded in 1998 could not be confirmed: Sorte Fjeldvæg (76029) and Qeqertaarsuussuaq (76060) and moreo-

ver the colonies at Saveqarfik (76059) were much lesser in extension than recorded in 1998. Whether these colonies were erroneously identified in 1998 or they have been abandoned since then are unknown.

Another interesting issue is that on some of the large talus slopes in the eastern part of the area with little auk colonies, the lichen *Lecanora polytropa* cover the boulders and stones in extensive areas around little auk colonies (Figure 10 and 11). This lichen is not nitrophilous and apparently favoured by moderate snow cover. It looks like the lichen is invading the little auk colony sites. If so, could it be a result of increased and longer snow cover in spring?

**Figure 10.** The little auk colony at Kumaat, south. The scree is facing to southwest. Large areas are covered by the grey-green lichen *Lecanora polytropa*.



**Figure 11.** The lichen *Lecanora polytropa* on close hand covering the entire surface of a large boulder.



## 4 Conclusions

The surveyed part of Melville Bay has besides the little auk colonies, only few and scattered seabird breeding colonies. The species breeding at these sites include only glaucous gulls and black guillemots and their numbers are small. There are very large little auk colonies in the westernmost part of the Melville Bay and along almost the entire coast between Cape York and Pituffik Glacier. West of Pituffik Glacier high density colonies are few, but low-density colonies are located at many sites.

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# SEABIRD COLONIES IN THE MELVILLE BAY, NORTHWEST GREENLAND II

Final survey in August 2013

In August 2013 seabird breeding colonies in the northern part of Melville Bay were surveyed to complete surveys in August 2012 in the southern and central part of Melville Bay. The present report describes the results. There were very few seabird breeding colonies in the surveyed part of Melville Bay ( $n = 15$ ), and only glaucous gull and black guillemots bred in these colonies in low numbers compared to other sites in West Greenland. However, there are very large colonies of little auk in the westernmost part of the bay and along the coast between Cape York and Thule Air Base. These colonies were only mapped as high or low density colonies as the bird numbers are almost impossible to count. The results will be incorporated into the Greenland Seabird Colony Register, and will be available for planning, monitoring and regulation of hydrocarbon activities.