Bird observations in Aqajarua-Sullorsuaq, Disko, West Greenland, 1989

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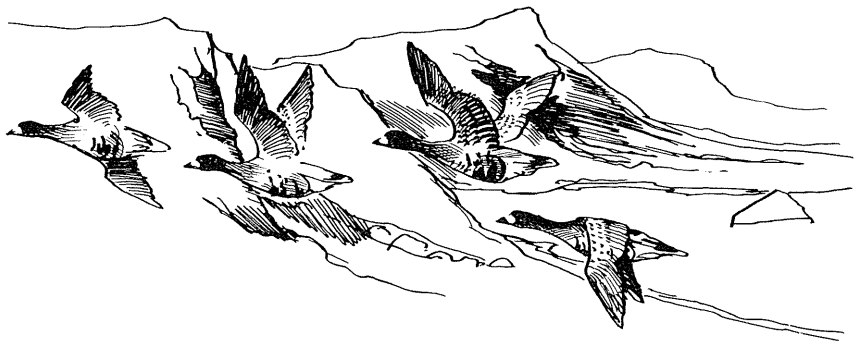

(Med et dansk resumé: Fugleobservationer i Aqajarua-Sullorsuaq, Disko, Vestgrønland, 1989)

Introduction

Aqajarua (Mudderbugten) and the adjacent valley Sullorsuaq (Kvandalen) are documented in Salomonsen (1950, 1967) as being a breeding site for Greenland White-fronted Geese *Anser albifrons flavirostris* as well as a significant moulting area for King Eiders *Somateria spectabilis*. Furthermore, scattered observations from recent years (Plantema & Groesz 1978, Boertmann 1979, Kampp & Kristensen 1979, Nordin 1985) point to the area as having a high species diversity. The area is considered as a wetland of international importance and has thus been given Ramsar status. However, no detailed studies on the bird life have been carried out.

In the summer of 1989 we conducted an avifaunal survey of the area. The main purpose was to obtain more detailed information on the occurrence of Greenland White-fronted Geese, Common Eiders *Somateria mollissima* and King Eiders.

This paper gives a species-wise account of the more important bird observations made during the field work. Additional observations are summarized at the end.

Area surveyed

The shallow marine area Aqajarua and the adjacent valley Sullorsuaq are situated at eastern Disko Island (69° 45' N, 51° 05' – 52° 40' W) (Fig. 1, 2).

From the 7 km wide delta of Sullorsuaq the river plain gradually rises to 50 m a. s. l. and narrows to about 1 km in the upper valley 22 km inland. The area below 50 m covers 68 km^2 (shaded in Fig. 1).

The outermost delta consists of silt-covered flats with extensive areas of salt marshes with *Puccinellia phryganodes* and *Carex* sp., partly intersected by vegetation-poor sandy ridges. On both sides of the delta the terrain is gently sloping heath on sandy soil. The vegetation is dominated by *Cassiope tetragona*, *Empetrum hermaphroditum*, *Vaccinium uliginosum*, *Betula nana*, *Salix glauca*, *Pedicularis lanata* and lichens. In moist parts *Salix herbacea*, *Ledum palustre* and rush are also very common.

The river plain receives glacial meltwater from a major river and numerous tributaries. Large areas of freshwater marsh, mainly covered by *Eriophorum scheuchzeri*, *Equisetum* spp., *Salix*

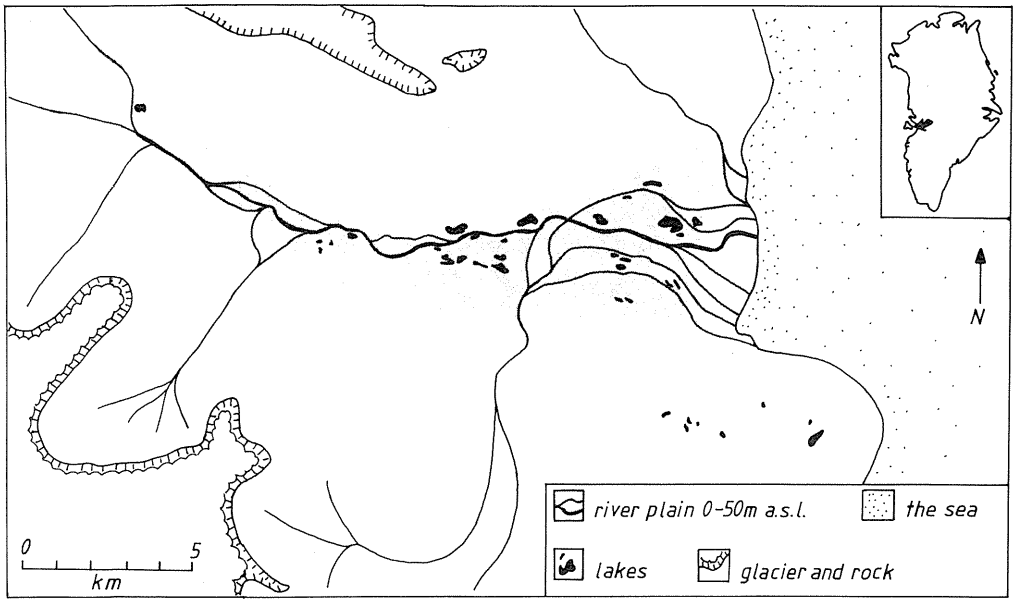

Fig. 1. The study area. Observations took place on the north side of the main river (see text).
Undersøgelsesområdet. Det grå område dækker flodlejet til 50 m o. h. Prikker angiver havet. Observationerne blev foretaget i området nord for hovedelven (se teksten).

arctophila, *Salix glauca*, rush and grasses, and several shallow lakes and ponds occur along the river, particularly in lower Sullorsuaq. Parts of the river plain have raised flats of heath and dwarf shrub, and about 8 km inland is an extensive sandy ridge. Here, just north of the river, is a lake with freshwater snails *Lymnaea*. These snails were also found in a lake in the central delta.

On both sides of the river the inland terrain is characterized by gently rising slopes of more luxuriant dwarf-shrub heath and foothills with scattered ridges. In moist areas and along streams shrub of *Salix glauca* is standing 1.0-1.5 m high.

Above 200 m a. s. l., towards the vertical rocks at about 600 m, the slopes become steeper and the vegetation more hardy, although with some herb-vegetation along smaller streams.

On both sides of the valley the terrain rises to 1000-1300 m high mountains, on the south-side covered by a large icecap.

The climate is low-arctic, and most of the area at low altitude was free of snow when we arrived in late June.

Methods

The field work was carried out between 28 June and 13 July 1989.

In the periods 28 June-2 July and 9-13 July most days were spent on foot 0-5 km from the coast in the delta north of the main river, while the days 3-8 July were spent in the valley 5-22 km from the coast, searching the river plain and the adjacent mountain slopes north of the river. An attempt to reach the south-side was unsuccessful. However, most of Sullorsuaq could be overviewed from ridges, using binoculars and a telescope (25×). Hence, due to their size and behaviour, geese could be observed in the entire river plain area (the shaded area in Fig. 1), while observations on other (i. e. smaller) birds were restricted to the area north of the main river.

A total of 18 hours were spent seawatching from the coast about 2 km north of the delta, overlooking Aqajarua.

In the following, the term "non-breeders" includes non-breeding birds as well as failed breeders. Age is given in terms of calendar-years.

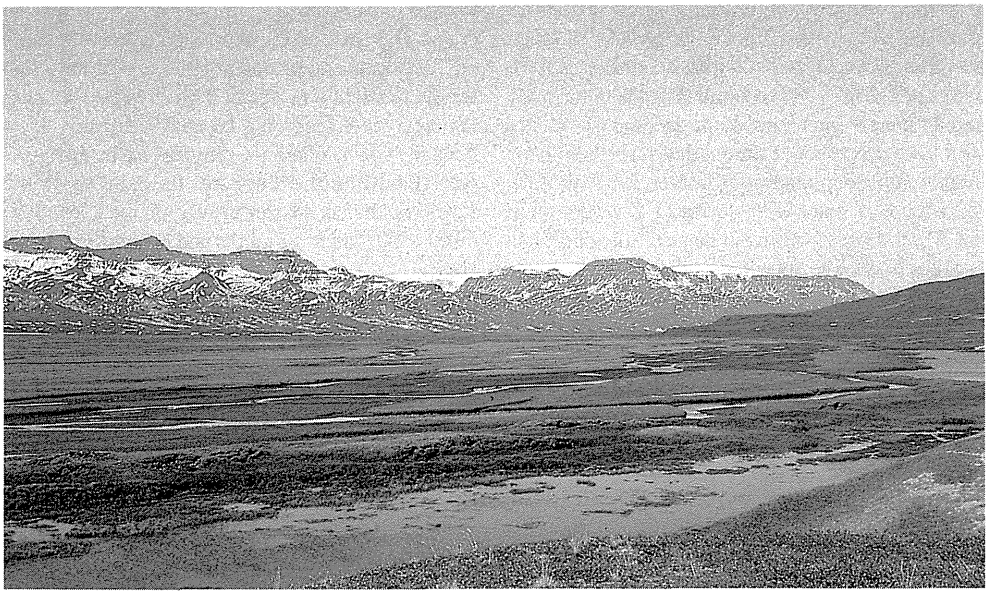

Fig. 2. The northern part of the delta, seen from the east. Photo: O. F.
Deltaets nordlige del set fra øst.

Species accounts

Red-throated Diver *Gavia stellata*

Four nesting pairs were recorded and 9-11 additional individuals were seen, mainly on the lakes in the delta or feeding just off the coast.

All nests were found within an area of less than 1 km^2 in the delta, on the muddy waterside of a larger lake. This is an unusually high density in Greenland according to Salomonsen (1950). High breeding density has also been recorded in Kuussuaq (Stordal), Disko, where 5 pairs bred within a distance of 500 m (Kampp & Kristensen 1979).

Greenland White-fronted Goose *Anser albifrons flavirostris*

Moulting flocks of non-breeding Whitefronts were found at most lakes throughout the area (Tab. 1). The flocks were unwilling to fly when alarmed, but swam to the lake banks and walked or ran off.

The non-breeding flocks were counted on 4-10 July. Flock-sizes ranged from 5 to 65 birds (mean 25, n = 10). A flock of 40 geese of which 13 birds flew off was regarded as two flocks.

The first Whitefronts with goslings were recorded on 7 July when a family of two adults with four goslings, about 1 week old, were sighted at the bank of the main river 8 km from the coast. On 10 July, two pairs and 9 goslings (broods could not be separated) were recorded on a lake in the delta. On 13 July, five pairs with 2+3+3+4+5 (mean 3.4) goslings were present at the same lake. These goslings were estimated to be 1-2 weeks old. It is not known whether the families recorded on 7 and 10 July were among these five families.

Tab. 1. Observations of non-breeding White-fronted Geese, 4-10 July 1989.
Antal observerede ikke-ynglende Grønlandske Blisgæs, 4.-10. juli 1989.

Date (July) *Dato (juli)*	Distance from coast (km) *Afstand fra kysten (km)*	Number *antal*
4	20	17
6	12	45
7	7-8	116
10	2-5	76
Total *ialt*		254

A total of 254 non-breeders (Tab. 1) and 5 breeding pairs with 17 goslings gives a summer occurrence of 281 birds, which according to Fox & Stroud (1988, 1989) is more than 1% of the total population of Greenland White-fronted Geese. As sites were visited on different dates, the total may involve some duplication. However, due to the late recordings of pairs with young (1-2 weeks after hatch and shortly before our departure), additional families may have appeared in the area.

The birds were counted within the 68 km^2 of river plain area, giving an overall density of about 4 geese per km^2 which is among the highest records from Greenland (see Fox & Stroud 1988).

No nests were found, suggesting that most of the geese bred south of the main river.

In 1987 Tony Martin flew over the area and counted about 200 geese in the lower part of the valley, with small groups elsewhere in the area (A. D. Fox, pers. comm.), in agreement with the present account.

Canada Goose *Branta canadensis*

A flock of 13 non-breeding Canada Geese were sighted on a lake in the upper delta on 1 July. One pair, apparently belonging to the subspecies *interior* (but this could not be confirmed with certainty), nested on an islet in the same lake (Fig. 3). The nest contained four eggs, and one broken egg was found 1 m from the nest. The eggs hatched during 1-10 July.

On 3 July, two pairs of Canadas were sighted on another lake in Sullorsuaq 8 km from the coast. One of the birds rested on an islet in the lake while another stayed close by on the water. The other two birds took off towards the delta. On 8 July we checked the area but found no signs of a nest.

In recent years, Canada Geese have occurred in increasing numbers in the Disko Bay area and elsewhere in Greenland (Salomonsen 1981). In 1979 a breeding pair of subspecies *parvipes* was found in Kuussuaq, western Disko (Pedersen 1984), and in 1989 several Canada Geese (apparently belonging to ssp. *hutchinsii*) were recorded by Bennike (1990) in various parts of central West Greenland, including Disko Island.

Mallard *Anas platyrhynchos conboschas*

Twenty birds were recorded on lakes throughout the area (counts between 29 June and 4 July), including 2 pairs and two flocks of 5 and 10 birds. One presumably breeding female was found at a pond 20 km from the coast.

Pintail *Anas acuta*

A pair was seen on the shore of a lake in the delta on 2 July but disappeared into the vegetation when we approached. On 3 July 8 birds (5 males and 3 females) were seen on a lake in Sullorsuaq 8 km from the coast. When we returned to the lake on 7 July 10 birds took off towards the delta while one stayed on the lake. Later in July, on the 23rd, Bennike (1990) found 12 adults and 8 ducklings in the area.

According to Salomonsen (1967) the species is an occasional visitor to West Greenland. It is known to have bred in the Disko Bay area in the period 1947-52 (e.g. at Aqajarua) but was assumed to have disappeared thereafter. In 1979 2-3 adult males were recorded in Sullorsuaq by Kampp & Kristensen (1979) and in 1983 a female was seen in Aqajarua (Nordin 1985).

Common Eider *Somateria mollissima*

No breeding birds were recorded, but the species was common off the coast, often in mixed flocks with King Eiders.

During seawatches mixed flocks, ranging from 4 to about 700 birds, were observed, making up at total of about 2000 recorded birds. The largest mixed flock, observed on 29 June, consisted mainly of Common Eiders. In addition to the mixed flocks, 231 Common Eiders were recorded in flocks of up to 100 birds.

A sample of flocks selected at random, of which some were photographed, contained 45-50% adult males (3rd year or older), about 50% immature males and 1% females (including adults and immatures). Some of the adult males may have bred locally. The low proportion of females may be due to a difference in distribution patterns between males and females, as it is known from Danish waters (Joensen 1973).

Until the mid 19th century the Common Eider occurred in extremely high numbers and bred in dense colonies along most of West Greenland, but the population has since gradually declined, probably owing to overexploitation by man (see Salomonsen 1967, Vibe 1967, Joensen & Preuss 1972). In mid July 1898 Porsild (1902) observed "thousands of birds" in Aqajarua. According to Kampp & Kristensen (1979) the species is numerous around Disko (e.g. in Aqajarua) in the ice-free period, but it is not known to breed in large numbers anywhere on the island.

In June 1979, Kampp & Kristensen (1979) observed 20-30 Common Eiders in upper Sullorsuaq, 10 km from the coast.

King Eider *Somateria spectabilis*
The species was common off the coast, often in mixed flocks with Common Eiders. In addition to the mixed flocks described under Common Eider (see above), 475 King Eiders were recorded in flocks of up to about 100 birds.

Based on a sample of 504 birds, adult males (3rd year or older) made up 25-30%, immature males about 30% and females about 40% (almost exclusively 2nd-year birds). Both immatures and adult non-breeding birds are known to occur in fairly large numbers around Disko during the summer period (Kampp & Kristensen 1979) where later in the season they are accompanied by post-breeding males (Salomonsen 1967).

Aqajarua may be one of the most important moulting areas for King Eiders in the western Arctic. In August up to about 30000 King Eiders have been counted in one day (Salomonsen 1967). The birds mainly come from breeding grounds in Arctic Canada, but some probably come from northern Greenland (Salomonsen 1967).

Long-tailed Duck *Clangula hyemalis*
About 30 birds were observed on lakes or resting on lake-shores throughout the area, including 4 pairs and several flocks of 2-7 birds. Territorial fights between pairs were observed on several occasions.

In addition, 57 specimens were seen along the coast during seawatches, in flocks of up to 10 birds.

Gyrfalcon *Falco rusticolus*
A white bird was seen on 4 July and again on 5 July in upper Sullorsuaq at the foot-hills of the northern mountain chain. On 6 July a white Gyrfalcon was seen over the delta area. On 8 July a grey Gyrfalcon was seen sitting on a ridge north of the river with a medium sized bird in its talons while an Arctic Skua mobbed it repeatedly.

Several plucks were found, inland mostly containing remnants of Ptarmigans and, at the coast, of Kittiwakes.

Ringed Plover *Charadrius hiaticula*
At least 11 individuals were recorded. Two birds were observed on 2 July; one about 1 km from the coast on a sandy ridge at the edge of the delta, and one at the coast 2 km north of the delta. On 3 July a pair showing distraction behaviour was seen 4 km from the coast on a sandy ridge. This pair was still present on 8 July. Five adults were seen on 3 July on a sandy ridge adjacent to a lake in Sul-

Fig. 3. Nesting Canada Goose, presumably of subspecies *interior*. Photo: O.F.
Canadagås på rede, sandsynligvis af racen interior.

lorsuaq, 8 km from the coast, and on 7 July a pair with 2 pulli was seen on the shore of the same lake.

The Ringed Plover is known to breed in low numbers in the Disko Bay area (Salomonsen 1981).

American Golden Plover *Pluvialis dominica*
One male in breeding plumage was seen twice on 1 July on the heath about 1 km north of the delta. The species is a frequent visitor to West Greenland (Salomonsen 1981).

Grey Plover *Pluvialis squatarola*
One pair in breeding plumage was found on 29 June on a wide sandy ridge in the delta. During the study period the pair showed distraction behaviour on several occasions and the male was seen aggressively chasing Arctic Skuas, suggesting that the pair was breeding.

Although breeding-plumage birds have often been observed in the Disko Bay area during May-July (Salomonsen 1981), the present observation, to our knowledge, represents the first indication that Grey Plovers may breed in Greenland.

Knot *Calidris canutus*
Two Knots in breeding plumage was seen on 9 July, feeding on the stony beach 2 km north of the delta together with 8 Ruddy Turnstones and two Purple Sandpipers.

The Knot is a high-arctic bird and a regular summer visitor in low-arctic Greenland (Salomonsen 1981).

Whimbrel *Numenius phaeopus*
One bird of the European subspecies *phaeopus* was recorded in a marsh in the delta on 29 June.

Ruddy Turnstone *Arenaria interpres*
A flock of 8 birds in breeding plumage (of both sexes) was seen on 9 July, feeding on the stony beach 2 km north of the delta together with two Knots and two Purple Sandpipers. The birds were with some hesitation referred to the subspecies *morinella* due to their chestnut red wing-coverts and scapulars.

In Greenland the Ruddy Turnstone is a high-arctic bird, but breeding was recorded at Qaamassoq (Flakkerhuk) immediately south of the delta in 1960 (at least 6 pairs) and 1963 (Salomonsen 1967), and observed on several occasions in 1983 (Nordin 1985), suggesting that it may breed regularly at Qaamassoq.

Red-necked Phalarope *Phalaropus lobatus*
Extremely abundant, found in most lakes and ponds throughout the area in groups of 4-11 birds (mainly females). As many as 39 birds were counted from a ridge on 7 July. A nest containing 4 eggs was found on 2 July.

Arctic Skua *Stercorarius parasiticus*
In all, 8 pairs showing distraction behaviour were recorded: two pairs in Sullorsuaq (8 and 18 km from the coast), 5 pairs regularly distributed in the delta north of the main river (mean distance to nearest neighbour 1.8 km), and 1 pair 2 km north of the delta. In addition, a number of apparently non-territorial birds occurred in the area. All birds except one or two belonged to the pale morph, confirming the ratio between morphs reported by Salomonsen (1967) and Kampp & Kristensen (1979).

Thirtythree birds were seen during seawatches, often chasing Kittiwakes and Arctic Terns.

Kittiwake *Rissa tridactyla*
Up to about 1000 birds were seen daily feeding just off the coast and resting on icebergs. At "night" several hundreds were usually resting on the water and on mud-flats at the mouth of the delta.

Other species
A pair of Red-breasted Merganser *Mergus serrator* was seen 29 June flying up the delta, and on 2 July a pair was seen along the coast 2 km north of the delta.

Rock Ptarmigans *Lagopus mutus* were abundant throughout, but especially numerous in willow shrub in Sullorsuaq. A nest containing 6 eggs was found on 4 July in this habitat. On 13 July a female with at least two chicks was recorded on the heath immediately north of the delta.

Purple Sandpipers *Calidris maritima* were commonly seen in pairs or flocks throughout the coastal area and in the delta. During seawatches 19 birds were recorded; the largest flock contained 7 birds. A pair with 2 pulli was recorded on 10 July at the shore of a lake in the delta. The species may have been overlooked in the inland area.

During seawatches, 14 Great Black-backed Gulls *Larus marinus* (12 immatures and 2 adults) were recorded along the coast, singly or in flocks of 2-4 birds. In addition one adult was seen flying over the delta.

Iceland Gulls *Larus glaucoides* and Glaucous Gulls *Larus hyperboreus* were common along the

coast, alone or in small (often mixed) flocks of 2-7 birds. During 4 hours of seawatches, 38 Iceland Gulls and 17 Glaucous Gulls were seen, in addition to 38 birds belonging to either of the two species. Both species were often seen searching for food on the beach at low tide. The Glaucous Gull has been recorded in upper Sullorsuaq more than 20 km from the coast by Kampp & Kristensen (1979).

Twentysix Arctic Terns *Sterna paradisaea* were seen near the coast during seawatches, in flocks of 2-13 individuals. The species breeds in low numbers along the south shore of Aqajarua.

During seawatches, 55 Brünnich's Guillemots *Uria lomvia* were seen in small flocks on the water some distance off the coast. The species has never been recorded breeding on Disko Island, but a colony of about 4500 pairs exists in northeastern Disko Bay (Grimmett & Jones 1989).

Six Black Guillemots *Cepphus grylle* were recorded on the water some distance off the coast during seawatches. The species breeds along most of the coast of Disko where suitable nesting habitat occurs (Kampp & Kristensen 1979).

At least 4 Ravens *Corvus corax* were seen, singly or in pairs, at the steep slopes of the coastal mountains and in the delta area. Occasionally they fed on the beach. The species is presumably a common but scattered breeder on Disko (Kampp & Kristensen 1979).

The Wheatear *Oenanthe oenanthe* breeds in the rocky and stony areas of Sullorsuaq, where 4-5 pairs were recorded. Only one bird was seen in the coastal area (29 June).

Greenland Redpolls *Carduelis flammea rostrata* were scattered in the delta area and common in willow shrub in Sullorsuaq, where several fledglings were recorded.

The Lapland Bunting *Calcarius lapponicus* was extremely abundant throughout the area and the dominating bird on flat heath plains. Several were recorded breeding (fledglings seen from 2 July).

The Snow Bunting *Plectrophenax nivalis* was a common bird in rocky and stony areas of Sullorsuaq. No nests were found.

Concluding remarks

Sullorsuaq is an outstanding water-bird locality in West Greenland. The extensive areas of meadows and several shallow lakes and ponds, adjacent to gently sloping dwarf-shrub heath, is a suitable breeding and/or feeding habitat of geese, ducks and wading birds. Most breeding species were found in the river plain, especially at lakes in the delta area. Particularly noteworthy is the occurrence of breeding and moulting Greenland White-fronted Geese (>1% of the total population). The geese feed in the extensive areas of salt marsh at the mouth of the delta in spring (confirmed by the presence of numerous goose droppings) and later in the season in the fresh-water marshes inland. An unusually high density of Red-throated Divers breed at the outermost lakes in the delta. Red-throated Divers and Long-tailed Ducks were constantly seen flying to and from lakes in Sullorsuaq and the adjacent shallow sea where they dive for food. Several species of gulls and diving birds were feeding in Aqajarua, with Kittiwakes, King Eiders and Common Eiders as the most numerous. Up to about 1000 Kittiwakes were seen daily in the area, where they became the victims of the local Arctic Skuas.

Aqajarua is known to be one of the most important moulting areas for King Eiders in the western Arctic.

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Resumé

Fugleobservationer i Aqajarua-Sullorsuaq, Disko, Vestgrønland, 1989

Ramsar-området Aqajarua (Mudderbugten)-Sullorsuaq (Kvandalen) (Fig. 1, 2) har længe været kendt som et yngleområde for Grønlandske Blisgæs og en vigtig fældningsplads for Kongeederfugle. Desuden har spredte ornitologiske iagttagelser fra de senere år vist, at området generelt har et rigt fugleliv.

I perioden 28. juni-13. juli 1989 besøgte vi stedet, specielt med henblik på at registrere forekomsten af Grønlandske Blisgæs, Ederfugle og Kongeederfugle. Alle fuglearter vi stødte på gennem feltarbejdet blev noteret.

Observationer foregik til fods nord for hovedelven, fra og med deltaområdet og indtil 22 km inde i Kvandalen. Gæs kunne, takket være deres størrelse og adfærd, observeres i hele elvlejet (det grå område på Fig. 1, 68 km^2), medens observationer af andre (mindre) arter kun foregik nord for hovedelven.

Vi tilbragte 18 timer med hav-observationer over Mudderbugten fra et punkt 2 km nord for deltaet.

Ialt registreredes 32 arter, hvoraf følgende blev konstateret ynglende: Rødstrubet Lom *Gavia stellata*, Grønlandsk Blisgås *Anser albifrons flavirostris*, Canadagås *Branta canadensis*, Fjeldrype *Lagopus mutus*, Stor Præstekrave *Charadrius hiaticula*, Sortgrå Ryle *Calidris maritima*, Odinshane *Phalaropus lobatus*, Stenpikker *Oenanthe oenanthe*, Grønlandsk Gråsisken *Carduelis flammea rostrata* og Laplandsværling *Calcarius lapponicus*. Følgende arter ynglede sandsynligvis i det undersøgte område: Gråand *Anas platyrhynchos*, Spidsand *Anas acuta*, Havlit *Clangula hyemalis*, Strandhjejle *Pluvialis squatarola*, Almindelig Kjove *Stercorarius parasiticus* og Snespurv *Plectrophenax nivalis*.

Forekomsten af Grønlandske Blisgæs blev opgjort til 254 ikke-ynglende fugle (Tab. 1) og mindst 5 ynglepar med gennemsnitligt 3,4 gæslinger pr par. Ialt udnyttede altså 281 gæs området dette år, svarende til ca 4 gæs pr km^2, hvilket er en af de tætteste forekomster i Grønland.

Et par ynglende Canadagæs, sandsynligvis af racen *interior* (Fig. 3), blev fundet sammen med 13-17 ikke-ynglende fugle.

Ederfugl blev ikke konstateret ynglende i området, men optrådte i flokke langs kysten og ud for elvmundingen, ofte sammen med Kongeederfugl. Aldersbestemmelser på Ederfugle i tilfældigt udvalgte flokke tydede på, at langt hovedparten var hanner, med 45-50% adulte (3. kalenderår eller ældre).

Mere end 70% af Kongeederfuglene var ikke-ynglende hunner og ungfugle, medens knap 30% var adulte hanner (3. kalenderår eller ældre).

Af andre arter kan specielt nævnes gode bestande af Rødstrubet Lom (4 ynglepar og 9-11 ikke ynglende) og Almindelig Kjove (8 territoriale par). Et par sandsynligvis ynglende Strandhjejle blev observeret i deltaet, hvilket er første gang arten har vist tegn på at yngle i Grønland.

Kvandalen, med utallige søer og damme, er en enestående vandfugle-lokalitet i Vestgrønland. De vidtstrakte områder med marsk og kær udgør en vigtig fødekilde for gæs og andefugle. Den tilstødende lavvandede bugt Mudderbugten udnyttes som fødehabitat af måger og dykkende fugle, hvoraf Rider, Ederfugle og Kongeederfugle var langt de talrigeste.

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