

THE ROYAL AIR FORCE
ORNITHOLOGICAL SOCIETY



JOURNAL

Number 27
June 1998

Edited by
Martin Godfrey

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EDITORIAL

In my last editorial I wrote that I thought that there was a great deal of work being done by Society members and issued a challenge to make our Journal wide ranging and truly scientific. You have responded so well that I have not only filled the Journal but have taken the unprecedented step of issuing a supplement to this edition to cover your contributions for Cyprus.

The papers submitted this time have been both impressive and thought provoking and what I have found interesting is that we are following up leads from our own expeditions to do future work. These range from small studies, like mine on gull nesting, via expeditions in their own right, like Bob Frost's trip to Varangerfjord, to major analysis of data, like Bob's paper on Passerine migration from a previous Akamas trip. There are plenty of leads for future work in our current crop of expedition reports too. Bob Frost's trip notwithstanding there is plenty more which could be done on Varangerfjord, perhaps at different seasons and Cyprus always has something, whilst Orford Ness is easy to get to and has plenty of possibilities for both gull fanciers and migrant watchers. I would particularly flag up the work on Sardinian and Cyprus warblers in the Supplement; that suggests to me the need for a more wide ranging and, possibly, a long term project. The message is, don't just wait for an expedition - go out and enjoy the fun of really finding out about birds.

Keep up the good work, I look forward to your contributions for the next Journal.

Martin Godfrey

OBSERVATIONS OF SIBERIAN ACCENTORS IN THE BRITISH COLUMBIA INTERIOR, CANADA

by Doris Kime and Frank Kime

SUMMARY

We describe in detail two Siberian Accentors that spent part of late winter/early Spring 1994 in our garden, including notes on changes in plumage between early March and early April. We also note behaviour of the birds, including interaction with other species. This record is the first confirmed observation, with photographs, in Canada.

OBSERVATIONS AND DISCUSSION

We observed two Siberian Accentors, *Prunella montanella*, between 5 March and 10 April 1994 in the outer scrub of our front garden at Tappen in the Shuswap Lake area of the southern interior of British Columbia. After first being seen on 5 and 6 March, the accentors disappeared, but one or both were seen again daily from 29 March to 10 April (Kime 1994). Plumage differences, outlined in Table 1, suggested that there were two different birds. The breast band of the darker bird broadened and became more defined between early March and early April. Over this period, the flank markings of the lighter bird changed from grey to buffier and signs of faint buffy smudging began to appear across its initially clear breast.

The features that we observed are consistent with descriptions of Siberian Accentors summarised in Cramp (1988). We believe that the darker bird was a male, the lighter a female.

Accentors are a Palearctic (Eurasian) family of unobtrusive, rather solitary, birds of dense undergrowth (Cramp 1988). No accentor species occurs regularly in the Americas, and those that winter in eastern Asia migrate northwest, making their landfalls here unlikely. Siberian Accentors breed in Siberia and winter in Korea and eastern China (Cramp 1988). Most North American occurrences have been on Alaskan islands and at Alaskan coastal locations (Armstrong 1990). There is also one interior Alaskan record and one from Port Townsend, Washington State (Armstrong 1990).

This sighting represents the first occurrence in Canada, and the first spring record for North America. Other records, all during autumn along coastal western Alaska, are from Nunivak Island, St Lawrence Island, and Point

Barrow (Robertson 1990). Another Siberian Accentor was located in Vancouver, British Columbia, on 15 December 1993. Unfortunately, it was seen by only a single observer (Bowling 1994c) ("The Birds of British Columbia" volume 3).

In Tappen, the darker bird was seen on four occasions at our pool, first on 5 March, both drinking and bathing, after which it preened in a pond-side lilac (*Syringa sp.*) bush. The lighter bird was first seen on 6 March, then daily from 29 March until 10 April. It developed a regular routine and route around the outer garden scrub, feeding on suet under the garden feeder. These observations were consistent with their winter use of river and stream bank thickets, tangles, scrub and human settlements, in Asia (Cramp 1988). Ground movement by the lighter accentor was skulking with rapid running, occasionally stretching as on tiptoes, similar to the actions of a Northern Wheatear, *Oenanthe oenanthe*, apparently in an alert posture. Flight was fast and direct. This accentor was passive until the arrival of a female Spotted Towhee, *Pipilo maculatus*, which became territorial and aggressive when she encountered the accentor. Further disturbance was created by influxes of female Red-winged Blackbirds, *Agelaius phoeniceus*.

After a period of overcast with low clouds throughout the stay of the accentors, the clouds cleared to sun on 10 April, the last day that the lighter bird was seen, and strong south winds followed on 11 April.

The fact that two birds arrived in interior British Columbia at about the same time, suggests that they travelled together. Siberian Accentors are normally solitary or in small loose parties outside the breeding season. Two observed together in winter in eastern Russia were thought possibly a pair (Cramp 1988), while up to five vagrants have been reported together twice in Japan (Brazil 1991). Since geographic variation in plumage in this species is slight, and the moult period is in late summer (Cramp 1988), two birds together in March/April having as much difference in plumage as the two Siberian Accentors at Tappen seem likely to have been male and female. Although their association suggests pair bonding, they had separate foraging areas, maintaining loose company by using the common source for drinking and bathing.

ACKNOWLEDGEMENTS

Mackin Smith of Ann Arbor, Michigan, USA supplied us with details of a specimen. We thank Mary J. Tait, and Martin K. McNicholl for comments on an earlier draft of the manuscript.

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The Royal Air Force Ornithological Society - Newsletter number 58, Autumn 94, pages 44 - 45.

**TABLE 1 - FEATURES OBSERVED ON ACCENTORS AT
TAPPEN, BC CANADA, 1994**

Optical instrument (s) used	10x40 binoculars	10x40 binoculars and 30x telescope
Overall plumage	dark	light
Size	Song Sparrow, <i>Melospiza melodia</i>	Song Sparrow, <i>Melospiza melodia</i>
Form	Accentor like Dunnock <i>Prunella modularis</i>	Accentor like Dunnock <i>Prunella modularis</i>
Supercilium	tawny-buff	ochre with fine black border
Cap	blackish	brown, streaked with black
Ear Coverts	blackish	blackish with two bars reaching to shoulder; ochre dot between
Shoulders	light grey patch	light grey patch
Throat/breast	tawny/buff	ochre; darker at throat
Breast	black (smudge) band	clear, no trace of band
Flanks	two lines - fine black streaks	two lines - broad grey streaks
Nape/mantle	tawny/red with black streaking	tawny/red with brown/black streaking
Rump/tail	unmarked black/brown	unmarked black/brown
Wings	two fine wing bars	one fine wing bar; white mark at alulua
Legs	form - strong; bright yellow	form - strong; bright yellow

EXPEDITION TO ORFORD NESS - 24-27 JULY 1997

by Squadron Leader Martin Godfrey

INTRODUCTION

Orford Ness, on the Suffolk coast, was recently acquired by the National Trust after many years of occupation by the Ministry of Defence. Easily accessible and under-recorded in all areas of natural history the Ness should prove to be an ideal site for ornithological projects. The purpose of the visit was to survey the site, establish what these projects might be and make recommendations to the RAFOS committee.

MEMBERS

Sqn Ldr Martin Godfrey (Leader)
CT Dai Ainsworth (Photographer)
Mr Vic Couzins
Mr Colin Wearn (Ringing co-ord)
Mrs Julie-Ann Wearn
Mrs Sarajane Williams

RESERVE DESCRIPTION

Orford Ness is a spit of land on the Suffolk coast bounded on one side by the rivers Alde and Ore and on the other by the North Sea. It is joined to the mainland by a narrow neck at Aldborough. Some 12 miles long, the majority of the Ness is owned by the National Trust with a small portion at the southern end owned by English Nature. The Ness comprises shingle banks on its seaward side with saltmarsh, wet grazing meadows, reedbeds and brackish pools and ditches to the landward. The ex-MOD buildings are still largely intact and provide sheltered areas for nesting and concrete as a substrate for plant growth.

The whole site is environmentally sensitive and interesting. The shingle has nationally scarce plants, such as Sea Pea and Sea Kale, and fragile Lichen crusts which support, in turn, flowering plants. Nesting birds include Little Tern on the shingle, Barn Owl in the old buildings and Avocet on the brackish pools. There are also rare insects and spiders and the fauna of the pools and ditches is largely unexplored.

RECCE RESULTS

The northern part of the Ness has a large mixed colony of Lesser Black Backed and Herring Gulls holding a significant proportion of the National and European breeding populations. There are also some Yellow Legged Gulls in the colony which may breed. A small number of Common Gulls occupy shingle further south amongst old buildings. Although they seem to display breeding behaviour and even nest they do not breed. The long spit also has 3 colonies of Little Terns, although one had recently been destroyed by motorcyclists, and these usually breed.

Further inland a number of common birds breed, including Wheatear and Meadow Pipit, and the reedbeds have Marsh and Sedge Warblers. Barn Owls breed successfully in old buildings as do Swallows and a surprising number of Stock Doves. The brackish pools hold breeding Avocet, Black Headed Gulls and a few ducks and geese. Marsh Harriers definitely breed and there is some evidence that a pair of Hen Harriers have tried to breed.

Out of the breeding season the Ness has passage Waders and is under studied for passerine migrants and seabird movements. In the winter it holds reasonable numbers of wildfowl.

WORK ACHIEVED

As well as the general recce the team were able to ring a number of species, including Marsh and Sedge Warbler, Barn Owl, Wheatear and Stock Dove. Some members assisted with the census and ringing of a Little Tern colony and discovered that the pulli moved up the beach to the cover of vegetation when they were able to walk. They stayed under cover and were fed by their parents away from the nest site.

RECOMMENDATIONS

The whole Ness is understudied and there are many opportunities for short and long term project both by the society as a whole and by individual members. Indeed the Warden would welcome the presence of anyone who can contribute.

Some thoughts are:

- a. The ecology of nesting in the mixed Lesser Black Backed and Herring Gull colony.
- b. A long term study of the behaviour of the Common Gulls.
- c. Tracking down evidence for Hen Harrier breeding.
- d. Tracking down evidence for Yellow Legged Gull breeding.
- e. Breeding bird Ringing projects.
- f. Spring and autumn migration of waders and passerines.
- g. Seawatching.

Members who can contribute to areas other than ornithology would be especially welcome on the Ness; botany, entomology and the study of some of the more obscure areas of natural history all need work.

CONCLUSION

The Ness provides a first class opportunity to make studies in many areas of ornithology and natural history and members should be encouraged to propose and undertake projects.

SPECIES LIST - ORFORD NESS 1997

Commonerant	Phalacrocorax carbo
Little egret	Egretta garzetta
Grey heron	Ardea cinerea
Spoonbill	Platalea leucorodia
Mute Swan	Cygnus olor
Greylag goose	Anser anser
Brent goose	Branta bernicia
Shelduck	Tadorna tadorna
Marsh harrier	Circus aeruginosus
Sparrowhawk	Accipiter nisus
Kestrel	Falco subbuteo
Pheasant	Phasianus colchicus
Moorhen	Gallinula chloropus
Oystercatcher	Haematopus ostralegus
Avocet	Resurvirostra avosetta
Little Ringed Plover	Charadrius dubius
Lapwing	Vanellus vanellus
Dunlin	Calidris alpina
Ruff	Philomachus pugnax
Curlew	Numenius arquata
Black tailed godwit	Limosa limosa
Redshank	Tringa totanus
Common sandpiper	Actitis hypoleucos
Green sandpiper	Tringa ochropus
Black headed gull	Larus ridibundus
Herring Gull	Larus argentatus
Common Gull	Larus canus
Great Black backed Gull	Larus Marinus
Lesser Black backed Gull	Larus fuscus
Sandwich tern	Sterna sandvicensis
Common tern	Sterna hirundo
Little tern	Sterna albifrons
Wood pigeon	Columba palumbus
Stock dove	Columba oenas
Barn owl	tyto alba
Swift	Apus apus
Skylark	Alauda arvensis
Swallow	Hirunda rustica
House martin	Delichon urbia
Meadow pipit	Anthus pratensis

Pied wagtail
Whinchat
Northern wheatear
Blackbird
Sedge warbler
Reed warbler
Willow warbler
Starling
Magpie
Jackdaw
House sparrow
Goldfinch
Linnet
Reed bunting

Motacilla alba
Saxicola rubetra
Oenanthe oenanthe
Turdus merula
Acrocephalus schoenobaenus
Acrocephalus scirpaceus
Phylloscopus trochilus
Sturnus vulgaris
Pica pica
Corvus monedula
Passer domesticus
Carduelis carduelis
Carduelis cannabina
Emberiza schoeniculus

NEST SITE PREFERENCES IN A MIXED GULL COLONY

by Squadron Leader M F Godfrey

INTRODUCTION

Anecdotal evidence suggests that in mixed colonies of Lesser Black Backed Gulls, *Larus fuscus*, and Herring Gull, *Larus argentatus*, the former prefers to nest in longer vegetation whilst the latter prefers very short vegetation or stones and rock. Allied to this is the suggestion that *L.fuscus* makes greater use of "lookout points" to enable it to see predators which might be hidden by the long vegetation. An opportunity to test these hypotheses was taken on a RAFOS trip to Orford Ness over the period 22-26 April 1998.

METHODS

Orford Ness has an extensive breeding population of *L.fuscus* and *L.argentatus* centred on the northern part of the Ness in a large area of rough vegetation surrounded by an extended border of very short sward and shingle. Conveniently the vegetation also has many fence posts which can be used by the birds for perching. Sample quadrats were taken to estimate the height of the vegetation within the colony. Eight sample plots in both the long grassland and the short sward/shingle were counted for *L.fuscus* and *L.argenteus* as were 5 random strips of fence posts.

RESULTS

The long vegetation, comprising almost exclusively of grass, averaged 11.8cm in height. It was, however, extremely tussocky with a maximum height of 50 cm and a minimum of 2 cm. The short sward consisted partly of grass of approximately 1 cm height mixed with areas of shingle.

The Orford Ness Wardens had carried out a total count of both species and reported that 72% of birds were *L.fuscus* and 27% *L.argentatus*; these percentages were used to calculate the expected proportions of birds at a given location.

Long Vegetation

	L. argentatus	L. fuscus
Sample size	8	8
Total Birds	22	309
Average	2.75	38.6
Standard deviation	1.5	8.7

Short Sward

	L. argentatus	L. fuscus
Sample size	8	8
Total Birds	132	217
Average	16.5	27.1
Standard deviation	5	6.9

Fence posts

	L. argentatus	L. fuscus
Sample size	5	5
Total Birds	149	46
Average	29.8	9.2
Standard deviation	8.8	7.3

Contingency Tables

Observed

	Long Vegetation	Short Sward	Posts	Total
L. argentatus	22	132	149	303
L. fuscus	309	217	46	263
Total	259	349	195	566

Expected

	Long Vegetation	Short Sward	Posts
L. argentatus	57	77	43
L. fuscus	186	251	140

Chi-squared

	Long Vegetation	Short Sward	Posts
L. argentatus	21.49	39.3	261.6
L. fuscus	81.33	4.6	63.1

Number of degrees of freedom = 2

DISCUSSION

The results show that there is a significant correlation (at the 99% level) supporting the hypothesis that *L. fuscus* prefers long vegetation and *L. argentatus* short vegetation and shingle. The observed numbers of *L. fuscus* on short sward and shingle are not significant and are what would be expected by chance. What is surprising is that the evidence for post use is the exact opposite of the anecdotal evidence. A significant correlation (at the 99% level) was found between *L. argentatus* and post use. A further study of post use at the breeding colony at Orford Ness and elsewhere would be useful to clarify this issue.

AUTUMN MIGRANTS OVERSHOOTING SOUTH WEST IRELAND AND IBERIA

Dr W.R.P. Bourne

Frank Walker (RAFOS Journal 26: 13-18, 1997) has provided a valuable account of bird migration seen in SW Portugal later in the season than most previous observations (see also Henty 1961 and Lister 1985). There is, however, a drawback to the suggestion that the Stock Doves, Corn Buntings, Jackdaws, Spanish Sparrows and Starlings flying SW out to sea were winter visitors to Madeira and the Azores, since so far the first two have not yet been recorded there, the third has only been recorded once on each of them, and while each group has a resident population of one of the last two, there is little evidence for much immigration of either of them (Bannerman and Bannerman 1963-68, and personal observation in Madeira).

Some observations with RAF radar in Northern Ireland in the autumn of 1959 (Bourne 1978) suggest an alternative explanation. Early in that autumn bad weather led to an accumulation of migrants in Britain and Ireland. Eventually a great SSW bird movement over Ireland at night was detected with radar following the onset of a cold northerly gale behind a depression on 27 October. Over the next four days thousands of Finches and hundreds of Starlings, Thrushes and Skylarks appeared at Cape Clear on the far SW coast of Ireland, starting with a NNW return movement into the wind from the sea on the 28th, followed by declining SW movements out to sea.

Judging by their composition both these late autumn bird movements in SW Ireland and SW Portugal can hardly have involved summer visitors to northern Europe bound for Africa, but surely instead winter visitors to western Europe from the east which had overshot their destination and started to fly out to sea? Observations by the Royal Naval Bird-watching Society regularly summarised in Sea Swallow indicate such migrants are widespread offshore. Presumably the birds seen returning from the sea again in both areas had realised their mistake, though observations with radar show that once they find themselves out at sea in daylight they usually appear to fly high while returning to land, presumably in order to avoid predators (Bourne 1960), and are not detected.

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EXPEDITION TO VARANGERFJORDEN, NORWAY
EXERCISE ARCTIC SUMMER
26 APRIL TO 17 MAY 1996

by
Warrant Officer Chris Sparks RAF

INTRODUCTION

The Steller's Eider, *Polysticta stelleri*, is a globally threatened waterfowl species, categorised as vulnerable by the IUCN classification of rare and endangered species. It breeds and winters almost exclusively north of the Arctic Circle, nesting in central and west Siberia and Alaska. The species has declined in Siberia since the end of the last century, but numbers wintering in Finnmark have been stable in recent years at between 5000 and 12000 birds. In addition, the Baltic Sea has been recolonised as a regular wintering area since the early 1980s. However, there have been serious declines of 50-75% in the last 25 years in the North American populations which give considerable rise for concern. For these reasons it is important that basic ecological information is obtained relating to this rare species, in order to establish conservation priorities and adequate protection measures. The accessibility of relatively large numbers of Steller's Eiders in Varangerfjorden, northern Norway, offer the possibility for detailed study in spring when birds commence pre-nesting nutrient accumulation which may be crucial to ultimate breeding success.

The King Eider, *Somateria spectabilis*, also breeds and winters in Arctic locations and, although one of the most abundant ducks in the world, ecological studies of this species are few. The Russian population is estimated at between 1 million and 1.5 million. In parts of the Arctic, King Eiders are shot in large numbers although this appears to have little impact on the overall population.

The two species are found in Varangerfjorden offering opportunities for comparisons of the distribution and habitat use during the spring. A study of the distribution, abundance and feeding ecology of Steller's Eiders was initiated by Carl Mitchell (The Wildfowl & Wetlands Trust, Slimbridge, Gloucester, UK) and Dr Tony Fox (NERI, Kalo, Denmark) in 1995. This followed organised censuses carried out by Norwegian workers in the 1980s and early 1990s. The Wildfowl and Wetlands Trust at Slimbridge, Gloucester, asked the Society if it would undertake an ornithological and ecological survey of the globally threatened Steller's Eider and, at the same time, to collect data on the related King

Eider which is also found in Varangerfjorden in significant numbers. Finally RAFOS was asked to collect data on any other bird species breeding in the area on behalf of the Norwegian ornithological organisation, Norrbottens Ornitologiska Forening (NOF). A map of the Arctic Ocean indicating the location of Varangerfjorden is attached.

TEAM COMPOSITION

WO C J Sparks	RAF Innsworth - Expedition Leader and Bird Recorder
FS J D Bryden	RAF Innsworth - Deputy Leader and Equipment Co-ordinator
Chf Tech S J M Heather	RAF Wyton -Catering Co-ordinator
Sgt A Lea	RAF Wittering
SAC N D Pead	RAF Wittering
Mr R Frost	RAF Wyton - Photographer
Mr A G Lack	Ramsey, Cambs - Weather Recorder
Mr M D Wightman	MOD(PE) Portland Ornithological Survey Co-ordinator and Treasurer

OBJECTIVES

Ornithological. To undertake a reconnaissance expedition to study Steller's Eiders and King Eiders and collect basic ecological data relating to their distribution and habitat use. To compile a set of extensive land based counts of Varangerfjorden in order to assess the spring distribution and abundance of Steller's Eiders and King Eiders and determine any obvious physical/ecological correlates. To collect data on other bird species breeding, or present in, the area on behalf of the NOF.

Adventurous Training. To initiate or develop skills in intensive map reading and compass navigation, which will be associated with the ornithological work, over coastal terrain that will be both extremely rocky and snow covered. In addition, to initiate or develop campcraft skills dependent upon the abilities of individual expedition members.

METHODS

Complete counts of the two eider species were to be carried out from the shoreline of both the northern and southern coastlines of the Varangerfjorden during the expedition. This would involve four two man teams operating at the same time, firstly to cover the northern coastline from a base camp at Vestre

Neiden. Records were to be kept of sex ratio, habitat details, distance of flock from shore, state of tide and time of day, using the following record card:

RECORD CARD

DATE	TIME	GRID REF		OBSERVER
SPECIES		BOS		
		#	#	Time
DISTANCE FROM SHORE		<50M	51-200M	>200M
STATE OF TIDE				

SURVEY LOCATION AND DAILY ITINERARY

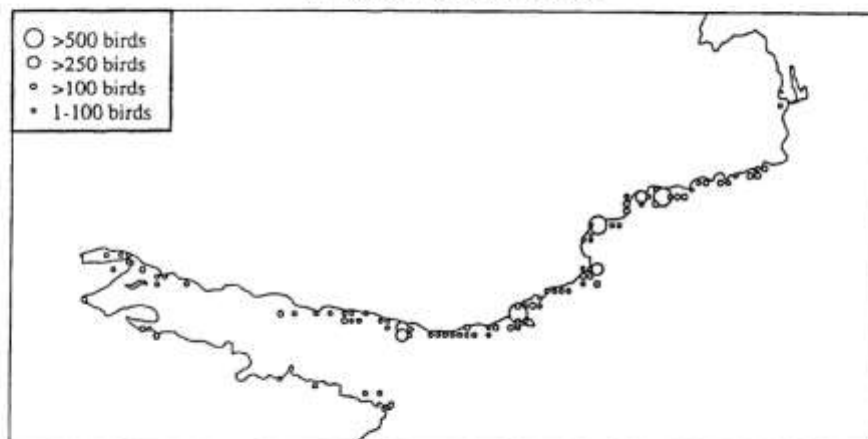
The first full day in theatre, Tue 30 Apr 96, was taken up with familiarisation with the local environment and setting up the base camp in three chalets at Vestre Jacobselv. The expedition had to register with the police station in Vadsø. Over the next eight days, dependent on weather conditions (see Weather Report), four two-man teams were deployed using both vehicles along the entire northern shoreline beginning at Varangerbotn and ending at Vardo; a distance of approximately 125 km (see map). Each two-man team would slowly cover approximately 5 km each day systematically recording Steller's and King Eiders and any other species encountered. Walking the extremely rocky and snow covered shoreline was difficult and arduous in places. On more than one occasion survey work had to be abandoned because of the weather which could change very quickly from dry and cloudy to complete 'white-out' conditions. There was just one day when the road from Komagvaer to Vardo was clear of snow and ice which, fortunately, was the last day scheduled for survey work on the northern shoreline. Despite the weather, the entire coastline was surveyed by the end of Wed 8 May 96. The expedition left Vestre Jacobselv on Thu 9 May 96 and travelled to Neiden some 40 km south of the southern shoreline of Varangerfjorden. There are no chalets available closer to the southern coastline. Surveying of the southern shoreline began on the journey to Neiden and was completed by Sat 11 May 96. Whereas the northern shoreline has a very gentle gradient to the sea, the southern shoreline is more characteristic of Norwegian

fjords; steep cliffs interspersed with small deep bays which are not favoured by Steller's or King Eiders. Consequently, the coastline between Karlebotn and Burgoynesvaer was covered comparatively quickly with the majority of the survey being conducted from the road. Because the survey of the southern side of the fjord was less demanding, only half the expedition members were required each day. By rotating team members on 10 and 11 May, journeys south into the Ovre Pasvik Valley, on the edge of the Siberian Tiaga, were made by all expedition members. These visits added considerable to the overall bird species list as can be seen at Annex B to this Report.

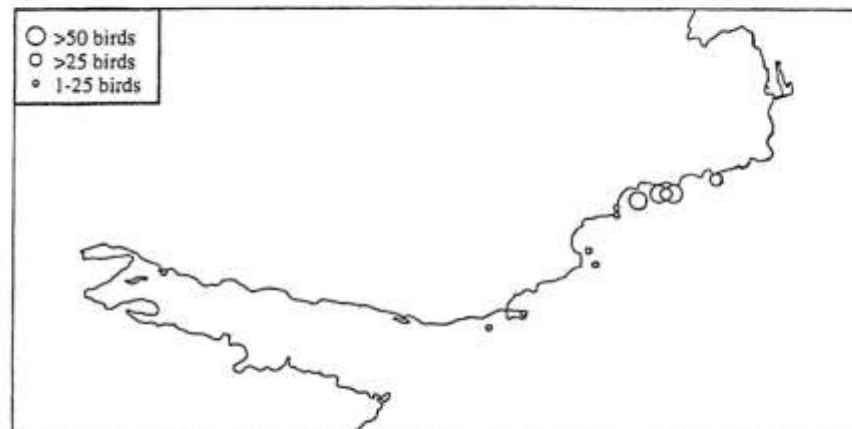
RESULTS AND COMMENTS

Details of the 78 bird species seen in the Varangerfjorden area, and the 106 bird species observed on the outward and return journeys, are contained in the Systematic List at Annex B to this Report. The expedition recorded a total of 9,586 Steller's Eiders and 381 King Eiders. Survey spreadsheets for both species are at Appendix 1 and Appendix 2 of Annex B and the densities and distribution of both species, compiled from expedition data by The Wildfowl and Wetlands Trust, are shown here:

RAFOS STELLER'S EIDER



RAFOS KING EIDER



The Wildfowl & Wetlands Trust consider the expedition to have been highly successful and are grateful to RAFOS for carrying out the extensive survey work.

Carl Mitchell was astonished that the expedition had been able to cover the entire Varangerfjorden shorelines given the prevailing weather conditions. The expedition most certainly met the spirit of adventurous training being both arduous and demanding at times. It had strong scientific aims and objectives which will most certainly support global conservation of both Steller's and King Eiders.

APPLICATION OF RESULTS

The results of this expedition will compliment those obtained by Fox & Mitchell (1995) by providing additional data on the distribution and abundance of waterfowl in Varangerfjorden. The aim was to establish which bays, and in particular which habitats are used by Steller's and King Eiders at this important time of the year in order to better understand the species' ecological requirements. Fieldwork is also being organised by Fox & Mitchell for the late

winter period, thus counts in May are of considerable importance. Observations of the distribution and abundance of other species of birds, and wildfowl in particular, would be of importance to the region. All sightings and data would be made available to The Wildfowl & Wetlands Trust, Slimbridge, the Norwegian Institute for Nature Management (NINA) in Tromsø, the NOF and the Office of the Finnmark County Governor.

ACKNOWLEDGEMENTS

RAFOS is grateful for the assistance and information given to the expedition by John Olsen in Vestre Jacobselv. Grateful thanks is also extended to the following:

OC Accounts Flt, RAF Coltishall

OC MT Flt, RAF Coltishall

OC TSE, RAF Innsworth

OC Accounts Flt, RAF Innsworth

OC MT Flt, RAF Innsworth

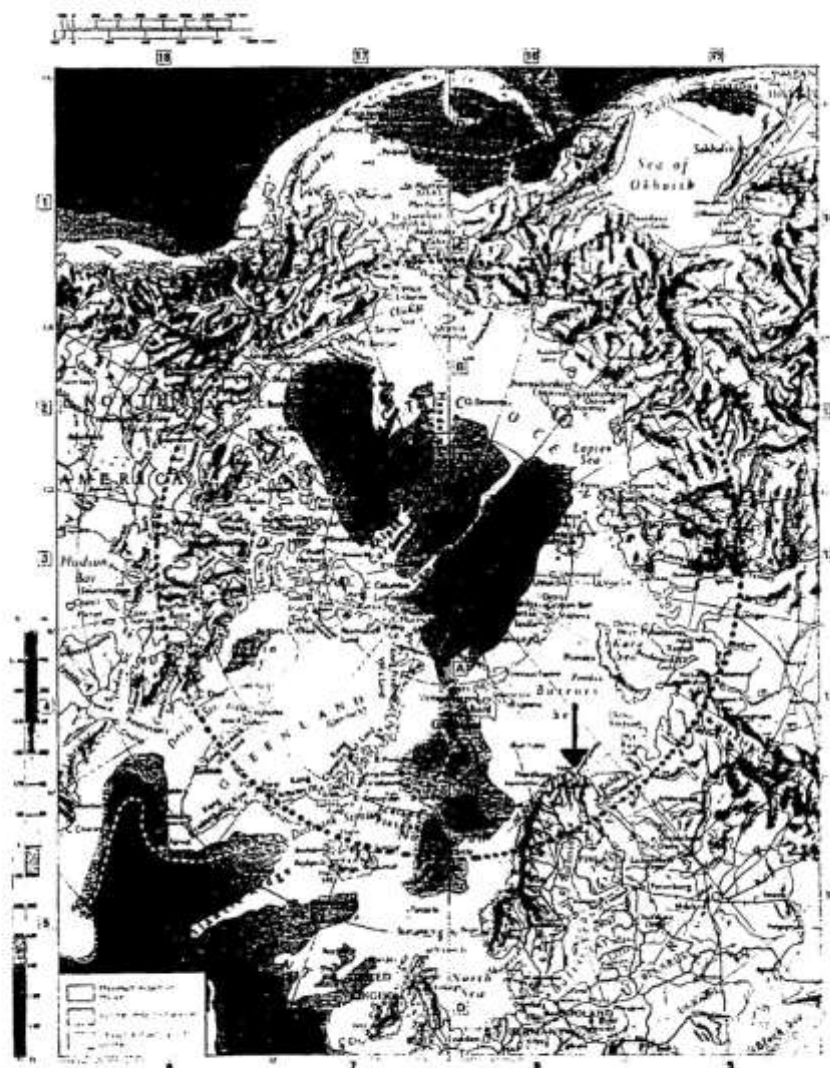
Mrs Shirley Fox, Thatcham Sub-Depot of the Base Ordnance Depot,
Bicester (Royal Logistics Corps).

ANNEXES

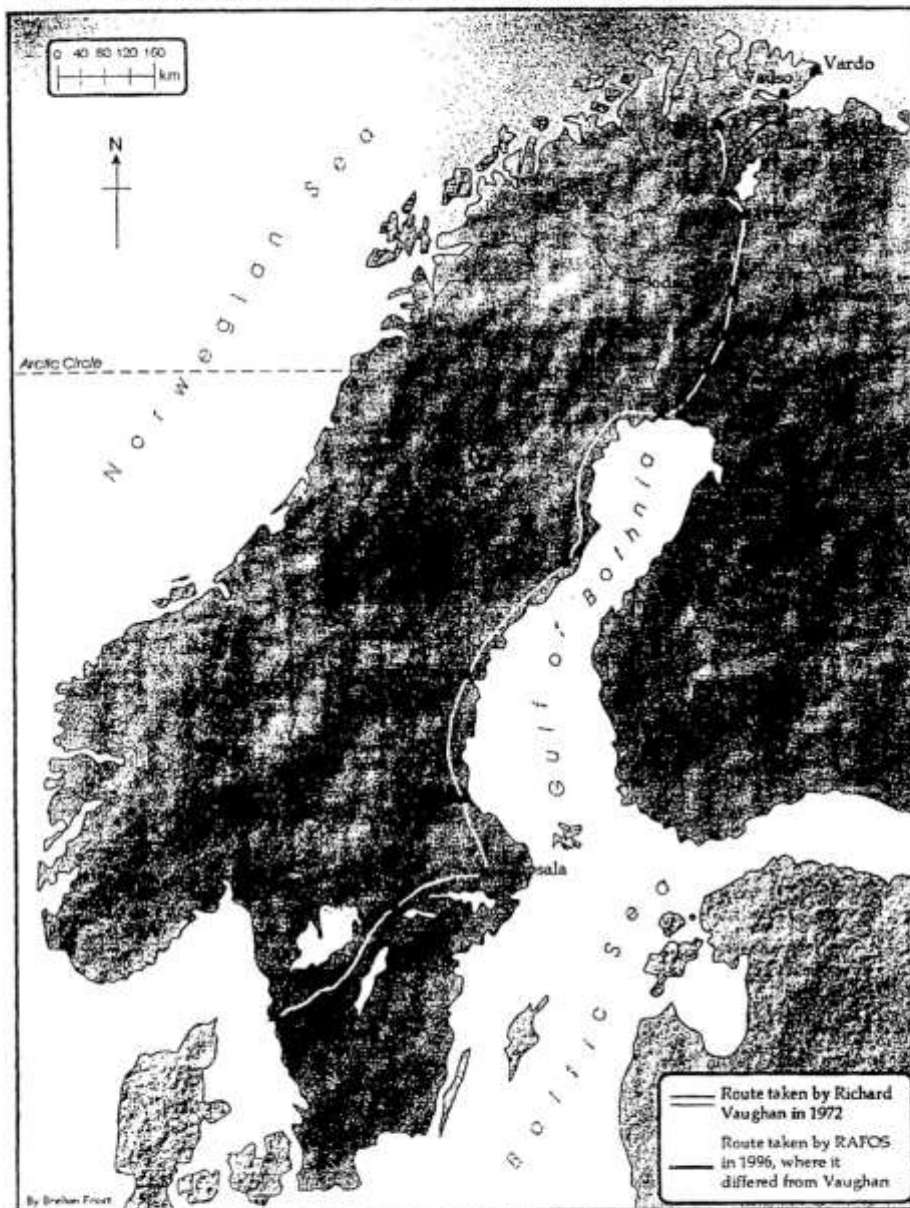
- A. Weather
- B. Systematic list and Tables
- C. Organisation and Logistics
- D. Local Contacts

MAP OF THE ARCTIC OCEAN INDICATING THE LOCATION OF VARANGERFJORDEN

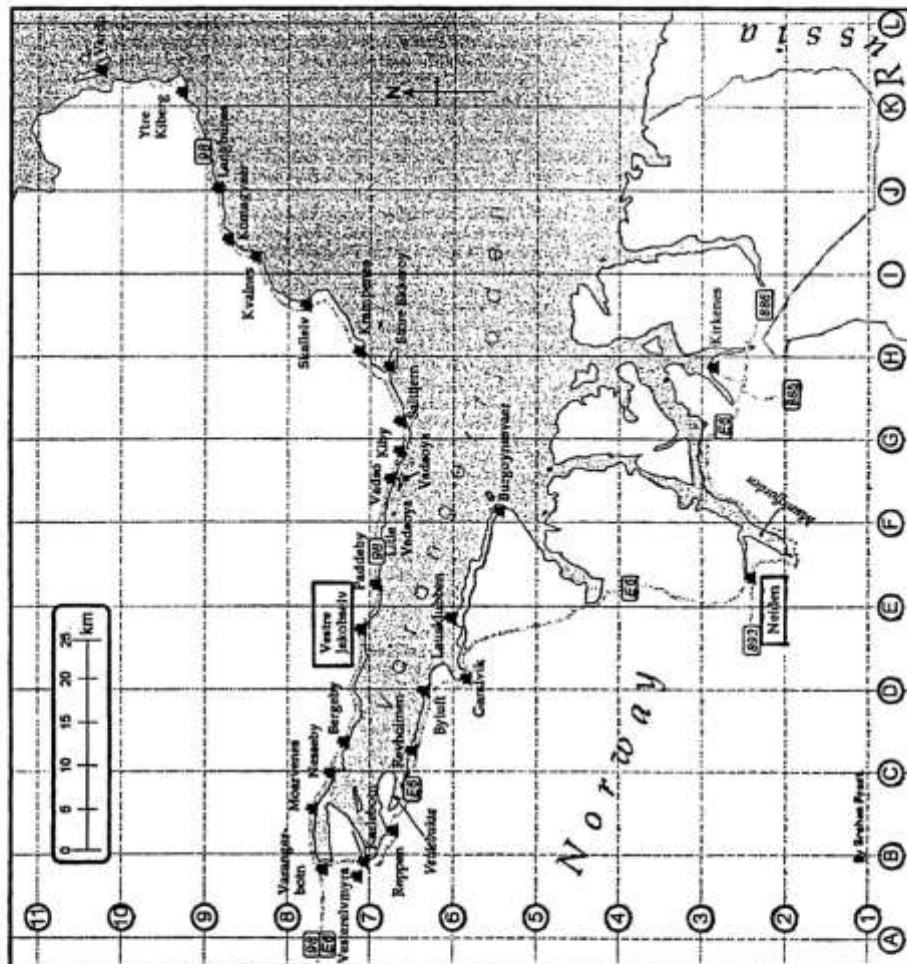
ARCTIC OCEAN 1:28 000 000



MAP OF SCANDINAVIA
 ROUTE TO VARANGERFJORDEN TAKEN BY RAFOS EXPEDITION 'ARCTIC SUMMER' 1996



MAP OF THE VARANGEREJORDEN SURVEY AREA



ANNEX A

WEATHER

(Compiled by Tony Lack, Expedition Weather Recorder)

The British Meteorological Office supplied the following temperature and rainfall statistics for early May in the Varangerfjorden area:

Vardo, Norway - WMO 01098 - 70 22N 031 06E -
Elevation 43 Ft

Mean Max Temp (oC)	4	
Mean Min Temp (oC)	0	
Absolute Max Temp (oC)	21	
Absolute Min Temp (oC)	-10	
Mean No of Days Temp > 0 oC		15.6
Mean Precipitation (mm)	33	
Mean No of Days Precipitation > 2mm		4.4

Scandinavia, and in particular the Varangerfjorden area, experienced a severe 1995/1996 winter. Much more snow was lying than is usual for the time of year and locals were saying that the temperatures and snow cover were the worst for some 10 years.

WEATHER REPORT - EXERCISE 'ARCTIC SUMMER' 1996

- 26 Apr - Day of departure, Harwich to Gothenburg - dry and sunny after cloudy start.
- 27 Apr - Arrive Gothenburg, journey to Avesta area, Sweden - fog until 1100 hours then cloudy with slight rain. Temperature in Gothenburg +11 oC.
- 28 Apr - Journey to Rovaniemi, Finland - moderate overnight rain on cold front, ceased by 0500 hours, then dry with sunny intervals and isolated light showers during the morning. Frequent light to moderate showers during afternoon, occasionally wintry.
- 29 Apr - Journey to Varangerfjorden, Norway - temperature on departure at 0340 hours -4 oC, at Ivalo midday +8 oC. Sunny and cold with light winds and clear

sky until 1700 hours, then cloudy.

- 30 Apr** - Varangerfjorden - cloudy with slight to moderate snow until 0930 hours with slight snow again during the afternoon. Clearing sky after 1900 hours. Wind west to north-westerly, moderate to fresh. Max temp +1 oC, Min temp -3 oC.
- 1 May** - Varangerfjorden - sunny start but soon becoming cloudy with snow showers developing from 0745 hours and becoming moderate to heavy and frequent until 1700 hours. Wind westerly, moderate to fresh. Max temp -1 oC, Min temp -7 oC.
- 2 May** - Varangerfjorden - dry and sunny with excellent visibility. Wind light and variable. Max temp +1 oC, Min temp -5 oC.
- 3 May** - Varangerfjorden - dry and sunny with excellent visibility. Wind south-westerly and light. Max temp +3 oC, Min temp -5 oC.
- 4 May** - Varangerfjorden - dry, mainly cloudy but with some hazy sunshine. Wind north-easterly and light. Max temp +3 oC, Min temp -5 oC.
- 5 May** - Varangerfjorden - cloudy but dry with excellent visibility. Wind north-easterly, light to moderate. Max temp +2 oC, Min temp -1 oC.
- 6 May** - Varangerfjorden - cloudy with slight, occasionally moderate, snow. Wind north-easterly, moderate to fresh. Max temp 0 oC, Min temp -1 oC.
- 7 May** - Varangerfjorden - cloudy with slight snow until mid-afternoon. Moderate to good visibility. Wind north to north-easterly, light to moderate. Max temp +1 oC, Min temp -1 oC.
- 8 May** - Varangerfjorden - dry and mainly sunny with excellent visibility. Wind north-westerly, light to moderate. Max temp 0 oC, Min temp -2 oC.

- 9 May - Varangerfjorden - dry and sunny with excellent visibility. Wind south-westerly, light to moderate. Max temp +2 oC, Min temp -3 oC.
- 10 May - Varangerfjorden - sunny at first becoming cloudy with isolated snow showers late morning and sleet late afternoon. Clearing sky during evening. Wind south-westerly, moderate to fresh. Max temp +4 oC, Min temp -3 oC.

ANNEX B

RAFOS EXPEDITION 'ARCTIC SUMMER' 1996 - SYSTEMATIC LIST

(Recorded by Warrant Officer Chris Sparks)
(Compiled by Mr Martin Wightman)

The order and nomenclature adopted in this report follow those used in the "British Birds" List of Birds of the Western Palaearctic (1984).

The orders of magnitude adopted in this report refer to numbers of single birds and the following scale is used throughout:

Order 1: 1-10
Order 2: 11-100
Order 3: 101-1000
Order 4: 1001-10000
Order 5: 10001-100000

The term "Recorded daily" should be taken to mean the period spent in the Varangerfjord region ie 30 April-11 May.

Red-throated Diver *Gavia stellata*

Karlebotn: 6 on 5 May; 3 on 9 May.
Munkfjorden: 2 on 10 May; 40 on 11 May.

Black-throated Diver *Gavia arctica*

Langbunes: 1 on 5 May.
Grunnes: 1 on 8 May.
Karlebotn: 3 on 9 May.

Great Northern Diver *Gavia immer*

Little Vadsoya: 1 on 2 May.
Grunnes: 1 on 8 May.

White-billed Diver *Gavia adamsii*

Skallelv: 1 adult on 4 May.
Langbunes: 4 (2 adults and 2 immatures) on 5 May.

Gannet *Sula bassana*

Komagvaer: 1 on 4 May.
Langbunes: 2 on 5 May.
Kiberg: 1 on 8 May.
Vardo: 1 on 8 May.

Cormorant *Phalacrocorax carbo*

Seen daily in small numbers. The largest counts were as follows:

Veidebukta: 19 on 9 May.
Vardo: 9 on 8 May.
Skallelv: 7 on 4 May.
Kiberg: 7 on 8 May.

Shag *Phalacrocorax aristotelis*

Langbunes: 2 on 5 May.
 Komagvaer: 1 on 8 May.
 Sundskjeet: 1 on 8 May.
 Vardo: Order 2 on 8 May.

Whooper Swan *Cygnus cygnus*

Nyrud: 23 on 10 May; 29 on 11 May.

Bean Goose *Anser fabalis*

Ovre Pasvik: 68 on 10 May; 65 on 11 May.
 Mikklesnes: 38 on 10 May.
 Veidebukta: 3 on 9 May.
 Burgoynesvaer: 3 on 9 May.
 Neiden: 2 on 9 May; 6 on 11 May.

Pink-footed Goose *Anser brachyrhynchus*

Vestre Jakobselv: 1 on 5 May.

Greylag Goose *Anser anser*

Skallelv: 3 on 4 May.
 Vestre Jakobselv: 1 on 9 May.

Shelduck *Tadorna tadorna*

Nesseby: 12 on 30 April; 6 on 1 May; 2 on 5 May.
 Bergeby: 3 on 1 May.

Mallard *Anas platyrhynchos*

Seen daily in small numbers. The largest count was 17 between Little Vadsoya and Vadso on 2 May.

Tufted Duck *Aythya fuligula*

Kirkenes: 1 ♂ on 10 May.

Eider *Somateria mollissima*

Recorded daily. Common and widespread. Highest daily count was 2194 between Krampen and Komagvaer on 4 May.

King Eider *Somateria spectabilis*

381 birds were recorded on five dates between 1-8 May. For further details please see Appendix 2 to this Annex.

Steller's Eider

Polysticta stelleri

9586 birds were recorded on eight dates between 1-11 May. For further details please see Appendix 1 to this Annex.

Long-tailed Duck

Clangula hyemalis

Recorded on nine dates, usually in small numbers. Some large concentrations noted as follows:

Munkfjorden: Order 3 on 10 and 11 May.

Lausklubben: 109 on 9 May.

Urdnes: 87 on 4 May.

Common Scoter

Melanitta nigra

Little Vadsoya: 2 on 2 May.

Ekkeroy: 49 on 3 May.

Skallelv: 39 on 4 May.

Komagnes: 10 on 4 May.

Langbunes: 8 on 6 May.

Kiberg: 5 on 6 May.

Vardo: 12 on 8 May.

Velvet Scoter

Melanitta fusca

Nesseby: 2 on 30 April.

Little Vadsoya: 1 on 2 May.

Skallelv: 3 on 4 May.

Karlebotn: 2 on 5 May.

Gandvik: 7 on 9 May.

Munkfjorden: 2 on 10 May.

Goldeneye

Bucephala clangula

Skogfoss: 5 on 10 May; 2 on 11 May.

Nyrud: 9 on 11 May.

Red-breasted Merganser

Mergus serrator

Seen daily, with average totals mid-Order 2. The largest single count was 26 at Karlebotn on 9 May.

White-tailed Eagle

Haliaeetus albicilla

Recorded on nine dates, with a maximum of four birds on the following dates: 1 May; 6 May; 8 May. Number of individuals difficult to assess, but at least 3 adults and 2 immatures involved.

Rough-legged Buzzard

Buteo lagopus

Common and widespread, seen daily in small numbers. The largest daily total was 7 on 10 May.

Golden Eagle	<i>Aquila chrysaetos</i>
Paddeby: 1 immature on 1 May. Skallhalsen: 1 immature on 4 May. Reppen: 1 on 9 May. Gandvik: 2 on 9 May. Revholmen: 1 on 9 May.	
Osprey	<i>Pandion haliaetus</i>
Nyrud: 1 on 11 May.	
Merlin	<i>Falco columbarius</i>
Neiden: 1 ♀ on 9 May; 1 ♂ on 10 May.	
Gyr Falcon	<i>Falco rusticolus</i>
Ovre Pasvik: 1 on 10 May.	
Peregrine	<i>Falco peregrinus</i>
Vardo: 1 on 8 May.	
Willow Grouse	<i>Lagopus lagopus</i>
Vest Erelvmyra: 3 on 5 May. Langbunes: 3 on 6 May. Vaggaten: 5 on 11 May.	
Capercaillie	<i>Tetrao urogallus</i>
Ovre Pasvik: 1 ♀ on 10 May.	
Crane	<i>Grus grus</i>
Ovre Pasvik: 2 on 10 May; 2 on 11 May.	
Oystercatcher	<i>Haematopus ostralegus</i>
Seen daily in small numbers. Common and widespread along shoreline. Highest daily total was 53 between Krampenes and Komagvaer on 4 May.	
Ringed Plover	<i>Charadrius hiaticula</i>
Ekkeroy: 2 on 1 May. Skallelv: 2 on 4 May, one of which was display-flying.	
Golden Plover	<i>Pluvialis apricaria</i>
Kiberg: 1 on 8 May. Skogfoss: 1 on 10 May.	

Lapwing

Vanellus vanellus

Nesseby: 3 on 1 May.
Varangerbotn: 2 on 5 May.
Nyrud: 1 on 10 and 11 May.

Purple Sandpiper

Calidris maritima

Recorded daily between 30 April and 8 May. Abundant along the northern shore of Varangerfjord, but not recorded at all on the southern. Highest daily total was 1545 between Krampenes and Komagvaer on 4 May. Other significant totals were low Order 4 between Vadso and Krampenes on 3 May and 759 between Komagvaer and Yt Kiberg on 8 May.

Snipe

Gallinago gallinago

Vestre Jakobselv: 1 on 30 April.

Curlew

Numenius arquata

Bergeby: 2 on 1 May.
Paddeby: 1 on 1 May.
Kiby: 2 on 3 May; 2 on 8 May.
Krampenes: 4 on 3 May; 1 on 5 May.
Komagvaer: 1 on 8 May.
Skallelv: 1 on 8 May.
Karlebotn: 1 on 9 May.

Redshank

Tringa totanus

Golnes: 1 on 3 May.
Byluft: 1 on 9 May.

Pomarine Skua

Stercorarius pomarinus

Kvalnes: 1 on 4 May.
Langbunes: 4 on 5 May.
Komagvaer: 7 on 6 May included 2 dark-phase birds.

Arctic Skua

Stercorarius parasiticus

Skallnes: 3 on 4 May.
Langbunes: 11 on 5 May included 5 dark-phases; 1 on 6 May.
Karlebotn: 1 pale-phase on 5 May.
Komagvaer: 1 dark-phase on 8 May.
Grunnes: 4 dark-phases on 8 May.
Munkfjorden: 3 on 10 May included two dark-phases; 2 dark-phases on 11 May.

Long-tailed Skua

Stercorarius longicaudus

Skallnes: 5 on 4 May.
Munkfjorden: 2 on 11 May.

Black-headed Gull

Larus ridibundus

Recorded on 8 dates in small numbers. The largest count was 17 at Byluft on 9 May.

Common Gull

Larus canus

Recorded daily. Widespread and common, with several day-totals estimated at mid Order 3. The largest individual count was 210 at Moarenes on 2 May.

Lesser Black-backed Gull

Larus fuscus

Paddeby: 3 on 1 May.

Herring Gull

Larus argentatus

Recorded daily. Widespread and reasonably common. Highest daily total was 156 between Krampenenes and Komagvaer on 4 May.

Iceland Gull

Larus glaucooides

Vadso: 1 second-summer in the harbour on 2 May and 7 May.

Vestre Jakobselv: 1 second-summer on 2 May.

Vadsoya: 1 adult and 1 second-summer on 3 May.

Glaucous Gull

Larus hyperboreus

Nesseby: 1 on 30 April.

Langbunes: 1 second-summer on 6 May.

Vestre Jakobselv: 1 in the harbour on 7 May.

Great Black-backed Gull

Larus marinus

Recorded daily. Widespread and fairly common. Most daily estimates were low Order 3. The highest daily count was 189 between Krampenenes and Komagvaer on 4 May.

Kittiwake

Rissa tridactyla

Recorded daily. Common throughout the Varangerfjord but increasingly abundant towards the open sea. Estimated at Order 4 on most days. Large breeding colonies noted at Ekkeroy and Hornoy.

Guillemot

Uria aalge

Langbunes: Order 3 on 5 May.

Hornoy: Order 3 on 8 May.

Black Guillemot

Cephus grylle

Recorded on 5 dates, usually in small numbers. Fairly common in the outer fjord. Largest totals were Order 2 at Langbunes on 4 May; and Order 2 at Hornoy on 8 May.

Puffin	<i>Fratercula arctica</i>
Langbunes: 6 on 5 May.	
Hornoy: Mid Order 3 on 8 May.	
Shore Lark	<i>Eremophila alpestris</i>
Vadso: 5 on 30 April; 6 on 1 May; 3 on 2 May; 21 on 7 May.	
Yt Kiberg: 1 on 8 May.	
White Wagtail	<i>Motacilla alba alba</i>
Veidebukta: 1 on 9 May.	
Gandvik: 1 on 9 May.	
Nyrud: 9 on 10 May;	
Skogfoss: 5 on 11 May.	
Waxwing	<i>Bombycilla garrulus</i>
Nesseby: 1 on 2 May.	
Ring Ouzel	<i>Turdus torquatus</i>
Gandvik: 1 on 9 May.	
Fieldfare	<i>Turdus pilaris</i>
Ovre Pasvik: 7 on 11 May.	
Willow Tit	<i>Parus montanus borealis</i>
Vestre Jakobselv: 1 on 1 May; 2 on 3, 4, 7, 8 May; 4 on 9 May.	
Nesseby: 1 on 2 May.	
Neiden: 1 on 10 May; 2 on 11 May.	
Vaggaten: 2 on 11 May.	
Siberian Tit	<i>Parus cinctus</i>
Vestre Jakobselv: 1 on 1, 5 and 7 May.	
Nesseby: 1 on 2 May.	
Skogfoss: 1 on 11 May.	
Nyrud: 3 on 11 May.	
Great Tit	<i>Parus major</i>
Recorded daily in small numbers. Largest counts were as follows:	
Ovre Pasvik: 9 on 11 May.	
Vestre Jakobselv: 4 on 7 May.	
Great Grey Shrike	<i>Lanius excubitor</i>
Skogfoss: 1 on 10 May.	

Magpie

Pica pica

Recorded on 9 dates in small numbers. The highest counts were as follows:

Ovre Pasvik: 5 on 10 May; 7 on 11 May.

Vestre Jakobselv: 4 on 9 May.

Hooded Crow

Corvus corone cornix

Recorded on 8 dates, usually in small numbers. A sizeable concentration was located at Vestre Jakobselv rubbish tip, and this site provided the highest count, with 25 being present on 1 May.

Raven

Corvus corax

Recorded daily in small numbers. Widespread and reasonably common. Several breeding pairs noted. As with the previous species, Vestre Jakobselv rubbish tip proved to be a popular site, 32 being present on 1 May.

Starling

Sturnus vulgaris

Vestre Jakobselv: 1 on 1, 2 and 7 May.

House Sparrow

Passer domesticus

Recorded daily in small numbers. Never far from human activity or habitation. The largest counts were as follows:

Paddeby: 31 on 30 April.

Karlebotn: 8 on 9 May.

Chaffinch

Fringilla coelebs

Neiden: 1 ♂ on 9 May; 1 ♂ and 1 ♀ on 10 May.

Skogfoss: 1 on 11 May.

Greenfinch

Carduelis chloris

Vestre Jakobselv: 1 on 30 April, 4, 7, and 9 May.

Makkenes: 3 on 1 May; 2 on 2 May.

Neiden: 2 on 9 May; 1 on 10 May.

Skogfoss: 1 on 10 May.

Vaggaten: 1 on 11 May.

Nyrud: 1 on 11 May.

Twite

Carduelis flavirostris

Moarvenes: 2 on 1 May.

Vardo: 3 on 8 May.

Karlebotn: 2 on 9 May.

Ovre Pasvik: 2 on 10 May.

Mealy Redpoll *Carduelis flammea flammea*

Vestre Jakobselv: A single record of 1 bird with the regular flock of Arctic Redpolls on 9 May.

Arctic Redpoll *Carduelis hornemanni*

Recorded daily from 30 April to 9 May. Most records were from Vestre Jakobselv, where an improvised feeding station regularly attracted this striking bird. The largest counts were 11 on 1 May and 7 on 7 May.

Other records were as follows:

Paddeby: 5 on 1 May.

Nesseby: 3 on 2 May.

Makkenes: 6 on 2 May.

Bullfinch *Pyrrhula pyrrhula*

Neiden: 1 ♂ on 10 May.

Lapland Bunting *Calcarius lapponicus*

Skallnes: 1 ♂ on 4 May.

Vaggaten: 1 on 11 May.

Snow Bunting *Plectrophenax nivalis*

Recorded daily between 30 April and 9 May. An abundant and widespread species often to be found in large flocks.

Regularly recorded at garden feeding stations, although the delayed spring and continuing snow cover undoubtedly accounted for what is nevertheless an unusual phenomenon in Finnmark (Jon Olsen pers. comm.). The largest count was 361 at Makkenes on 1 May. Other large totals were Order 4 between Varangerbotn and Vestre Jakobselv on 1 May; Order 3 between Komagvaer and Yt Kiberg on 6 May; and 193 between Krampen and Komagvaer on 4 May.

Yellowhammer *Emberiza citrinella*

Vaggaten: 1 on 11 May.

Reed Bunting *Emberiza schoeniclus*

Vaggaten: 1 ♂ on 11 May.

APPENDIX 1 TO
ANNEX B

Stellar's Elder

Date	Observers	Time	Males	Females	Total	Grid Ref	< 50m	Distance > 50 < 200m	> 200m	Tide
01-May	JDB/SH	1003	20	15	35	NT 6386	X			Low
		1010	3	0	3	NT 6486	X			Low
		1134	5	4	9	NT 6685	X			Low
		1136	5	4	9	NT 6686		X		Low
		1144	7	5	12	NT 6586	X			Low
	AGU/CJS	1210	54	56	110	NT 6884	X			Low
		945	54	41	105	NT 8778			X	Low
		1135	2	1	3	NT 8978	X			Flow
		1155	13	8	21	NT 8978	X			Flow
		1300	15	9	24	NT 8278	X			Flow
	RF/AL	1005	40	22	62	NT 7083	X			Flow
		1045	4	2	6	NT 7082		X		Low
		1110	6	3	9	NT 7183	X			Low
		1205	16	16	32	NT 7183	X			Low
		1338	12	9	21	NT 9478		X		Flow
02-May	NDP/MKW	1403	8	17	25	NT 9678	X			Flow
		1406	10	9	19	NT 9677		X		Flow
		1408	3	1	4	NT 9677			X	Flow
		1500	12	13	25	NT 9777	X			Flow
		1505	92	85	177	NT 9677	X			Flow
	RF/NDP	1027	10	21	31	NT 9778			X	Low
		1047	8	9	15	NT 9877			X	Low
		1128	7	8	15	NT 9878	X			Flow
		1025	11	11	22	NT 7482	X			Low
		1310	14	10	24	PT 0177	X			Flow
	AL/AGL CJS/MKW	1425	1	1	2	PT 0277	X			Flow
		1440	4	3	7	PT 0277	X			Flow
		1445	18	16	34	PT 0276	X			Flow
		1600	195	143	338	PT 0476	X			Full

Steller's Elder

Date	Observers	Time	Males	Females	Total	Grid Ref	Distance < 50m > 50 < 200m > 200m	Tide
03-May	AL/SH	1000	3	7	10	PT 0875	X	Low
		1005	1	2	3	PT 0975	X	Low
		1025	17	11	28	PT 1075	X	Low
		1050	1	1	2	PT 1175	X	Low
		1100	1	1	2	PT 1275	X	Low
		1105	2	3	5	PT 1275	X	Low
		1200	29	31	60	PT 1375	X	Flow
		1010	153	110	263	PT 0475	X	Low
		1030	1	1	2	PT 0575	X	Low
		1040	33	35	68	UC 9279	X	Low
	JDB/CJS	1110	19	20	39	UC 9279	X	Low
		1220	4	4	8	UC 9179	X	Low
		1325	48	55	103	UC 9079	X	Low
		1330	5	5	10	UC 9177	X	Low
		1400	256	270	526	UC 9078	X	Flow
		1500	139	102	241	UC 9078	X	Flow
		1500	11	9	20	UC 9076	X	Flow
		1028	10	14	24	PT 1375	X	Low
		1047	57	49	106	PT 1376	X	Low
		1051	43	35	78	PT 1475	X	Low
	AGL RF/MKW	1129	18	14	32	UC 8676	X	Low
		1130	1	4	5	UC 8676	X	Low
		1144	3	1	4	UC 8676	X	Low
		1159	36	38	74	UC 8675	X	Low
		1222	2	3	5	UC 8676	X	Low
		1254	5	7	12	UC 8776	X	Low
		1322	22	27	49	UC 8776	X	Flow
		1335	5	8	13	UC 8776	X	Flow
		1407	25	29	54	UC 8776	X	Flow
		1529	79	83	162	UC 8976	X	Flow
		1545	17	9	26	UC 9077	X	Flow

Snail's Eider

Data	Observers	Time	Males	Females	Total	Grid Ref	< 50m	> 50 < 200m	> 200m	Tide
04 May	AUNOP	1055	10	6	16	UC 9350	X			Ebb
		1100	21	7	28	UC 9379		X		Ebb
		1125	20	12	32	UC 9379	X			Ebb
		1150	4	2	6	UC 9481	X			Ebb
		1155	12	10	22	UC 9481		X		Ebb
		1215	2	2	4	UC 9581	X			Ebb
		1217	17	11	28	UC 9581		X		Ebb
		1243	8	10	18	UC 9681				Low
		1310	6	8	14	UC 9781				Low
		1330	57	38	95	UC 9982		X		Flow
		1350	6	7	13	UC 9983		X		Flow
	RF/CJS	1144	12	6	18	UC 9988	X			Ebb
		1150	18	18	36	UC 9988		X		Ebb
		1155	12	15	27	VC 0088			X	Ebb
		1158	27	8	35	UC 9988	X			Ebb
		1241	14	17	31	VC 0089			X	Low
		1253	108	71	179	VC 0089	X			Low
		1306	3	3	6	VC 0090	X			Flow
		1449	483	338	821	VC 0190	X			Flow
		1521	8	8	16	VC 0190	X			Flow
		1550	17	19	36	VC 0390			X	Flow
		1605	32	26	58	VC 0490		X		Flow
	JDB/AGL	1152	76	85	161	VC 0794	X			Ebb
		1258	32	32	64	VC 0594			X	Low
		1343	50	50	100	VC 0593			X	Flow
		1348	8	8	16	VC 0593		X		Flow
		1430	28	18	46	VC 0592		X		Flow
		1448	56	45	101	VC 0592			X	Flow
		1109	13	22	35	UC 9983		X		Ebb
	SHMKW	1114	47	38	85	UC 9983			X	Ebb
		1138	59	41	100	VC 0083		X		Ebb
		1200	37	52	89	VC 0083			X	Ebb

Steller's Elder

Date	Observers	Time	Males	Females	Total	Grid Ref	< 50m	> 50 < 200m	> 200m	Tide
04-May	SH/MKW	1226	3	1	4	VC 0083	X			Low
		1257	87	63	150	VC 0182			X	Flow
		1318	242	210	452	VC 0184		X		Flow
		1340	13	9	22	UC 9984	X			Flow
		1414	46	32	78	VC 0084			X	Flow
06-May	AL/MKW	1112	28	22	50	VC 0794		X		Ebb
		1123	38	59	97	VC 0793			X	Ebb
		1126	34	37	71	VC 0794	X			Ebb
		1144	68	49	117	VC 0993			X	Ebb
		1200	16	23	39	VC 0894		X		Ebb
		1251	35	28	63	VC 0995	X			Ebb
		1010	73	84	157	VC 2498	X			Ebb
		1030	37	43	80	VC 2398	X			Ebb
		1030	19	28	47	VC 2498	X			Ebb
		1050	27	29	56	VC 2397	X			Ebb
		1100	5	8	13	VC 2397		X		Ebb
		1009	31	37	68	VC 1896		X		Ebb
		1044	5	4	9	VC 1996		X		Ebb
		1052	18	14	32	VC 1896	X			Ebb
		1115	0	7	7	VC 1996	X			Ebb
08-May	SH/CJS	1135	8	11	19	VC 1996	X			Ebb
		1149	28	23	51	VC 1996	X			Ebb
		1158	25	25	50	VC 2097		X		Ebb
		1045	8	7	15	VC 1394		X		Full
		1050	37	46	83	VC 1394			X	Full
		1147	5	3	8	VC 1796		X		Ebb
		1200	45	40	85	VC 1796	X			Ebb
		1207	8	16	24	VC 1495	X			Ebb
		1230	24	24	48	VC 1495			X	Ebb
		1315	28	37	65	VC 1796	X			Ebb

Steller's Eider

Date	Observers	Time	Males	Females	Total	Grid Ref	< 50m	Distance > 50 < 200m	> 200m	Tide
08-May	SH/CJS	1320	17	15	32	VC 1696	X			Ebb
	JOB/NDP	1125	5	8	13	VC 2398	X			Ebb
		1140	22	29	51	VC 2397		X		Ebb
		1144	23	16	39	VC 2397	X			Ebb
		1150	4	3	7	VC 2397		X		Ebb
		1155	13	7	20	VC 2397	X			Ebb
		1215	7	6	13	VC 2397		X		Ebb
		1220	11	19	30	VC 2297		X		Ebb
		1230	83	65	148	VC 2297				Ebb
	RF/AGL	1200	9	8	17	VC 2297	X			Ebb
		1510	7	5	12	VD 2607	X			Ebb
		1515	9	4	13	VD 2607	X			Ebb
	AL/MKW	1030	340	228	568	VC 1094			X	Full
		1100	45	35	80	VC 1194			X	Full
		1246	69	53	122	VC 1294		X		Ebb
		1250	32	29	61	VC 1294		X		Ebb
		1255	29	32	61	VC 1294		X		Ebb
		1352	44	32	76	VC 1394	X			Ebb
09-May	CJS	1135	55	46	101	NT 6875	X			Full
		1158	15	6	21	NT 6975	X			Full
	JOB/MKW	1040	97	63	160	NT 6080			X	Full
		1115	39	24	63	NT 6876		X		Full
		1130	54	53	107	NT 7075	X			Full
		1420	19	15	34	NT 8769	X			Ebb
		1455	15	13	28	NT 9268	X			Ebb
		1505	1	0	1	NT 9967		X		Ebb
		1515	6	4	10	PT 0167	X			Ebb
		1530	38	36	74	PT 0265		X		Ebb
TOTALS			5155	4431	9586					

King Eider

Date	Observers	Time	Males	Females	Immatures	Total	Grid Ref	< 50m	Distance > 50 < 200m	> 200m	Tide
01-May	RF/AL	1105	1	1	0	2	NF 7183	X			Low
03-May	JDB/CJS	1435	7	8	2	17	UC 9277			X	Flow
	RF/MKW	1114	1	3	0	4	UC 8775			X	Flow
04-May	JDB/AGL	1505	5	4	5	14	VC 0592			X	Flow
		1654	4	10	1	15	VC 0591			X	Full
	SH/MKW	1338	2	16	3	21	VC 0284			X	Flow
		1430	0	7	0	7	VC 0186			X	Flow
06-May	RF/AGL	1041	6	25	4	35	VC 1996		X		Ebb
	SH/CJS	1200	2	29	11	42	VC 1394		X		Ebb
	AL/MKW	1130	5	45	6	56	VC 0893			X	Ebb
08-May	AL/MKW	1045	36	38	12	86	VC 1194			X	Full
		1250	18	20	8	46	VC 1294		X		Ebb
		1300	5	26	5	36	VC 1394			X	Ebb
TOTALS			92	232	57	381					

APPENDIX 2 TO
ANNEX B

APPENDIX 3 TO
ANNEX B
BIRD SPECIES RECORDED IN TRANSIT TO/FROM VARANGERFJORDEN

In addition to the species noted in the main report, the following species were recorded on the outward journey from, and return journey to, Gothenburg.

Great Northern Diver	<i>Gavia immer</i>
Great Crested Grebe	<i>Podiceps cristatus</i>
Red-necked Grebe	<i>Podiceps grisegena</i>
Slavonian Grebe	<i>Podiceps auritus</i>
Cormorant	<i>Phalacrocorax carbo</i>
Mute Swan	<i>Cygnus olor</i>
Whooper Swan	<i>Cygnus cygnus</i>
Bean Goose	<i>Anser fabalis</i>
Greylag Goose	<i>Anser anser</i>
Canada Goose	<i>Branta canadensis</i>
Barnacle Goose	<i>Branta leucopsis</i>
Shelduck	<i>Tadorna tadorna</i>
Wigeon	<i>Anas penelope</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</i>
Pintail	<i>Anas acuta</i>
Shoveler	<i>Anas clypeata</i>
Pochard	<i>Aythya ferina</i>
Tufted Duck	<i>Aythya fuligula</i>
Eider	<i>Somateria mollissima</i>
Goldeneye	<i>Bucephala clangula</i>
Smew	<i>Mergus albellus</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Goosander	<i>Mergus merganser</i>
Marsh Harrier	<i>Circus aeruginosus</i>
Hen Harrier	<i>Circus cyaneus</i>
Goshawk	<i>Accipiter gentilis</i>
Sparrowhawk	<i>Accipiter nisus</i>
Buzzard	<i>Buteo buteo</i>
Rough-legged Buzzard	<i>Buteo lagopus</i>
Osprey	<i>Pandion haliaetus</i>
Kestrel	<i>Falco tinnunculus</i>
Willow Grouse	<i>Lagopus lagopus</i>
Pheasant	<i>Phasianus colchicus</i>
Coot	<i>Fulica atra</i>
Crane	<i>Grus grus</i>
Oystercatcher	<i>Haematopus ostralegus</i>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Ruff	<i>Philomachus pugnax</i>
Snipe	<i>Gallinago gallinago</i>
Woodcock	<i>Scolopax rusticola</i>
Whimbrel	<i>Numenius phaeopus</i>
Curlew	<i>Numenius arquata</i>
Spotted Redshank	<i>Tringa erythropus</i>
Redshank	<i>Tringa totanus</i>
Greenshank	<i>Tringa nebularia</i>
Green Sandpiper	<i>Tringa ochropus</i>
Wood Sandpiper	<i>Tringa glareola</i>
Common Sandpiper	<i>Actitis hypoleucos</i>

Little Gull
 Black-headed Gull
 Common Gull
 Lesser Black-backed Gull
 Herring Gull
 Great Black-backed Gull
 Common Tern
 Rock Dove
 Woodpigeon
 Cuckoo
 Ural Owl
 Short-eared Owl
 Black Woodpecker
 Great Spotted Woodpecker
 Skylark
 Swallow
 House Martin
 Tree Pipit
 Grey Wagtail
 White Wagtail
 Wren
 Dunnock
 Robin
 Wheatear
 Ring Ouzel
 Blackbird
 Fieldfare
 Song Thrush
 Redwing
 Mistle Thrush
 Willow Warbler
 Goldcrest
 Spotted Flycatcher
 Pied Flycatcher
 Coal Tit
 Blue Tit
 Great Tit
 Nuthatch
 Red-backed Shrike
 Jay
 Magpie
 Jackdaw
 Rook
 Hooded Crow
 Raven
 Starling
 House Sparrow
 Chaffinch
 Brambling
 Greenfinch
 Siskin
 Crossbill
 Bullfinch
 Lapland Bunting
 Snow Bunting
 Yellowhammer

Larus minutus
Larus ridibundus
Larus canus
Larus fuscus
Larus argentatus
Larus marinus
Sterna hirundo
Columba livia
Columba palumbus
Cuculus canorus
Strix uralensis
Asio flammeus
Dryocopus martius
Dendrocopos major
Alauda arvensis
Hirundo rustica
Delichon urbica
Anthus trivialis
Motacilla cinerea
Motacilla alba alba
Troglodytes troglodytes
Prunella modularis
Erithacus rubecula
Oenanthe oenanthe
Turdus torquatus
Turdus merula
Turdus pilaris
Turdus philomelos
Turdus iliacus
Turdus viscivorus
Phylloscopus trochilus
Regulus regulus
Muscicapa striata
Ficedula hypoleuca
Parus ater
Parus caeruleus
Parus major
Sitta europaea
Lanius collurio
Garrulus glandarius
Pica pica
Corvus monedula
Corvus frugilegus
Corvus corone cornix
Corvus corax
Sturnus vulgaris
Passer domesticus
Fringilla coelebs
Fringilla montifringilla
Carduelis chloris
Carduelis spinus
Loxia curvirostra
Pyrrhula pyrrhula
Calcarius lapponicus
Plectrophenax nivalis
Emberiza citrinella

ANNEX C

ORGANISATION AND LOGISTICS

INITIAL PLANNING

Once the RAFOS Committee had decided that the Society would undertake the expedition, detailed planning and organisation began; the majority of which being carried out by Martin Wightman. Diplomatic clearances were obtained from the British Embassies in Sweden, Finland and Norway. RAF Personnel and Training Command Headquarters authority was sought to mount a Major Adventurous Training Expedition and, once obtained, a detailed Administration Order was raised and distributed. Close collaboration with The Wildfowl & Wetlands Trust at Slimbridge ensured that all aspects of the survey work were fully detailed. Accommodation at Vestre Jacobselv and Neiden was booked and transportation was arranged with RAF Coltishall and RAF Innsworth. RAF Coltishall supplied a Ford Transit for the expedition's use, and RAF Innsworth provided an Adventurous Training Grant to cover the cost of hiring a Toyota Hiace Traveller on arrival in Gothenburg. RAF Coltishall also provided ferry warrants for the vehicle and all passengers. Shell Agency Cards, to cover the cost of fuel for both vehicles, were obtained from RAF Coltishall and RAF Innsworth. Expedition members were selected from the applications received and expedition tasks and duties were delegated. An expedition bank account was opened and grants, obtained from RAFAT, the Trenchard Memorial Fund and RAFOS, were credited. Cash in Lieu of Rations (CILOR) was provided by RAF Innsworth for the entire period and was used for the purchase of provisions prior to departure and locally when the expedition was in theatre. The expedition was organised on a self-catering basis throughout. Sufficient foreign currencies for use in Sweden, Finland and Norway were obtained prior to departure. Liaison with Norwegian ornithological organisations took place regarding subsidiary fieldwork tasks. Expedition clothing, suitable for use within the Arctic Circle, and a full range of catering equipment, was supplied by the Army's Royal Logistics Corps Sub-Depot at Thatcham in Berkshire.

DEPLOYMENT

The Ford Transit, previously collected from RAF Coltishall, with 3 expedition members on board left RAF Innsworth early on Friday 26 Apr

96 and travelled to the home of Chf Tech Heather in Ramsey Mereside, Cambridgeshire, where the remaining team members had gathered. Catering provisions were taken on board and the party left for Harwich. The expedition departed from the Harwich International Port on the 1330 hours DFDS ferry to Gothenburg, Sweden. The ferry arrived in Gothenburg at 1500 hours on Sat 27 Apr 96 where the Toyota hire vehicle was positioned on the dock ready for collection. The two vehicles with 4 team members in each then began the 1,400 mile journey to Varangerfjorden. The route taken is shown at page 6 of this Report. The first of the overnight stays, camping at a suitable location on route, was near Avesta, Sweden and the second overnight camp was at Rovaniemi, Finland, just inside the Arctic Circle. The expedition arrived at Vestre Jacobselv on the northern shoreline of Varangerfjorden during the late afternoon of Mon 29 Apr 96.

The return journey began on Sun 12 May 96. Overnight camps were taken firstly, near Lulea, Sweden on Sun 12 May 96; in Skuleskogen National Park between Umea and Sundsvall, Sweden on Mon 13 May 96; just south of Orebro, Sweden on Tue 14 May 96 and in Gothenburg on Wed 15 May 96. The expedition departed Gothenburg on the 1100 hours DFDS ferry on Thu 16 May 96 and arrived back at Harwich at 1100 hours on Fri 17 May 96. A systematic list of bird species seen on the outward and return journeys is at Appendix 3 to Annex B of this Report.

ANNEX D

LOCAL CONTACTS

On arrival in Vestre Jacobselv the expedition was approached by John Asmar Olsen, a local birdwatcher and Recorder for Varangerfjorden. During the time spent in Vestre Jacobselv John provided excellent assistance and information which proved to be of immense value to the expedition. John would welcome contact with birdwatchers visiting the Varangerfjorden area. His address and telephone number is:

Postboks 247
9801
Vadso
Norway Tel: 78956840

OBSERVATIONS OF STELLER'S EIDER ON THE VARANGERFJORD, NORWAY DURING THE PERIOD 3 TO 17 JUNE, 1997

by R Frost

Introduction

In Apr-May 1996 I was part of a Royal Air Force Ornithological Society team which visited northern Norway to count wintering Steller's Eider, *Polysticta stelleri*, on the Varangerfjord. In 1997 my wife and I went to the same area for a holiday from 3-17 June. Requiring a project for this holiday I contacted Carl Mitchell of the Wildfowl and Wetland Trust to enquire of any worthwhile undertaking that I could carry out. He suggested that I record all the Steller's Eider that were encountered. Little is known about this, the smallest of the eider, especially the numbers summering in this area. This paper gives the results of my counts.

Weather

The weather during this period was changeable. Most days were overcast at some period. There was quite a lot of rain during the two weeks, a few snow showers early in the survey, but some sunny days were enjoyed. The morning of the 9 June was very warm, and people were walking around in shorts and sunbathing in their gardens. By 12.30 an easterly wind had risen and as the day progressed it became bitterly cold. The person who, when describing the weather of this region in the *Ornitholidays* ' brochure, wrote that the summer weather is more reliable if somewhat overcast rather too often was spot on.

Methods

During the period 4-12 June the shoreline, visible from the north coast road, between Varangerbotn and Vardø was surveyed at least once. On the 13 June the shoreline, visible from the south coast road, between Karlebotn and Bugoynes was searched. Then, on the 14 June, from the road adjacent to the fjord, we checked the Munkfjorden, Neidenfjorden and the harbour at Kirkenes. There were no Steller's Eider seen on the south side of the fjord, all sightings were from the north side. The search of the shoreline was generally made using 8x32 binoculars, but where necessary when distance or clarity of view required alternative optics, a 20x-45x zoom telescope was utilised. When thought to be helpful the terrain adjacent to the shore was negotiated to get closer views of the ducks, but usually all observations were carried out from the roadside.

Results

A list of the numbers of the Steller's Eider recorded is given at Table 1, along with the date, time of day, the site and its map reference and the age and sex of the duck when known. Figure 1 shows the sites of the observations. A total of 254 ducks were actually counted, but 18 recorded at Svartnes harbour on 8 June were most probably part of the group of 26 noted

two days later on the 10 June at the same site. The eight Steller's Eider counted at Bergeby Bru on the 11 June, although nearby, were considered additional birds to those 16 recorded at Nesseby church on the 5 June. Therefore a more accurate count would be 236. A total of five King Eider, *Somateria spectabilis*, were found at Vardo on 8 June, four immature males and an immature female.

Discussion

Most of the records of Steller's Eider were of birds within close proximity of the shoreline, whether feeding, or preening and resting. When they feed among seaweed they are very difficult to see and count accurately. No rafts of this species were recorded on the water beyond the 200m mark, as was noted in 1996. All the birds seen, except for the adult males recorded, were thought to be immature.

At Nesseby I counted 16 Steller's Eider on 5 June. A return visit to Nesseby on the 8 June was made, this time at mid-night. The tide was low and there were some large rafts of duck feeding out in the bay to the west of the church. These were mainly Common Eider, *Somateria mollissima*, but also many large groups of Goosander, *Mergus merganser*, were present. As we walked toward the west of the promontory we disturbed the Goosander, even though they seemed over 500m distance and then the Common Eider went as well. Almost immediately afterwards a large group of smaller duck, perhaps 100 birds, flew by into the west bay. Whether we disturbed these also I do not know because I do not know from where they came. I only had my binoculars with me and the birds were heading toward the sun. They were not close, and with the silhouette effect of flying toward the sun I could not positively identify them, but it was likely that they were Steller's Eider. They landed in amongst the exposed rocks and seaweed and disappeared from view. I thought there were two maybe three adult male birds among them. When I got back to the car and set up my telescope I still could not locate these duck.

On the 13 June I had a brief acquaintance with a Swedish couple who had some interesting information on the birds they had seen. They had spent a lot of time at the north of the Varanger peninsula and estimated their total of Steller's Eider seen as 200, many of these (and King Eider) had been in suitable areas adjacent to the roads up to Berlevag, and from Svartnes up to Hamningberg. They had recorded ca 50 Steller's Eider in the Nesseby area. From these reports it will be appreciated that the 200+ Steller's Eider that I counted was a mere portion of those present around the Varanger peninsula. The Swedes estimated 50 King Eider from their trips around the peninsula and they also noted the paucity of male Steller's Eider, in fact they recorded two less than myself.

Any future study of Steller's Eider in this area, either in early or late spring, should note the recounted experiences of the Swedish bird-watchers and consider adding visits to Berlevag and Hamningberg to the itinerary.

TABLE 1 Sightings of Stellers Eider at the Varangerfjord 4-12 June, 1997 (Figure 1.)

Date	Time	Site	Map Ref	Number, Age & Sex	Tide State	Remarks
04-Jun	15.20	Vestre Jakobselv	NT587778 1	1 ad. Male	rising	with a party of Common Eider, which harassed this bird if it got too close
05-Jun	c16.3 0	Nesseby church	NT571778 4	16 imm. all Females	high	photos taken. feeding among seaweed on the shoreline
06-Jun	11.26	Vadso	PT605777 7	23: 1 ad. Male; 21 1st. yr. Fem.; 1 1st. yr. Male	low	feeding among seaweed.
07-Jun	c13.3 0	Skallneset	UC398778 4	4: 1 1st. yr. Male; 3 1st. yr. Female	low	along shoreline among rocks, when Common Eider nearby took off so did these, but they returned to an area nearby.
07-Jun	c15.1 0	Kvalnes	VC406779 4	11: 4 1st. yr. Male; 7 1st. yr. Female	low	roosting with Common Eider on the sandy beach, later went into water and drifted away.
08-Jun	12.11	Svartnes harbour	VD426780 8	18 imm.: 6 1st. yr. Male; 12 1st. yr. Fem.	low	tide going down.
08-Jun	13.52	Vardo Town	VD429780 8	4 imm. 3 1st. yr. Male; 1 1st. yr. Female		feeding at edge of rocks, among seaweed, on the south side of bridge.
08-Jun	c14.4 5	Ytre Kiberg	VC425779 8	9: 1 ad. Male; 3 1st. yr. Male; 5 1st. yr. Female	low	feeding in surf at edge of beach.
10-Jun	17.10	Svartnes harbour	VD426780 7	26: 1 ad. Male; 9 1st. yr. Male; 17 1st. yr. Female	rising	on sandy shoreline resting and preening; later, photos taken when birds diving.
10-Jun	c18.3 0	East of Kramvik	VC423779 7	46 imm. 10 1st. yr. Male; 36 1st. yr. Fem.	rising	resting on rocks with Common Eider.
10-Jun	c19.0 0	West of Kramvik	VC417779 6	24 imm. 8 1st. yr. Male; 16 1st. yr. Fem.	rising	most washing/preening on rocky shoreline, some still diving.
10-Jun	19.19	Langbunes	VC415779 6	21 imm. light conditions did not allow sexing		preening/washing
11-	15.00	Bergeby Bru	NT573778	8 imm. light		birds flew in to site at

Jun		4	conditions did not allow sexing	waters edge, but were very flighty
12-Jun	12.05 Krampenes	UC393778 0	27: 2 ad. Male; 6 high 1st. yr. Male; 19 1st. yr. Female	sleeping on rocks at waters edge. 2 photos 300mm lens w. x2 conv.
12-Jun	c17.1 Andersby 5	NT598777 7	16: 1 def. 1st. yr. ebbing Male rest prob. 1st. yr. Fem. but too far from birds for accurate sexing	feeding among seaweed at water's edge

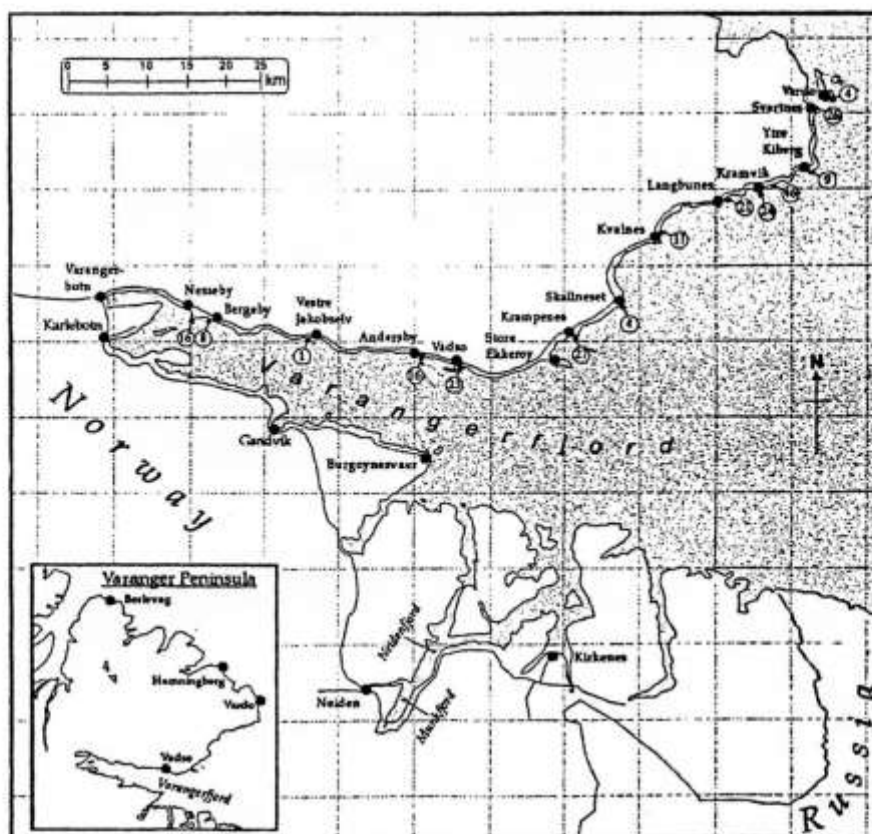


FIGURE 1. Sightings of Steller's Eider at Varangerfjord 4-12 June 1997

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