ISSUE 2

THE OSPREY

ARMED FORCES BIRD WATCHING & ORNITHOLOGICAL JOURNAL 2002

INCORPORATING THE ADJUTANT AND RAFOS JOURNAL
AND IN ASSOCIATION WITH THE RNBWS

THE OSPREY

ARMED FORCES BIRD WATCHING & ORNITHOLOGICAL JOURNAL

Submissions

Through individual society Editors, almost any format and photo material acceptable but not PowerPoint. Articles should include bird names (in bold) followed by scientific name (not in bold but italics). The standard reference for Europe, Middle East and North Africa is The Birds of the Western Palearctic (Cramp & Perrins). Photos should show scientific names, location, date, and the standardised phrase, 'copyright…'

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Contact the individual Society, normally through the Secretary, contact details on page 46. Annual membership AOS £8. RAFOS £7, send a cheque.

Web Sites

Go through Ministry of Defence: www.MOD.com - go to Army>Lifestyle>Clubs.
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From top, Male **Bluethroat** *Luscinia svecisa* (Varangerfjord). Copyright Frances Chetwynd. **Arctic Skua** *Stercorarius parasiticus* arriving at the nest (Varangerfjord), Male **Snow Bunting** *Plectrophenax nivalis* feeding chicks (Svalbard) and nesting **Purple Sandpiper** *Calidris maritima* (Svalbard).
All copyright Keith Cowieson.

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Chairmen's Foreword

Welcome to the second issue of *Osprey* that we are sure will prove as popular as the first. It reflects our continued collaboration and well represents the effort that our members have invested in the many field trips and expeditions last year as well as the variety of our interests and work. We congratulate and thank the joint editors for putting it all together.

Only two Chairmen's photographs appear as RNBWS has decided to withdraw from full participation in *Osprey* in order to concentrate on their own magazine, *Sea Swallow,* with its essentially sea-borne observation aims. This is disappointing, but AOS and RAFOS remain committed to the journal - the venture is only sustainable in a Joint arena as the effort and cost are obviously significant. We also hope increasingly to be able to offer this record of valuable science and observations to an ever-wider audience on a subscription basis. To recover some of the costs we will need to charge anyone who is not a member of AOS or RAFOS. Likewise, we are determined to maintain the links with RNBWS, and have undertaken to encourage their members to continue to submit articles.

Osprey 2 contains a wide selection of papers, ranging from work on seabirds in the high arctic and tropics to the most recent MOD Ringing Report, complemented by some excellent photography. Just as important are the AOS and RAFOS plans for future enterprises that should provide superb material for later issues. We hope this *Osprey* fires your enthusiasm and encourages your future participation in our endeavours.

Brigadier (Retd) RC Walker CBE
Gp Capt JC Knights FRGS MRAes RAF

Editorial

The first paper in our second issue, by Lt Col Roger Dickey, looks to the future of Ascension Island's seabirds. The importance of the work done by all the organizations involved in the ornithological data-gathering is high, but he rightly takes pride in the series of successful AOS expeditions that comprise a significant contribution to that effort. Now that the feral cat eradication programme is well under way, he brings our attention to the long-term aim of the island's Management Plan; the restoration of seabird colonies on the main island, something that could prove to be an example to be emulated elsewhere. However, the next paper by John Hughes on the Sooty Tern colonies on Ascension in 2000 emphasises that conservation aims are never simple and straightforward. Roger and John, AOS stalwarts, long have been interested in Ascension's seabirds, John maintaining his well after leaving the Army.

Major Tim Hallchurch contributes the yearly MOD Ringing Report, highlighting some recoveries, and goes on to co-author with Major Hilary Nash the report on 'Exercise Black Eagle', the AOS expedition to Nepal and India. The considerable contribution to this issue from those retired from the Army is welcomed and much appreciated! Ulrich Tigges, who lives in Germany, has a long association with AOS activities, and his succinct paper on Swift migration (the first in a new section entitled 'Short Notes') I hope will serve as an inspiration to many readers (whether or not you are at present members of AOS, RAFOS or RNBWS) to submit similar material on other species. Now is the time to dig out your old notes! I am grateful for the whole-hearted cooperation in the preparation of this issue given by all my AOS colleagues.

The RAFOS contribution comprises Sqn Ldr Nick Smith's paper on the search for Steller's and King Eiders on the Varangerfjord 2001 expedition and Wg Cdr Keith Cowieson's on his 1999 participation in the Arctic Research Group expedition to Svalbard. The Varangerfjord expedition was carried out on behalf of the Wildfowl and Wetlands Trust, to obtain data from locations that otherwise would not be covered. Nick returned from his long no-notice detachment in Oman after this issue had gone to press, and so his extraordinary effort in producing a splendid draft just before he went is remarkable. Keith, too, has been contactable only at intervals due to the exigencies of the Service, yet swiftly responded to all my queries. Both expeditions achieved major ornithological results in the Arctic.

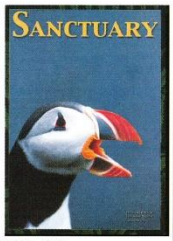
This issue demonstrates that both AOS and RAFOS are involved in invaluable ornithological work that produces data from remote locations. The work is often hard and demanding, but having had the privilege of working with the authors in the preparation of these papers, I know that all have enjoyed it immensely. Their sense of achievement is palpable. Long may it continue.

Lastly, and sadly, Bill Bourne has provided us with a fitting obituary for Ken Simmons, who took an active interest in the Societies' activities.

Mike Blair

SANCTUARY

The thirtieth edition of *Sanctuary,* the MOD's annual nature conservation magazine, can be obtained by contacting:



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Copies of the 31st edition of *Sanctuary,* due summer 2002, can be ordered at the same address.

Ken Simmons 1929-2002

Ken (K. E. L.) Simmons was born in London and educated as a teacher. He then went to teach on the island of Ascension during 1962-64 in order to study the seabirds before turning ornithologist. At Bristol University he obtained first an MSc on the breeding of the Brown Booby and then a PhD on the breeding of the Great Crested Grebe before moving to the Department of Psychology at Leicester University during 1970-80. While there he also became the main sub-editor of the first three volumes of the Birds of the Western Palearctic and continuing to make an important contribution on behaviour. In addition to other varied and valuable contributions to local, national and international ornithology, he also continued to visit Ascension at intervals, latterly with Robin Prytherch, financed by the Royal Society, to follow up the seabirds and to study the need for conservation, putting in more time on the island than any other ornithologist, with the intention of producing a BOU Checklist. Unfortunately a long-standing back problem caught up with him before it was completed. He was a small, pleasant, unobtrusive man of remarkable talent, industry and versatility, and is a sad loss.

W. R. P. B.

The Restoration of Seabird Colonies on Ascension Island

and the contribution of the Army Ornithological Society towards the establishment of the Ascension Island Management Plan

By Lt Col Roger Dickey

In February 2001, the UK Government Foreign and Commonwealth Office accepted an application for funding support towards 'A Project to Restore the Mainland of Ascension Island as suitable for re-colonisation by large seabird species'. The application was the culmination of over a decade's work by the International Division of the RSPB, on behalf of the Administrator, Ascension Island and has been supported substantially through data collection over 10 years by the Army Ornithological Society (AOS). The Ascension Restoration Project (ARP) aims to repair the damage done to the natural ecosystems of Ascension, a decline that intensified throughout the 20th century because of human activity. Of particular concern have been the effects of deliberate and accidental introduction of non-indigenous animals and plants. The size of the ARP Project can be gauged from a recent comprehensive description of the ecological history of Ascension Island (Ashmole 2000). The project activities are defined in output terms as:

Establishing a Project Management structure in place.
An education programme both for the island residents and visitors and for an international audience.
All domestic cats on the island to be neutered.
Feral cats to be eradicated from Ascension Island.
All necessary preparations made for the eradication of rats.
Put mechanisms in place for the prevention of the re-introduction of rats and cats.
Ongoing seabird monitoring programme to be introduced and implemented.
Maintain programmes of vigilance and contingencies in case of further deliberate or accidental re-introduction of rats or cats.

The project which has been granted additional funding of £500,000 over two years and will continue to be implemented by the RSPB, has as one of its main objectives, the removal of threats to breeding birds on the Wideawake Fairs in the south of the island where the **Sooty Tern** (Wideawake) *Sterna fuscata* has its breeding colonies. The long-term objective is to eliminate all external predators, thus protecting and making secure the whole island for former breeding birds such as **Ascension Frigate Bird** *Fregata aquila,* **Brown** *Sula leucogaster*, **Masked** *S. dactylatra,* and **Red-footed** *S. sula* **Boobies** to breed once again in safety on the main island. The RSPB further intends to fence in livestock to help reduce the spread of invasive plants such as Mexican thorn, or mesquite *Prosopis juliflora* (introduced 1980s) that provide food and cover for rats.

Although the immediate provisions for the project have been achieved (the infrastructure and conservation officer are in place),

Feral cats can reduce this breeding density of **Sooty Tern** *Sterna fuscata* to zero within days. Copyright Roger Dickey.

Original representative Ascension 'Wideawake Fair' landscape, guano deposits visible. Copyright Roger Dickey.

the mid - to long-term impact will not be apparent for many years; the full restoration of the sea-bird colonies will inevitably be dependent on the success of the follow-up rat eradication project (not funded at the time of writing). Nevertheless, the cat eradication programme will have a major beneficial impact and will be the most significant advance within the programme as a whole. The RSPB have already put in place monitoring and reporting systems and will continue to deliver the technical support required by the Administrator, whose budget will sustain the project after the first two years.

Following the initial service expedition conducted by the RAF Ornithological Society (RAFOS) (Blair 1989), the AOS has managed to conduct a survey of the status of sea-bird colonies on Ascension on an 18-month cycle (every alternate breeding cycle, almost without exception). In particular, the **Sooty Tern** status over the period has been well documented (Hughes 1999). On several occasions, members have been independently sponsored by the RSPB; another paper in this issue of *Osprey* bears testimony to the level of commitment by John Hughes to this project. This work builds on that carried out by many biologists and ornithologists who have visited Ascension since the 1950s.

So where does the current position leave RSPB and the AOS? Having worked for so long to see a properly constituted management plan for the island, our immediate thoughts were to withdraw after a job well done. After all, the case is proven, 'a project management structure' is now in place and monitoring will go on under the guidance of the RSPB. Yet the project has only a 2-year life and funding will account only for start-up costs, the assumption being that eco-tourism will sustain the ongoing work of ridding the island of Mexican thorn and rats. RSPB will undoubtedly help to fund civilian ornithological expeditions in the future and it is therefore from the RSPB that the AOS should receive its charter to continue its monitoring work or look for fresh projects elsewhere. Internal Service difficulties with the status of the expedition as an adventurous training or scientific expedition (or both) and poor bureaucratic judgement in certain areas largely have been overcome, but it is the opinion of the author that, with the continuing support of the RSPB and the Administrator, Ascension Island, the AOS can continue to make a regular and significant contribution to the next phase of this most important project.

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The Breeding Population of Sooty Tern *Sterna fuscata* on Ascension Island, South Atlantic, November 2000

By John Hughes

Abstract. For more than a decade the Army Ornithological Society has monitored the **Sooty Tern** *Sterna fuscata* breeding population on Ascension Island. This paper describes the latest survey and the findings of the first census of the **Sooty Tern** colony since a major cat eradication programme began. Three quarters of the island's feral cat population were culled prior to the re-survey in November 2000. The team adopted identical survey methods to those used in three previous censuses. The population size was calculated at 75 000 breeding pairs (bp). The **Sooty Tern** population is at the lowest level recorded and is less than half the population size of the previous low of 151 000bp in 1997. The expedition gathered significant evidence to suggest that the introduced **Common Myna** *Acridotheres tristis* had become a major predator of **Sooty Tern** eggs.

Introduction

Four detailed surveys to establish a population baseline for the **Sooty Tern** *Sterna fuscata* breeding colony on Ascension Island were completed in the 1990s (Ratcliffe, Hughes & Roberts 1999). During the 1990s the Army Ornithological Society (AOS) carried out nest site surveys in 1990, 1996 and 1998. The Royal Society for the Protection of Birds (RSPB) also completed an independent survey in 1997. The initial aim of the AOS survey was to determine a population baseline and then later to confirm any trends in the **Sooty Tern** breeding population. The impetus for a repeat of the survey work came from recorded heavy predation by feral cats *Felis catus* and an apparent reduction in the breeding population size recorded by the RSPB in 1997. A plan to eradicate all feral cats on Ascension was funded by the UK government. A major eradication programme commenced on Ascension in 2000. As a response to the cat eradication programme, the RSPB required regular annual or biennial surveys to monitor the **Sooty Tern** population to provide data as feedback for the Ascension environmental management plan, thus allowing it to be updated regularly. The main aim of the AOS expedition of November 2000 was to carry out the first of these population surveys.

Methods

As preparation for the main survey planned for November 2000, on 18/19 January 2000 the expedition leader carried out a reconnaissance visit, the aim being to determine as precisely as possible the date when the first eggs of the November 2000 season would hatch. By good fortune, the reconnaissance visit coincided with the first hatching (on the 19th) of the January 2000 breeding season. The breeding population on 18/19 January 2000 was estimated reliably at 90 000bp. On Ascension Island, unlike colonies elsewhere in the Atlantic and Pacific, the **Sooty Tern** does not breed annually but at interval of about 9.6 months. An interval period of 295 days was used to calculate the dates for the next expedition (Dickey 2000).

The AOS expedition in November 2000 applied the same survey techniques as used in previous years. The size of the breeding population was calculated from an estimate of the number of nest sites. The dense **Sooty Tern** colonies contain 5-6 nests/m^2, egg-laying being synchronized in waves, usually from the centre outwards as prime sites are claimed first. The census method measured the nesting area occupied by the **Sooty Tern** colony. Density was calculated by counting the eggs in randomly positioned plots, and scaling up for the whole nesting area. The first member of the AOS expedition arrived on the island on 7 November and immediately began to look for evidence of breeding **Sooty Terns**.

Locating sub-colonies: Once again the birds restricted themselves to their traditional sites in the SW corner of the Island. Each sub-colony located was allocated an identity number that gave the sequence of discovery and the year of survey. This season only two sub-colonies succeeded, one quite small (1/2000), close to the ocean at Mars Bay, and the other much larger and thriving (3/2000), south-east of Wideawake airfield in an area known as Waterside Fairs. The remaining nest site (2/2000), also at Waterside Fairs contained 3700 deserted eggs.

Timings of Survey: The greatest difficulty in carrying out and replicating the surveys of previous years is to ensure that the survey is carried out at the same time in the breeding cycle. The size of the colony can expand in a fortnight by as much as 29% (Ashmole 1963). The first AOS survey in 1990 was started two days after the first chick hatched and ended seven days later. Subsequent surveys aimed to complete the census in the same time frame. The laying date of the first egg of the season predated the expedition, but the first chick hatched in Waterside Fairs on 19 November, the main surveys being conducted the next day. As in previous years, the Mars Bay sub-colony was the slowest to develop. No chicks had hatched here before the expedition left on 22 November 2000.

Mapping the Colony: Only the large Waterside Fair sub-colony (3/2000) required precise mapping. Cairns of lava rock, 35 in number, each approximately 0.6m high and circled with a strip of orange plastic, were built round the perimeter of the fair. The cairns were built at intervals of approximately 60m and at each change of direction of the fair's perimeter. In many cases the birds nested right up to and sometimes a little beyond the boundary cairns. However, the sub-colony edges do not follow straight lines. The cairns simply marked the mean perimeter edge. A circular compass and steel tape traverse was run between the cairns and closed back on the starting point. Forward and reverse bearings were taken with Mils prismatic compasses. The traverse was then plotted on Chartwell 1mm squared graph paper at a scale of 1:1000. The closing error (11m) was measured from the plot and an accuracy of the survey (1:130) was calculated. The area of the fair was determined by counting the number of 1mm squares. As in previous years, a description sheet was produced for each sub-colony, the sheet including a written site report, the date and area of survey and quadrat clutch density data.

GPS Survey: For the first time the area of the breeding colony was re-surveyed using a Rockwell Global Positioning System (GPS) receiver radio Type HNV-2000. Determinations were made of Rectangular Universal Transverse Mercator (UTM) zone 28 co-ordinates and of the heights of the 35 cairns. The co-ordinates were used to plot the circumference of the colony on Chartwell 1mm squared graph paper at a scale of 1:1000. As before, the area was determined by counting the number of 1mm squares. There was surprisingly good agreement between the two independent surveys. The GPS survey method took two surveyors two hours to complete. The compass and tape traverse is more labour intensive and involved three men for two days. The GPS survey, although prone to gross reading error, is considerably quicker and is recommended for future area surveys. The results are in Table 1 opposite.

Abandoned Egg Site (2/2000): A small area of abandoned eggs (3700 nest sites) was found some 200m west of the main sub-colony. The only three occupied nests were later deserted. The site (grid reference 69595 17356) measured 0.15 hectares, the location and area being determined by GPS. Evidence on the ground suggests that the site was abandoned on or about 5 November. A study area was established in the abandoned colony. All the eggs within a 10x10m square in the sub-colony centre were counted and carefully examined. This count of 248 eggs in 100m^2 was the basis of the average 2.48 eggs/m^2 value used for the study area. Each of the 248 eggs was examined for signs of damage to determine possible causes for the sub-colony's abandonment. Adverse climatic conditions did not appear to be a factor. No evidence was found of predation by land crabs. Two possible causes were identified, parasitic infestation

Table I: Area of Waterside sub-colony (3/2000) on 20 November 2000

Area by compass & tape traverse	Area determined from GPS observations	Difference in the 2 areas	Agreement	Mean Area
3.63ha	3.58ha	0.05ha (500m²)	1/70	3.60ha

and predation by **Common Myna** *Acridotheres tristis.*

Roger Dickey had visited the site briefly the preceding season and confirmed that the **Sooty Tern** sub-colony had occupied exactly the same spot then. AOS data from the 1990s indicates that it is unusual for the terns to occupy exactly the same physical area in successive seasons. Furthermore, they do not in general reoccupy ground scattered with deserted eggs and dried corpses of birds killed the previous year. The assumption is made that parasitic infestation of the site, a by-product of its occupation by a breeding sub-colony, makes its occupation an unattractive option the following year, but there is little evidence as yet to support this hypothesis. However, over half (58%) the 248 eggs examined in the sub-colony were broken or holed, much of which damage can be attributed to Myna predation. This predation takes two forms, the first being opportunistic during a temporary absence of the incubating bird, and the second a purposeful coordinated action, typical of the social Myna, to induce a defensive reaction by the incubating bird, distracting it away from the egg. It would appear that the likely cause of the abandonment of this site was predation and parasite infestation.

Mars Bay Sooty Tern Survey (1/2000): On 7 November, approximately 2000bp were occupying a site close to the shoreline. By 22 November this sub-colony had been reduced to 50bp. In previous seasons this reduction would have been attributed to cat predation. However, by November 2000 only one or two cats were subjecting this sub-colony to predation. After clearing all dead birds on 7 November, corpses were collected regularly. From 7-22 November, cat predation accounted for 41 birds, an average of roughly 3 birds per night, much reduced from the rate of 11 per night (recorded in the same sub-colony) in June 1992 (Walmsley 1992). During this breeding season predation on eggs by **Mynas** was probably the main cause for the demise of the sub-colony. A **Myna** flock of between 9 and 21 birds regularly was seen feeding on **Sooty Tern** eggs. On 7 November, 16 eggs on the edge of the sub-colony were recorded and their locations marked. By 19 November, **Mynas** had destroyed them all. The majority of the terns vacated the first site, moved to a new location on a rocky outcrop some 200m inland, and on 19 November began to lay again. At this stage of the breeding cycle the birds are easily disturbed and so no attempt was made to survey the site. Instead, birds were individually counted. The sub-colony contained 3473bp on 19 November, but by the 22nd had increased to about 6000bp.

Neil McFall from the Meteorological Office visited the sub-colony just before Christmas 2000 and confirmed that the **Sooty Terns** were still nesting. However, the sub-colony had not expanded. He reported that the numbers in the Mars Bay colony were similar to those in the April 1999 season, but many fewer than in 1998. The AOS count for Mars Bay in June 1998 was 34 800bp, but AOS has no data for April 1999.

Egg density estimation: Egg densities were estimated in the large sub-colony 3/2000 using a quadrat/transect sampling system. Prominent features were identified on opposite sides of the colony and used as markers from which to establish the transect lines. By choosing pairs of features in a chance fashion, 17 transects were measured across the sub-colony, thus achieving near-random selection of the areas that were to form the quadrats. Along each transect line, at regular intervals (normally every 20 paces), counts of eggs were made in each quadrat, whose circular area was 10m². Each quadrat was marked out thus: at the 20-pace mark, one person held a vertical pole, to which was attached a cord 1.784m long. This radius of stretched string then described a circle whose area is 10m², and as the string passed over the eggs, the two observers counted them separately. The occasional small discrepancy between the recorded counts was resolved by taking the mean value. 155 quadrats were measured in sub-colony 3/2000 on 20/21 November 2000.

Sooty Tern *Sterna fuscata* returning to Wideawake Fairs. Copyright Roger Dickey.

Predation: Feral cats and **Mynas** are predators (both being active during the expedition) in the **Sooty Tern** colony on Ascension Island, the former taking adult birds, juveniles and chicks and the latter destroying large numbers of eggs. In 1992, the cat population was estimated at no more than 750 (USA BASH Report 1992), and in 1995 at approximately 800 (Bell 1995). 608 cats (about 75% of the feral population) were culled during 2000 (verbal report from the pest control officer). Despite this heavy cull, recently-dead cat kills of **Sooty Terns** were still in evidence around the colony. All recently-dead birds found during the expedition (6-23 November) were collected and disposed of, totalling 487 from the two sub-colonies. The average daily number of cat kills at Mars Bay was 2.5 birds and the average at Waterside Fairs 6.3 birds. Field observations suggest that one cat will kill and eat two or three adult **Sooty Terns** each night during the incubation phase, indicating that there are still 5 or 6 cats predating on **Sooty Terns**.

Extensive predation by **Common Myna** on **Sooty Tern** eggs was much in evidence. A log was kept of **Mynas** seen in the colony, small groups being seen every day. The **Sooty Tern** nesting areas on Ascension are devoid of vegetation and water, and hold no **Myna** nest sites. It is therefore highly likely that the **Mynas** are foraging for food. The team recorded frequent observations of **Mynas** pecking at eggs and eating the contents. To assess the number of eggs destroyed, study areas containing **Sooty Tern** nests were established at the edge of the colony and inside it to monitor egg survival rates. In some study areas all eggs were destroyed, while in others, usually those in the centre of the colony, none were predated. A more detailed report of the extent of **Myna** predation is being prepared for publication[1].

1 John Walmsley recorded predation by **Common Myna** on **Sooty Tern** eggs in 1990, and collected and photographed a number of eggs with telltale signs of breakage. On subsequent expeditions to Ascension, he always noted the presence of **Mynas** in the **Sooty Tern** colonies, often in pairs, sometimes even disturbing incubating birds. **Mynas** quickly ate any unattended egg, but were never seen to carry any eggs away from the colonies. He thinks the **Myna** population has increased since 1990 (John Walmsley *in litt*). Bill Bourne also noticed **Mynas** in the colonies in 1990, and suggests that together with the cats they must have been increasing because the progressive development of Ascension's ecosystem allows more to survive between **Sooty Tern** breeding seasons. **Mynas** have been introduced to other islands with **Sooty Tern** colonies without similar complaints (Dr WRP Bourne *pers comm* to RAFOS editor). The Ascension **Sooty Tern** colonies may be more fragmented than those elsewhere that also suffer **Myna** predation. Any significant impact on the Ascension colonies would be detectable only when constantly diminishing numbers of first breeders returned after 6-8 years since hatching, but if the **Sooty Tern** food supply remains adequate, it is possible that first breeding will begin at an earlier stage. Much is yet to be learnt about the Ascension **Mynas**, not least the effect on the population as cats are eliminated (Prof Chris Feare *pers comm* to RAFOS editor). (Chris Feare has experience of **Myna** control to protect endangered landbirds in the Seychelles.)

Results

During the 2000 breeding season the majority of the **Sooty Tern** population occupied one site. The site area of 3.63ha was calculated from two independent survey methods, GPS and circular compass and tape traverse. The average density was determined from 155 randomly positioned circular plots. Examination of the frequency distribution of the quadrat data suggests that it does not conform to the normal distribution due to the data being skewed towards zero counts. A bootstrapping procedure was used to produce a frequency distribution of values that conformed to a normal distribution. The mean, 2.5 and 97.5 percentiles were calculated from the bootstrapped data. The mean density calculated from the bootstrapped data is 1.90 with a lower 95% CI of 1.77 and an upper 95% CI of 2.03. The population status has been calculated using the 3.63ha area to conform to previous practice. The population size of sub-colony 3/2000 is estimated as 69 000bp with a lower 95% CI of 64 000bp and an upper 95% CI of 74 000bp. The population size of the Mars Bay sub-colony was 6000bp, giving a total breeding population for the November 2000 season of 75000bp. A revised summary of the population size for the decade is given below in **Table 2**.

Table 2 Ascension Island Sooty Tern Population 1990 - 2000

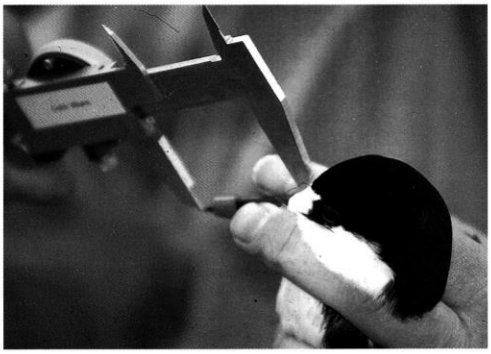
Year	Population Size (breeding pairs)	Lower 95% CI	Upper 95% CI
1990 (AOS Survey)	176 000	155 000	198 000
1996 (AOS Survey)	202 000	188 000	216 000
1997 (RSPB Survey)	151 000	143 000	158 000
1998 (AOS Survey)	207 000	197 000	219 000
Jan 2000 (R. Dickey)	90 000		
Nov 2000 (AOS Survey)	75 000	70 000	80 000

Discussion

For most of the 1990s the **Sooty Tern** breeding population on Ascension Island has been stable. The population in 1990 was 176 000bp, increasing in 1996 to 202 000bp. In 1997 the population fell to 151 000bp, but rose again in 1998 to reach 207 000bp. Since then, the population has consistently fallen. An eyewitness account by Neil McFall in April 1999 of the Mars Bay sub-colony stated that the population size was 'nowhere near as many as in 1998'. Much more significant change occurred in the population during the two seasons in 2000. In January 2000, Roger Dickey, who has considerable experience of the Ascension Island **Sooty Tern** colony, estimated the population at 90 000bp. By November 2000, the population fell further to 75 000bp, with a lower 95% CI of 70 000bp and an upper 95% CI of 80 000bp. The data collected by the AOS expedition suggests that the population decline over the last three breeding seasons cannot be attributed entirely to cat predation. The most significant finding of the November 2000 survey is that the lowest count of breeding **Sooty Terns** ever recorded on Ascension Island occurred in the first breeding season after the eradication of three quarters of the feral cat population, and so it would appear that the recent decline is due to a number of factors. In general, the availability of pelagic food is regarded as main limiting factor on population size, but currently data are lacking not only on the availability of food within the **Sooty Tern's** considerable foraging range, but also on how the supply fluctuates. As a consequence, the causality link between food supply and **Sooty Tern** population size remains unproven. In most populations of **Sooty Tern** across its breeding distribution, birds begin breeding at 7-10 years of age, but on Ascension this may alter to 7-10 breeding cycles. A persistent decline in the Ascension breeding population arising from egg predation by **Mynas** therefore would not show up until several years after the predation had begun.

Acknowledgements

This report could not have been produced without the enthusiasm, energy and sheer hard work that members of the AOS contributed and to them I owe a deep debt of gratitude. I am also grateful to Dr Norman Ratcliffe of the RSPB for his support with the statistical data.



Collecting biometric data from adult **Sooty Tern** *Sterna fuscata*. Copyright Roger Dickey.

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MOD Ringing Report 2000

By Major (Retd) T T Hallchurch MBE

This report is based on returns from ringers who have been active on MOD property during 2000 and have submitted their returns to MOD Defence Estates.

All ringers wishing to ring birds on MOD land not only must obtain a permit from Defence Estates Conservation, Blandford House, Farnborough Road, Aldershot, GU11 2HA, tel 01252 3613989, but also must obtain permission from the local estate manager or Commandant. The granting of a ringing permit is conditional upon the ringer or ringing group confirming the intention to submit to MOD Defence Estates an annual return giving details of birds ringed and recovered. This permit is additional to any returns forming part of the Nest Box Scheme. The MOD Ringing Report was started in 1978 and covers most birds ringed on MOD estates. However, despite reminders in the British Trust for Ornithology's *Ringer's Bulletin*, some ringing has taken place without the knowledge of MOD Defence Estates.

A total of **192 543** birds have been recorded as being ringed from 1978-1999, to which are added **6087** in 2000. This compares reasonably well with the figure of over 10 000 per year from the 1980s to the early 1990s, when there were a number of serving ringers active, and ringing took place on Army Bird Watching Society (now Army Ornithological Society) expeditions. Once again, two groups contributed the bulk of the ringing work in 2000. Major Tony Crease and the Swaledale Ringing Group working at Catterick and Cape Wrath ringed 2611 birds, including nestlings, and Paul Holness ringed **1741** birds, including nestlings. The one new species ringed during 2000 was a **Northern Gannet**, caught at Cape Wrath by Tony Crease, taking the total of birds ringed 1978-2000 to 168 species.

Recoveries

This is a selection of some of the recoveries reported to the BTO in 2000.

Great Black-Backed Gull

HT66523	1 Jul 2000	Cape Wrath Highland	Nestling
Dead on beach		8 Aug 2000	Castletown Highland 87km 1499 days

Arctic Tern

SV18364	26 Jun 1999	Loch Caladail Highland	Nestling
Found	22 Jan 2000	Half Assini, Ghana	

The circumstances of the recovery of this bird are uncertain. The child (from a primary school) who caught it stated that it was drowning but was rescued and is now 'captive'.

Common Guillemot

SV18364	01 Jul 1999	Faraidh Head, Highland	Nestling
Shot	11 Dec 1999	Vidøy Faeroes	406km 163 days
X32566	1 Jul 1999	Faraidh Head, Highland	Nestling
Dead	28 Dec 1999	Morbihan, France	1242km 180 days

Victim of an oil spill.

X32728	1 Jul 1999	Faraidh Head, Highland	Nestling
Long dead	9 Jul 2000	Warkworth Golf Course, Northumberland	4-9km 374 days

This bird was found dead inland on a golf course.

European Storm-Petrel

2431948	5 Aug 1995	Faraidh Head, Highland	Adult
Controlled	18 Jul 2000	Eileen Nan Ron, Highland	27km, 1809 days

At least six years old, was one of 28 recorded on this island in 2000.

2489252	17 Aug 1997	Faraidh Head, Highland	Adult
Controlled	3 Aug 2000	Ailsa Craig, Strathclyde	373km, 1041 days

Northern Lapwing

DB33410	31 May 1998	Feldom Ranges, N Yorks	Nestling
Freshly Dead	8 April 2000	Catterick Garrison	4km 678 days

This bird had probably returned to its natal area to breed and was taken by an animal.

Carrion Crow

FC73062	21 Sep 1996	Catterick Garrison	Adult
Shot	30 Aug 2000	Catterick Garrison	1683 days

This bird was shot by a gamekeeper after it had survived for a year at the same site.

Reed Warbler

H508875	14 Sep 1991	SPTA Norfolk	Juv
Controlled	13 Jul 1996	Brandon Suffolk	
Controlled	26 Jul 1998	Brandon Suffolk	
Controlled	17 May 1999	BTO Thetford Norfolk	

Greenfinch

VS31487	11 Feb 1999	SPTA Norfolk	Male
Controlled	23 Feb 2000	Thetford Norfolk	

Swallow

Ringed	13 Jun 2000	SPTA Norfolk	Pullus
Controlled	27 Aug 2000	Sandwich Bay Kent	139kms

Sand Martin

ESI 945264	25 Aug 1998	Zaragoza Spain	Juvenile
Controlled	29 Jul 1999	Scorton N Yorks	1424km 338 days

Chaffinch

K51509724	Mar 1996	Catterick Garrison	Adult
Freshly dead	27 Mar 2000	Hexham Northumberland	87km, 1464 days

The Ringing Report for Canterbury Old Park gives some information on recoveries of birds ringed at Old Park but no details:

Blackbird flew into window in the Netherlands
Blackbird released from strawberry nets Pas-de-Calais
Robin controlled that had been ringed 28 days previously in Belgium
Blackcap found in Morocco
Redpoll Controlled in Belgium
Nightingale controlled at Old Park 7 years after first being ringed.

Our thanks to all those ringers who sent their ringing details to MOD Defence Estates. The full list is given in the ringing totals.

Totals of birds ringed on MOD Land in 2000. Compiled by Tim Hallchurch

Totals of birds ringed on MOD Land in 2000. Compiled by Tim Hallchurch.	1978-99 Total	Barry Buddon Tay RG		Pirbright Richard Denyer & Daryl Spittle		STANTA Paul Holness		Bassingbourne David McKee		Canterbury Old Park Jan Pritchard et al		Mereworth Woods Dartford RG		Swaledale RG Catterick Garrison		Imber Salisbury Plain Imber Conservation Group		Swaledale RG DERA Applecross	Swaledale RG Cape Wrath		Salisbury Plain Robery Hayden		Bramley, Longmoor and Minley Robery Hayden	Penhale		Totals 2000
		F	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	F	Pul	FG	FG	Pul	FG	Pul	Pul	FG	Pul	
Little Grebe	14						1																			1
Fulmar	57																		28							28
Storm Petrel	2088																		38							38
Leach's Storm-petrel	6																									0
Northern Gannet	0																		1							1
Cormorant	446																									0
Shag	333																		1							1
Grey Heron	174														1											1
Mute Swan	13																									0
Canada Goose	287						1																			1
Common Shelduck	9																									0
Mandarin	1																									0
Common Teal	7																									0
Mallard	42					1																				1
Common Pochard	3																									0
Tufted Duck	2																									0
Hen Harrier	2																									0
Eurasian Sparrowhawk	279													4	5		76					4	5			94
Common Buzzard	87						40								8							2	1			51
Common Kestrel	1775								3					10	27						3	54	5			102
Merlin	59																									0
Hobby	15																									0
Red-legged Partridge	3																									0
Grey Partridge	3																									0
Water Rail	1																									0
Moorhen	194					2	1							2												5
Common Coot	99						2																			2
Oystercatcher	331						4													4						8
Avocet	212																									0
Stone-curlew	220						13																			13
Little Ringed Plover	10																									0
Great Ringed Plover	293																									0
European Golden Plover	1																									0
Grey Plover	99														61											61
Northern Lapwing	2410						44													1		27				72
Red Knot	938																									0
Sanderling	3																									0
Purple Sandpiper	23																									0
Dunlin	557																									0
Ruff	3																									
Jack Snipe	21																									0
Common Snipe	116																									0
Woodcock	27																									0
Bar-tailed Godwit	68																									0
Whimbrel	2														5											5
Eurasian Curlew	214						3																			3
Common Redshank	186														6											6
Green Sandpiper	3																									0
Common Sandpiper	38																									0
Turnstone	485																									0
Grey Phalarope	3																									0
Black-headed Gull	1515																									0
Common Gull	16																									0
Lesser Black-backed Gull	3777																									0
Herring Gull	1000																			33						33
Great Black-backed Gull	476																			152						152
Kittiwake	28																		39	33						72
Sandwich Tern	2388																									0
Roseate Tern	5																									0
Common Tern	1769																									0
Arctic Tern	277																									0
Little Tern	1636																									0

		F	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	F	Pul	FG	FG	Pul	FG	Pul	Pul	FG	Pul	
Common Guillemot	65																		55							55
Razorbill	20																		2							2
Puffin	1																		2							2
Stock Dove	447					1	30							4						1	5					41
Wood Pigeon	159																									0
Collared Dove	19																									0
Turtle Dove	46																									0
Common Cuckoo	58								1																	1
Barn Owl	747						12										140				5	52				209
Little Owl	120						2										27									29
Tawny Owl	440				2		8							2	15		2				2	29	4			64
Long-eared Owl	49		1											1												2
Short-eared Owl	20																									0
Eagle Owl	2																									0
European Nightjar	88			4	2																					6
Common Swift	267					2																				2
Common Kingfisher	56																									0
Wryneck	3																									0
Green Woodpecker	104									2				1												3
Great Spotted Woodpecke	207									1				14												15
Lesser Spotted Woodpeck	20			1																						1
Wood Lark	453				4		4																			8
Sky Lark	433						3																			3
Sand Martin	1652	1				302																				303
Barn Swallow	11990	3				1	679															17				700
House Martin	1765					110																				110
Tree Pipit	783																									0
Meadow Pipit	1736						4												5							9
Rock Pipit	1																	4	1							5
Water Pipit	34																									0
Yellow Wagtail	244						5																			5
Grey Wagtail	242						7								5							10				22
Pied Wagtail	1749					1	130															5				136
Dipper	60													1	13											14
Wren	5251	7		1		10	10	25		10				81												144
Hedge Accentor	5138	3						28		14				35												80
Robin	7497	3		2		5		28						150							1	5				194
Nightingale	291									4																4
Black Redstart	4						11							3	28											42
Common Redstart	1394			1	12																					13
Whinchat	272																									0
Common Stonechat	798			6			10																			16
Wheatear	419			1			14											4	15							34
Ring Ouzel	23																									0
Blackbird	9255	5				16	12	19		18				67							1	6				144
Fieldfare	835																									0
Song Thrush	3461	4					12	10		4				22												52
Redwing	1062	2												2												4
Mistle Thrush	288						7																			7
Cetti's Warbler	2																									0
Grasshopper Warbler	111																									0
Sedge Warbler	2387	1				3		8																		12
Reed Warbler	1654					4		8						1												13
Icterine Warbler	1													1												1
Dartford Warbler	179			11	14																					25
Barred Warbler	9																									0
Lesser Whitethroat	1632							2		7																9
Common Whitethroat	5570					1		13		46																60
Garden Warbler	1133							1		6				11												18
Blackcap	4049	1						22		27				58												108
Pallas's Leaf Warbler	1																									0
Yellow-browed Warbler	2																									0
Dusky Warbler	1																									0
Wood Warbler	77																									0
Chiffchaff	2432					1		1		5				41												48
Willow Warbler	12216	5				12	12	17		13				120												179
Goldcrest	4706	12		9		2		10		9				112												154
Firecrest	133																									0
Spotted Flycatcher	358														4											4
Red-breasted Flycatcher	4																									0
Pied Flycatcher	459									1				4	64											69
Bearded Tit	3																									0
Long-tailed Tit	3513	2				14		12		13				97												138
Marsh Tit	275													9												9
Willow Tit	216													3												3
Coal Tit	2286	23		1	8							4		94								8				138
Blue Tit	12885			1				5		25	21			229							10	24	66	1	11	393
Great Tit	6603							5		17	53			93							6	21	12		20	227
Wood Nuthatch	365					1																				1
Eurasian Treecreeper	807					5								20												25
Red-backed Shrike	3																									0
Eurasian Jay	206			1						2				28												31
Magpie	100													4												4
Eurasian Jackdaw	203						11							4	31							8				54
Rook	415						1															76				77
Carrion Crow	73																					4				4

		F	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	FG	Pul	F	Pul	FG	FG	Pul	FG	Pul	Pul	FG	Pul	
Common Starling	1263						4			1																5
House Sparrow	91					1				3																4
Tree Sparrow	1086						57							315												372
Chaffinch	8121	11		1		3	18	11		1											1					46
Brambling	594					1																				1
Greenfinch	10481	1				6		2						278												287
Goldfinch	1857					2		2						14												18
Siskin	1426													85												85
Linnet	2818						49			7																56
Twite	6																		3							3
Common Redpoll	1968													28												28
Common Crossbill	224																									0
Common Rosefinch	5																									0
Bullfinch	3227	7				2		12		7				89												117
Hawfinch	20																									0
Snow Bunting	14																									0
Yellowhammer	1528	2					10	11		2																25
Ortolan Bunting	1																									0
Reed Bunting	1436					1								3												4
Corn Bunting	4																									0
Total 1978 - 99	**186456**																									
Totals for 2000		93	1	40	42	510	1231	252	4	245	74	4	0	2140	273	0	245	8	190	224	34	352	93	1	31	6087
Total ringed in 2000	6503																									
Grand Total 1978-99	192959																									

One new species was added to the list in 2000 - Northern Gannet

Total 168 species ringed on MOD Lands since 1978

On Top of the World at 79°N

RAFOS Participation in the Arctic Research Group Expedition to Svalbard
(Exercise Svalbard Arctic 99) 01 to 19 July 1999

By Keith Cowieson

Introduction

As a young boy with a keen interest in birds, and growing up in Scotland. I had avidly read the books of Scotland's pioneering photographic naturalist, Seton Gordon. One book (Gordon 1922) in particular had fascinated me, his account of the 1921 Oxford University Expedition led by the distinguished ornithologist, the Reverend Francis Jourdain, to Spitzbergen, the largest island in the Svalbard (Norway) archipelago. Julian Huxley was another member, Seton Gordon being designated as official photographer. I longed to follow in Gordon's footsteps and also visit Spitzbergen and photograph the birds there. It was with delight therefore, when I discovered that Mr Andrew Maxted (then a Harper Adams University College (HAUC) undergraduate, but now studying for a PhD, and a civilian (reservist) RAFOS member, had advised the RAFOS Committee that 3 or 4 RAFOS members would be welcome to participate in the 1999 civilian Arctic Research Group's (ARG) expedition to Ny-Ålesund in Spitzbergen, Svalbard. (The Midlands-based. award-winning ARG is an independent UK scientific group committed to undertaking research in the High Arctic). Sadly, various diverse factors forced all other RAFOS applicants bar Andrew and myself to withdraw during the planning phase. Nevertheless, the expedition went ahead, the exercise nickname SVALBARD ARCTIC signifying official RAF recognition.

Aims

My aims on the Expedition were to:

1. Carry out a baseline ornithological survey for RAFOS of the immediate Ny-Ålesund area and of the NW end of the Brøgger peninsula.
2. Assist Mr Andrew Maxted of HAUC in 2 other environmentally related scientific projects (See **Appendix 1**).

Description of the Survey Area

The Svalbard archipelago lies well above the Arctic Circle, Ny-Ålesund being situated on the mountainous west coast of Spitzbergen (the largest island in the group) at 79°N 12°E, only some 1220km (660nm) from the North Pole. Two thirds of the archipelago is permanently ice-covered, and the unpredictable climate and glaciated terrain are harsh and unforgiving. Ny-Ålesund, home to the Ny-Ålesund International Arctic Research and Monitoring Facility, is one of the world's northernmost continually inhabited settlements, situated on the southern shore of Kongsfjorden on NW Spitzbergen. The steep ice-capped mountains along the Ny-Ålesund coastal fringe are interspersed with glaciers, some calving directly into the sea. The coastline itself is *strandflat*, comprising tundra, alluvial plain and braided streams that are snow free mid-June to September, making the going so heavy that transit is achievable only on foot.

The area comprises typical High-Arctic ecosystems possessing marine and terrestrial components. Inland, and on the exposed tip of the Brøgger peninsula, one finds habitat varying from 'Arctic desert' to lush tundra and grassland. This plant life, which flourishes in the 24-hour summer sunlight, provides the nutritional basis for plant eaters such as Svalbard reindeer *Rangifer tarandus platyrhynchus*. geese and Svalbard Ptarmigan *Lagopus mutus hyperboreus* (Mehlum 1990). This variety of Arctic fjord environments makes the area ideal for research and home to a good cross-section of the regularly occurring Svalbard bird species. The surrounding sea is also highly productive. with phytoplankton (algal plankton) thriving from spring onwards in the ice-free waters. sunlit for 24 hours. The phytoplankton sustains small crustaceans such as Copepods (*Calanus finmarchicus* and *C. glacialis*), which are in turn consumed by larger crustaceans (such as pelagic amphipods and krill *Euphausiida spp*), fish (such as capelin *Lota lota* and polar cod *Boreogadus saida*) and seabirds (such as **Little Auk** *Alle a. alle*). Other seabirds consume the larger crustaceans and the various fish species (Mehlum 1990).

Although Ny-Ålesund was the main focus for the ARG's and therefore my own and Andrew Maxted's fieldwork, I also determined to carry out some survey work around the capital, Longyearbyen, our point of arrival and departure in Svalbard. Longyearbyen is situated towards the centre-west of Spitzbergen on the southern shore of Adventfjorden, a subsidiary of Isfjorden, the largest fjord in Spitzbergen, at 78°15'N 15°26'E (about 1305km [705nm] from the North Pole), and c111km (60nm) southeast of Ny-Ålesund. The habitat around Longyearbyen is broadly similar to that around Ny-Ålesund. The results of my observations there are included in the systematic list.

Method of Survey

The geography of both the Ny-Ålesund/Brøgger peninsula and the Longyearbyen study areas and the fact that mostly I was working alone dictated the methodology I adopted for the base-line ornithological survey. The method I chose was effectively a combination of continuous Line Transects and Transect Counts as I walked to and from the various study areas, and of Point Counts (all Bibby *et al* 1992) at bird colonies whilst assisting Andrew Maxted. (Time constraints meant that repeated counts at the bird colonies were not possible. However, because I spent several hours at the main study area, Simlestupet cliffs (GR VH260615, Sheet A7), and because the numbers and density of species there were relatively low, I have high confidence that the numbers recorded were representative). In keeping with my Ornithological Survey aim, I attempted to count and record all birds encountered. However, on occasions I was forced simply to note that some species occurred in their hundreds, (**Little Auk**) while others were common (**Snow Bunting** *Plectrophenax n. nivalis*) to very common (**Arctic Tern** *Sterna paradisaea*). Meanwhile my sea-watch, conducted from the deck of a cruise-ship, was rudimentary, as I was not equipped with a high-powered telescope and the prevailing arctic conditions (literally!) soon drove me below to escape the wind-chill induced, sub-zero temperatures. Similarly, observations of seabirds in Kongsfjorden, made from the *Norsk Polar Instituut* (NPI) Rigid Hulled Inflatable Boat (RHIB) that inserted us onto the Brøgger peninsula (at 27 knots!) were also sketchy, for obvious reasons.

Weather Conditions and other Natural Hazards

The mean July temperature at Ny-Ålesund is +5° Celsius, but during the frequent gale-force winds sub-zero temperatures are often recorded in high summer. The weather we experienced was much as forecast, temperatures varying from a low +2°C to a memorable +18°C on a cloudless, still day. However, wind-chill often reduced the temperature effect to sub-zero. Moreover, microclimates in the extreme NW of the Brøgger peninsula, close to Kongsfjorden (near Ny-Ålesund) and in the vicinity of glaciers ensured that changeable weather conditions were standard fare for the expedition, making it vital to be prepared for all eventualities. We therefore always carried hill-packs heavy with necessary but bulky adverse-weather clothing and survival gear irrespective of how far from camp we were working.

In Svalbard, a permanent additional hazard to camping away from settlements comes from the resident polar bear *Ursus maritimus*

population. The ARG had to hire and import weapons to Norway to cover the mandatory stipulation by the Svalbard authorities that all parties in the field must be suitably armed. Mini-flares (or flare-guns) are the preferred method to scare away bears, shooting being the last resort. It is also essential to set trip-flares round all inhabited tents both to daunt marauding bears and to alert the occupants. Although we encountered no polar bears, wandering Svalbard reindeer triggered the trip-flares regularly at our campsite at Ny-Ålesund, leading to adrenaline-filled moments as we scrabbled hastily for mini-flares and weapons. To put matters in context, one polar bear had been shot in Longyearbyen only the month before when all else, such as buzzing by helicopter, had failed to deter it, and another had been raiding the Ny-Ålesund open-air seal carcass larder (used for feeding huskies) throughout the winter months.

Annotated Systematic List of Bird Species Recorded

Explanation of the Systematic Accounts

Svalbard, although lying entirely within the limits of the Western Palearctic as defined in *The Birds of the Western Palearctic Concise Edition* (Snow and Perrins 1998, and referred to hence as *BWPC*), has an Holarctic and circumpolar avifauna, many of whose breeding populations are centred in the Nearctic. The English names of species listed below therefore reflect the usage on both sides of the Atlantic, and follow both *BWPC* and Clements (2000), taxonomy and scientific names complying with Clements (2000), who in turn follows del Hoyo *et al* (1992-1999). Norwegian names of species, in italics in brackets after the scientific name, come from Gjershaug *et al* (1994).

The status of each species in Svalbard is given after its scientific name, and is taken from CAFF (2001), Heath et al (2000) or Hagemeijer & Blair (1997). The status includes the species' SPEC (Species of European Conservation Concern) categories, its European Threat assessment (eg 'Vulnerable'), the species' population numbers in Svalbard (in breeding pairs [bp]), and population trends (Tucker & Heath 1994, as amended in Heath et al 2000, but CAFF [2001] estimates are also included, where available). Note that the use of the term 'Stable' in referring to Svalbard populations describes the medium-term, because a late spring can affect year-to-year breeding numbers adversely. Briefly, SPEC categories are:

1. Species that are Globally Threatened.
2. European Species that have Unfavourable Conservation Status.
3. Global Species that have Unfavourable Conservation Status in Europe.
4. Species with Favourable Conservation Status in Europe, but whose populations are mainly in Europe.

NB Non-SPEC generally means that a species has favourable conservation status in Europe and it may also have the majority of its population outside Europe.

The suffix 'W' to any SPEC category or European Threat Status refers to the wintering population. '(Secure)' indicates that its status awaits confirmation, although the bulk of the evidence supports the designation. Terms such as 'Declining', 'Increasing' and 'Stable' refer to population numbers. The term 'Present' applied to population numbers indicates that the population has not been fully or regularly surveyed. Range trends are mentioned occasionally as such. The term 'at least' refers to minimum population estimates in breeding pairs (bp), 'up to' refers to maximum estimates, *c* (*circa* or about) to mean values of estimates, 'asl' is the abbreviation for 'above sea level', and 'aon' means 'apparently occupied nests'.

Annotated List

Red-throated Diver (Loon) *Gavia stellata (Smålom).* SPEC 3. Vulnerable. 100-1000bp. Stable. A total of 11 was seen around the Ny-Ålesund and Brøgger peninsula study area, 4-15 Jul, including 4 pairs holding territory but apparently not yet breeding and 1bp (incubating) on the small lake within Ny-Ålesund settlement bounds (GR VH348630 Sheet A7). Others regularly flew overhead, 'quacking', to and from offshore fishing grounds. Seven seen during sea-watch on the passage from Ny-Ålesund to Longyearbyen, (route via Kongsfjorden - west of Prinz Karl Forland - Isfjorden, with a brief stop-over at Barentsburg - Adventfjorden) 15 Jul, one offshore Longyearbyen airport (GR WG115866, Sheet C9) 17 Jul.

(Northern) Fulmar *Fulmarus g. glacialis/auduboni (Havhest)* Non-SPEC. Secure. 100 000-500 000bp. Stable. Seventy-eight aon (100 birds present) on Simlestupet cliffs (GR VH260615, Sheet A7) and 16 aon on Steinflåstupet cliffs (GR VH215675, Sheet A7) in the Brøgger peninsula study area. Very common in Kongsfjorden during RHIB insertion to Brøgger peninsula study area, 7 Jul and during sea-watch on the passage from Ny-Ålesund to Longyearbyen, 15 Jul. Birds seen predominantly dark (blue) phase with some intermediates.

Pink-footed Goose *Anser brachyrhynchus (Kortnebbgås).* Non-SPEC. Secure. c30 000bp (37 000ind [CAFF 2001]). Increasing. Four flew north (2 separate pairs) by Brøgger base camp (GR VH244666 Sheet A7) on 9 Jul.

Barnacle Goose *Branta leucopsis (Hvitkinngås).* SPEC 4B, 2W. Localized W. Svalbard holds c2500bp, numbers increasing slightly (23 500ind [CAFF 2001]). Most, if not all, winter Caerlaverock. Common in and around Ny-Ålesund settlement (c70bp, some still incubating, but most with small goslings) and its immediate offshore islands, Prinz Heinrichøya (GR VH353630 Sheet A7) 27bp, Mietheholmen (GR VH360628 Sheet A7) 24bp, also 300-400bp reported resident in Kongsfjorden during summer (Maarten Loonen pers comm)[1]. Six adults in lagoon by Longyearbyen airport, 4 Jul, and one unusual cliff-nesting pair on Simlestupet in the Brøgger peninsula study area.

(Common) Eider *Somateria m. mollissima (Ærfugl).* Non-SPEC. Secure. 10 000-20 000bp. Stable. Common in and around Ny-Ålesund settlement with rafts or crèches of 20 females + 12 young and 9 females + 40 young on 13 Jul, although many still incubating in and around buildings, raised walkways. Offshore islands, such as Prinz Heinrichøya and Mietheholmen were in the past equipped with upturned fish-boxes acting as nest-boxes or shelters (still in situ: Maarten Loonen pers comm) so that eiderdown could be harvested. Three females at Barentsburg during stop on the passage from Ny-Ålesund to Longyearbyen, 15 Jul and several in lagoon by Longyearbyen airport (GR WG 119868, Sheet C9) 4 Jul and in Longyearbyen harbour (GR WG 142838, Sheet C9) 16 & 17 Jul.

King Eider *Somateria spectabilis (Praktærfugl).* Non-SPEC. Secure. 2500-5000bp (1000ind [CAFF 2001]). Stable. Two females, one on lake by Huklaguna hunters' hut on Brøgger peninsula base camp (GR VH250688 Sheet A7), one on small lake by Brøgger base camp (GR VH244666 Sheet A7) on 7 Jul. Further female with group of 11 female **Common Eider** *S. mollissima* in Thiisbukta, Ny-Ålesund (GR VH343633 Sheet A7) on 11 Jul.

Long-tailed Duck (Oldsquaw) *Clangula hyemalis (Havelle).* Non-SPEC. Secure. 500-1000bp. Stable. 30 counted around the Ny-Ålesund and Brøgger peninsula study area, several courting pairs on lakes and 2 incubating females close to or under inhabited buildings in Ny-Ålesund settlement[2]. Pair in lagoon by Longyearbyen airport, 4 Jul.

(Rock) (Svalbard) Ptarmigan *Lagopus mutus hyperboreus (Svalbardrype).* Non-SPEC. Secure. 1000-10 000bp. Stable. The only sedentary landbird in Svalbard by virtue of the ability of this subspecies to achieve 30% of its body weight in fat in autumn, allowing it survive winter in its snow burrow (Rätti 2001). Pair by slagheaps close to Ny-Ålesund campsite (GR VH345620, Sheet A7) 4 & 5 Jul and single female by Longyearbyen airport, 17 Jul.

(Common) Ringed Plover *Charadrius h. hiaticula (Sandlo).* Non-SPEC. Secure. 10-100bp. Stable. Two pairs by Longyearbyen airport beach 4 & 16-18 Jul, one of whose agitated behaviour strongly

1 From University of Groningen, Netherlands. Loonen is the coordinator of a long-term WWT **Barnacle Goose** study at Ny-Ålesund and Caelaverock

2 Loonen has postulaued that **Barnacle Goose**, **Common Eider** and **Long-tailed Duck** perceive settlements as 'islands'. semi-safe from main predators, arctic fox (*Alopex lagopus*), gulls and skuas, due to human activity or presence.

suggestive of nest or young nearby (18 Jul). Single adult by Ny-Ålesund settlement small lake, 10 Jul.

(Ruddy) Turnstone *Arenaria i. interpres (Steinvender).* Non-SPEC. Secure. Present. Stable. Single agitated adult male giving alarm near Brandallaguna (GR VH326650, Sheet A7), Brøgger peninsula on 13 Jul.

Dunlin *Calidris a. alpina (Myrsnipe).* SPEC 3W. Vulnerable W. 1-100bp. Stable. Single adult by Ny-Ålesund settlement small lake, 6 Jul. another by lagoon near Longyearbyen airport, 16 Jul.

Purple Sandpiper *Calidris maritima (Fjæreplytt).* SPEC 4. (Secure). 1000-10-000bp. Stable. Commonest wader encountered. Many bp and ind at all locations. Highest density estimated at 1bp/500m² on 7km stretch of *strandflat* between Simlestupet cliffs and Brogger peninsula campsite. This local concentration is approximately double the suggested overall Svalbard density (Mehlum 1990). Several nests and broods found, breeding cycle clearly heavily dependent on availability of snow-free areas. Some pairs still courting (songflighting and displaying) some brooding, others with downy young *eg* Adult with 4 hatchlings on 16 Jul on small grass patch Longyearbyen town centre opposite Svalbard university building; adult with 2 large almost-flying young by NPI hostel at Longyearbyen airport on 17 Jul.

Grey (Red) Phalarope *Phalaropus fulicaria (Polarsvømmesnipe).* Non-SPEC. (Secure). 100-1000bp. Stable. Pair at Longyearbyen airport lagoon 4 Jul, adult male & 4 chicks there 16/17 Jul female present, but not with family party. Adult at Ny-Ålesund settlement small lake, 10 Jul.

Arctic (Parasitic) Skua (Jaeger) *Stercorarius parasiticus (Tyvjo).* Non-SPEC. (Secure). 100-1000bp. Stable. Locally common throughout Ny-Ålesund and Brøgger peninsula study areas, with density of *c*1bp/km². Six nests or broods found, all with full complement of 2 eggs or young suggesting food readily available. Several seen off Longyearbyen harbour & airport, 14-16 Jul.

Great Skua *Catharacta skua Storjo (Nr).* SPEC 4. Secure. 50-150bp. Increasing strongly. Single adult on Prinz Heinrichøya island by Ny-Ålesund on 5 Jul. Single adult at head of Kongsfjorden by Kronebreen glacier (GR VH420592, Sheet A7), 14 Jul.

Glaucous Gull *Larus h. hyperboreus (Polarmåke).* Non-SPEC. Secure. At least 2500bp in Svalbard. Stable. Locally common, some 3+ adults seen daily around Ny-Ålesund settlement, feeding opportunistically at seal carcass larder, also around visiting cruise ship. On one occasion plundered **Barnacle Goose** *Branta leucopsis* eggs. One dead 2nd year bird inside derelict hunters' hut at Huklaguna on Brøgger peninsula 7 Jul. 2 adults seen by Simlestupet cliffs in the Brøgger peninsula study area 8 Jul. 16 adults bathing at Brandallaguna, Brøgger peninsula, 13 Jul. 3bp & 3 young at Barentsburg during stop on passage from Ny-Ålesund to Longyearbyen, 15 Jul. (Author, when photographing young, mobbed ferociously by adults, blood being drawn from a strike on head!) Common near Longyearbyen harbour & airport, 14-16 Jul.

Ivory Gull *Pagophila eburnea (Ismåke).* SPEC 3. (Endangered). c230bp. Not known. Single (ringed) adult feeding at Ny-Ålesund settlement open-air seal-carcass larder on 10 & 11 Jul.

(Black-legged) Kittiwake *Rissa t. tridactyla (Krykkje)* Non-SPEC. Secure. c270 000bp. Increasing. Also increasing its Svalbard range. Common in all study areas. Thirty-one aon (47 birds present) on Simlestupet cliffs (Brøgger peninsula study area) 8 Jul, and c700bp in colony on bluffs below Austre Lovénbreen glacier in upper-Kongsfjorden. E of Ny-Ålesund (GR VH613394, Sheet A7) on 14 Jul. Common during sea-watch on passage Ny-Ålesund to Longyearbyen. Several bp nesting on Barentsburg window-ledges 15 Jul. c500 non-breeders at Longyearbyen airport lagoon 16 Jul.

Arctic Tern *Sterna paradisaea (Rødnebbterne).* Non-SPEC. Secure. 1000-10 000bp. Stable. Very common throughout all study areas, ranging from small colonies (max *c*40bp in Ny-Ålesund settlement) in and around habitations in Ny-Ålesund settlement and Longyearbyen to individual pairs nesting throughout all study areas on the tundra and in polar stone deserts.

Little Auk (Dovekie) *Alle a. alle (Alkekonge).* Non-SPEC. (Secure). At least 100 000bp. Stable. Common, with both large and small colonies on cliffs and screes in all study areas. Evidence of occupied sites apparent at long range by loud shrill cackling call of adults. 77 aon (127 adults present) on Simlestupet cliffs (Brøgger peninsula study area) 8 Jul. Hundreds of aon at the cliff study area W of Longyearbyen airport 17 Jul. Most accessible nests inspected had young, but 2 found with 1 egg each. Further significant colonies, not closely inspected, at Steinflåstupet cliffs (Brøgger peninsula study area) and by Zeppelinfjellet, hundreds-strong, (GR VH330616, Sheet A7) overlooking Ny-Ålesund settlement. Common in Kongsfjorden during RHIB insertion to Brøgger peninsula study area, 7 Jul and during sea-watch on passage Ny-Ålesund to Longyearbyen, 15 Jul, usually seen fishing in groups, 12-20 strong.

Brünnich's Guillemot (Thick-billed Murre) *Uria l. lomvia (Polarlomvi).* Non-SPEC. Secure. c780 000bp. Increasing. 80 bp in colony on bluffs below Austre Lovénbreen glacier in upper-Kongsfjorden E of Ny-Ålesund on 14 Jul. Common in Kongsfjorden during RHIB insertion to Brøgger peninsula study area, 7 Jul and during sea-watch on passage Ny-Ålesund to Longyearbyen, 15 Jul.

Black Guillemot *Cepphus grylle mandtii (Teist).* SPEC 2. Vulnerable. 5000-50 000bp. Stable. Regular but well dispersed bp in all study areas. Individual birds seen regularly off Ny-Ålesund and Longyearbyen harbours. Seven aon (11 adults present) on Simlestupet cliffs in the Brøgger peninsula study area on 8 Jul. Five in Thiisbukta, Ny-Ålesund on 11 Jul. 3 aon (4 adults present) on bluffs below Austre Lovénbreen glacier in upper-Kongsfjorden E of Ny-Ålesund 14 Jul. Scattered individuals in Kongsfjorden during RHIB insertion to Brøgger peninsula study area, 7 Jul and during sea-watch on passage Ny-Ålesund to Longyearbyen, 15 Jul. 6-7 aon (9 adults present) at the cliff study area west of Longyearbyen airport (GR WG 022843, Sheet C9), 17 Jul.

(Atlantic) Puffin *Fratercula a. arctica (Lunde).* SPEC 2. Vulnerable. 1000-10 000bp. Stable. 25 aon (33 adults present) on Simlestupet cliffs and a similar non-surveyed number at the Steinflåstupet cliffs (Brøgger peninsula study area) 8 & 13 Jul respectively. Common in Kongsfjorden during RHIB insertion to Brøgger peninsula study area, 7 Jul and during sea-watch on passage Ny-Ålesund to Longyearbyen, 15 Jul.

Snow Bunting *Plectrophenax n. nivalis (Snøspurv).* Non-SPEC. (Secure). 1000-10 000bp. Stable. The most northerly breeding passerine, and only regularly breeding passerine in Svalbard. Occupies traditional niche in Svalbard tundra boulder fields and screes, and also the '**House Sparrow** *Passer domesticus*' commensal niche in and around settlements. Common in all study areas. Three singing males at Longyearbyen airport on 4 Jul, with one occupied nest in nest-box on the wall of the NPI hostel there. Six singing males around Ny-Ålesund settlement (3 aon in buildings) 10 Jul. Pair with 3 flying young on small lake below Zeppelinfjellet, 11 Jul. A very unusual nesting site (Ny-Ålesund base-camp) (GR VH341625, Sheet A7) with 5 young in the nest and in active use was under the 'long-drop' toilet seat! Individual bp and small loose colonies (2-3bp max) in many suitable tundra boulder fields and screes.

Faunal Notes

The Svalbard polar bear population, at around 1500 animals (c4.5% of the world total) is believed to be stable (CAFF 2001). The Svalbard reindeer *ssp platyrhyncus* now comprises a stable population of 8000, recovering from a low of c1000 in 1920, the remnant of an original of perhaps 10 000 that had been present on the discovery of the islands by Willem Barentz in 1596 (Vangraven 2001). Morphologically, *platyrhyncus*, more than any other *ssp*, can achieve very high proportions of body mass as fat in autumn.

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Summary

The baseline ornithological survey of the immediate Ny-Ålesund area and of the NW end of the Brøgger peninsula was completed successfully, as was a complementary survey around the western environs of Longyearbyen, its airport and a neighbouring cliff complex, and a shipboard sea-watch. Although 164 different bird species have been recorded in Svalbard, only 32 occur regularly and of these, only 30 species breed regularly on the archipelago (Mehlum 1990). Twenty-four of the 32 regularly occurring species were recorded in and around the study areas and 17 species were recorded as breeding.

Conclusion

My participation in Ex SVALBARD ARCTIC was thoroughly worthwhile, both from a personal perspective and in the wider service context. The opportunity to work with civilian scientists of differing persuasions on a variety of diverse projects was personally rewarding. I hope they too will have gained from exposure to the military way of thinking and operating in the field. The arduous nature of the activities on the virgin tundra and terminal moraine dominated landscape have certainly given me a greater appreciation of the practical difficulties in mounting expeditions in the High-Arctic. More importantly, the aims of the expedition were met in full. The survey work undertaken has established a baseline for any future RNBWS, AOS or RAFOS expedition to the Ny-Ålesund area of Svalbard. Finally, positive exposure of Servicemen in the media (in this case of the BBC Midlands Environment correspondent) is of benefit to the Service concerned.

Recommendations

It is recommended that:
1. If invited, future participation in ARG expeditions is authorised by HQPTC.
2. RAFOS considers mounting an expedition to Svalbard to capitalise upon both the experience gained, and data gathered, during Ex SVALBARD ARCTIC.
3. RAFAT regulations be reviewed to recognise the value of civilian qualifications that have no direct Service equivalent, to allow supervision of RAF personnel by competent civilians holding these qualifications, thus allowing greater flexibility in the implementation of these regulations, provided that RAFAT staffs are satisfied, on a case-by-case basis, that safety is not compromised.

Participants

Name	Representing	Projects
Wg Cdr K R Cowieson	RAFOS	1. Ornithological Survey 2. Assisting in 2 HAUC environmentally-related projects Bird photography
Mr A Maxted	HAUC / RAFOS	Two environmentally related projects: 1. Long-term effects of tundra degradation following activities of field parties in the High Arctic. 2. Changes in the organic matter layer characteristics of buried soils as evidence of climatic change over the last century.
Mr I Frearson	ARG - Leader	Surveying (for Imperial College project).
Mr B Frearson	ARG	Plant Ecology (joint project with Imperial College)
Mr D Harper	BBC	BBC documentary production.
Mr C Searston	ARG	Photography.
Ms K Vicat	Imperial College, London	Toxicology and remote sensing involving gamma ray spectrometry of terrestrial plants.

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Appendices

1. ARG Scientific Projects.
2. Important Bird Area Adjacent to Survey Sites.
3. Log of Activity.
4. Planning, Preparation, Travel & Logistics.
5. Maps. 1: Svalbard. 2: Ny-Ålesund, Brøgger Peninsula and Kongsfjorden. 3: Adventfjorden and Longyearbyen.

Appendix I

ARG Scientific Projects

Project 1

The long-term effects of tundra degradation following the activities of field parties in the high arctic

The extent of tourism and scientific research taking place within

the Arctic archipelago of Svalbard has risen significantly in recent years, and in the last decade an average of 14,000 visitors per annum in the 1980s, has more than doubled to over 35,000 visitors per annum in 1997. More recently, large areas of the islands have been opened up to tourists, who no longer require any registration or approval (once deemed essential in such a high-Arctic and potentially hostile environment). Keeping track of visitor numbers has subsequently become almost impossible and the need for guidelines (aiming to minimise the impact of campers and field parties) has now become more urgent.

Research undertaken in 1996 and 1997 demonstrated that the activities of field parties significantly increased soil compaction, reduced floral species diversity, abundance and height. In addition, the movement of tents regularly (known to protect vegetation from camping in temperate regions) was shown to be an inadequate measure for protecting the vulnerable tundra ecosystem. These factors could have important effects on the utilisation of the tundra, as well as causing visual disturbance and aesthetic damage to an otherwise unspoiled wilderness.

The fieldwork undertaken in 1999 was designed to assess the recovery rates of the area assessed in 1997, and therefore provides evidence of the temporal effect of field parties on tundra ecosystems. Parameters such as soil compaction, species diversity and soil temperature were recorded.

It is hoped that guidelines can be produced that will minimise damage from those choosing to camp in the Arctic wilderness of Svalbard. An effort has been made to focus research activities at the research station in Ny-Ålesund, Svalbard, Norway, which will certainly help in reducing impact to other parts of Svalbard. Especially as a campsite has been established thus keeping damage to one confined area. However, with large areas of Svalbard now accessible to tourists without the hindrance of registration, the need for guidelines reducing impact is very important.

Key recommendations should include:

1. Where possible camping should only occur in designated zones such as established campsites, areas demarcated for field camps or within a 200m zone of existing huts or settlements. If this was established in the Svalbard management plan, it would safeguard access for tourists and scientists, concentrate areas of damage and enable areas where camping occurs to be accurately recorded.
2. Camping activity should be limited to areas of polar desert or tundra communities where vegetation cover is not continuous, moisture saturated or dependant upon a fine-grained loosely consolidated soil structure.
3. All waste material should be exported and not for example buried or burned.
4. Latrine facilities should be located in the tidal zone or a non-chemical, solids removable toilet should be used.
5. Cooking water should be disposed of in the sea or in a fast flowing water channel.
6. No open fires.
7. Any displaced rock & stone fragments should be replaced.
8. Cooking should be conducted on a solid stone base to prevent heat transfer and damage to plant and invertebrate communities

Mr. M Beddoe University of Westminster, London, February 2002

Project 2

Changes in the organic matter layer characteristics of buried soils as evidence of climatic change over the last century

This project was designed to investigate changes in the organic matter layer characteristics of buried soils as evidence of climatic change over the last century at Ny-Ålesund, Svalbard, Norway (High-Arctic) and Finse, Southern Norway (Arctic Alpine). This research is investigating soils buried by solifluction lobes at both sites. The burial of soils produces a palaeosol or fossil soil that can be used to reconstruct 'fossil' environments. The last 3 centuries represent some of the coldest and warmest climates since the last ice age and adjacent to each other.

The samples span about 500 to 1000 years at Ny-Ålesund and about 200 years at Finse. The samples from Ny-Ålesund showed that the rate of lobe movement was less than 1cm per decade, and more samples were required closer to the point of burial in order to add detail.

Additional examples of undisturbed soil were collected during the 1999 field season for this purpose, from the front 10cm of one of the solufluction lobes sampled and measured in 1997. The results confirm that lobe movement was indeed less than 1 cm per decade. In adding detail, the rates range from 0.5 to 0.9 cm per decade, about 2 to 9 times slower than in the very high precipitation environment of southern Norway, even on similar slopes. A change in solifluction lobe cross-section since 1989, suggests that the rates have accelerated in association with the present climatic deterioration, and more frequently occurring high snowfalls at Finse, in southern Norway (altitude 1500m) unlike at the Svalbard sites (altitude 25m).

The thickness of the peaty topsoil layer has increased about 2 fold from 0.3 mm to 0.8 mm over the period 1850 to 1950. Increases in organic matter content have been measured in thin section and chemically. The increase is in the order of 2 to 3 fold. The results support the slow but changing nature of polar processes

Dr N W Hall, Harper Adams University College, February 2002

Appendix 2

Important Bird Areas (IBA) Adjacent to Survey Sites
Appendix 2 is derived from Lislevand *et al* (2000)

The expedition base-camp just E of Ny-Ålesund and two of the survey areas were less than 5km to the W of the islands (rocky stacks up to 200m asl and grassy tundra) that comprise Svalbard IBA 003, 'Inner parts of Kongsfjorden'. IBA 003 is centred on 78°55'N 12°32'E, covers 140ha and is also a RAMSAR Site, earning high national and international protection status. The islands are breeding grounds for *c*3500bp of **Common Eider** *Somateria mollissima*, *c*3500bp of **King Eider** *S. spectabilis* and *c*300bp of **Barnacle Geese** *Branta leucopsis*. The first and so far only instance of **Pacific Golden Plover** *Pluvialis fulva* breeding in the Western Palearctic was recorded near here in 1997.

The Longyearbyen survey areas were 2-4km from Svalbard IBA. 007, 'Fuglefjella', which is centred on 78°13'N 15°15'E. The 500ha of IBA 007 comprise steep (up to 470m asl) rocky cliffs that are home to **Black-legged Kittiwake** *Rissa tridactyla* (10 000bp) and **Brünnich's Guillemot (Thick-billed Murre)** *Uria lomvia* (20 000ind). IBA 007 has as yet no protection status. IBA 007 was previously identified as 'Grumant' (Grimmett and Jones 1989). Four other IBAs are within 50km of the Longyearbyen survey areas, 005 Daudmannsøyra at 78°15'N 13°00'E (1000ha of flat boggy land and ponds, and an important moulting area for geese), 006 Alkhornet at 78° 13'N 13°45'E (100ha of sea cliffs at the entrance to Isfjorden), 008 Nordenskiøldkysten at 78°00'N 13°50'E (25 000ha, flat, partly grassy, many freshwater pools and important for **Grey (Red) Phalarope** *Phalaropus fulicaria*), and 009 Ingeborgfjellet at 77°46'N 14°25'E (sea cliffs facing Bellsund regularly holding more than 10 000bp of breeding seabirds).

Appendix 3

Log of Activities

1 Jul 99 Advance party departed from LHR on schedule, but main party (including me) stranded in Oslo after delay occasioned by aircraft problem meant missed connection to Svalbard.

2 Jul 99 Advance party arrives at Longyearbyen, Svalbard. Main party stranded, re-planning at Oslo.

3 Jul 99 Advance party remains at Longyearbyen, Svalbard until main party arrive. Main party still stranded in Oslo. Change of plan: helicopter insertion onto Brøgger peninsula now cancelled. Helo will now drop team at Ny-Ålesund, Brøgger insertion planned for

later, either by RHIB or by foot.

4 Jul 99 Main party arrives Longyearbyen, Svalbard, via Tromsø, joining advance party. PM, Some fieldwork ivo Longyearbyen airport; others organise stores etc in Longyearbyen. Evening, Helo transfer to Ny-Ålesund, arriving 2115 local. Base Camp 1 established by 2359 at Ny-Ålesund *Kings Bay Kull Compani* (KBKC) designated camping area in blazing midnight sunshine.

5 Jul 99 AM, Consolidated campsite before commencing fieldwork. PM, Assisted Andrew Maxted of HUAC with tundra degradation and solufluction lobe projects ivo Ny-Ålesund campsite. Evening, Local area reconnaissance ivo Ny-Ålesund. Ornithological survey commenced.

6 Jul 99 Fieldwork ivo Ny-Ålesund. AM, Further work on HUAC projects. PM, Ornithological survey work SE of campsite and in and around Ny-Ålesund settlement. Arranged RHIB for insertion onto NW Brøgger on 7 Jul 99 through NPI.

7 Jul 99 BBC filming survey work; into Brøgger by RHIB. AM, Piece for BBC documentary during survey fieldwork SE of campsite. PM, RHIB insertion onto N-West Brøgger peninsula. Walk into Brøgger campsite through polar stone desert, pitched camp. Evening, Walk in to *Simlestupet* bird cliffs to recce sites for HUAC heavy metal pollution project.

8 Jul 99 Survey and heavy metal pollution project fieldwork ivo *Simlestupet* bird cliffs. AM, Walk in to bird cliffs. Commenced major HUAC project. PM/Evening, Sampling of 3 transects undertaken; also survey work. Complete by 0200hrs, filmed by BBC.

9 Jul 99 Control study for HUAC heavy metal pollution project. Recovery, on foot from NW Brøgger to Ny-Ålesund campsite. AM, Sampling of one transect undertaken for control study. PM/Evening, March out and RTB. Back by 2330 local.

10 Jul 99 Fieldwork ivo Ny-Ålesund. AM, leisurely start, further survey work in and around Ny-Ålesund settlement. PM/Evening, Further survey work and photography W of Ny-Ålesund settlement.

11 Jul 99 Fieldwork ivo Ny-Ålesund. AM/PM, Survey work and photography W and NW of Ny-Ålesund settlement. Evening, Cooked communal curry for team members, much appreciated by all; filmed by BBC.

12 Jul 99 Fieldwork ivo Ny-Ålesund. AM, Assisted A Maxted of HUAC with further work on tundra degradation project. PM, ornithological survey work W and NW of Ny-Ålesund settlement.

13 Jul 99 Walk out onto Brøgger peninsula for survey of *Steinflåstupet* bird cliffs and *Brandalpynten* lagoon areas. AM/PM, survey work on Brøgger peninsula NW of Ny-Ålesund.

14 Jul 99 Walk into *Kronebreen* glacier, at head of Kongsfjorden, S-East Ny-Ålesund. Ornithological survey work en-route. AM/PM, survey work on alluvial plain and cliffs en-route to *Kronebreen* glacier. Evening, Cooked communal pasta-dish for team members, much appreciated by all.

15 Jul 99 Expedition relocates from Ny-Ålesund to Longyearbyen. AM, Break camp at Ny-Ålesund. PM, recover to Longyearbyen by sea, sea-watching en-route. Depressing stop at Barentsburg; polluted, run-down, Russian mining community. Evening, on arrival Longyearbyen, rationalise stores for recovery. Into comfortable self-catering NPI hostel at airport till departure.

16 Jul 99 Fieldwork in around Longyearbyen/ Longyearbyen airport. AM, Attend fascinating lecture by Dr Ian L Jones, Asst Prof of Biology, Memorial University of Newfoundland[3], on Auks in N Pacific at University of Svalbard. PM fieldwork ivo Longyearbyen airport.

17 Jul 99 Fieldwork in and around Longyearbyen. AM/PM, Fieldwork carried out at **Little Auk** colony 5kms west Longyearbyen airport.

18 Jul 99 Fieldwork/cultural visit in and around Longyearbyen. AM, Fieldwork carried out ivo Longyearbyen airport. PM, Shopping, cultural visits ivo Longyearbyen.

19 Jul 99 Party recovers to UK uneventfully, via Tromsø and Oslo.

Appendix 4

Planning, Preparation, Travel & Logistics

This being primarily a civilian expedition, only the minimum of RAF expedition planning was necessary. The ARG negotiated all the essential permits, such as obtaining from the *Sysselmann* (the Norwegian governor of Svalbard) permission to mount this (or any) scientific expedition on Svalbard and to operate in the field. The ARG also obtained the formal agreement of the *Kings Bay Kull Compani* (KBKC) to use the designated campsite at Ny-Ålesund, and of the *Norsk Polar Instituut* (NPI) to use the Longyearbyen Airport campsite and hostel. These lengthy negotiations are not always successful, due to local priorities, but the ARG and I had completed all planning by mid-Apr. Expedition stores and dry rations were dispatched by sea on 11 May 99.

We had a successful training weekend in the Derbyshire Peak District on 21-23 May 99, but it highlighted a regulational difference between military and civilian qualifications required for expedition leaders, for apparently there is no civilian equivalent Alpine Glacial Leader (AGL(S)) qualification. Despite the ARG leader's extensive experience and qualifications as a mountaineer, as a leading member of a Mountain Rescue Team and as an expert on Svalbard (over 20 years experience of Svalbard expeditions, many involving glaciology and camping out on glaciers for up to 5 weeks continuously), RAF Adventurous Training (AT) rules prevent my participation in glacier-crevasse escape and rescue techniques unless directly supervised by a military AGL(S). I could not therefore train for, nor later participate in, glacier-related activities, despite the ARG civilian leader being ideally suited to supervise such activity. It would appear that a minor administrative amendment to RAF(AT) regulations would resolve this anomaly, and at the very least, written guidance provided on a common-sense approach to be taken in the field, taking into account the need for safe and sensible compromise on a case by case basis.

Travel

The plan was for the party to fly by civil air with SAS from London Heathrow to the Svalbard capital Longyearbyen via Oslo and Tromsø on 1-2 Jul 99, but this provided the only major problem for the expedition. A cockpit warning light led to an emergency evacuation of the aircraft just after it had left the stand at Heathrow. After the adrenaline had subsided, it was apparent that our travel plans had been severely disrupted, because onward connections could not be made, and the second and last flight of the week would see us arrive in Svalbard two days late, on 4 Jul 99. However, compensatory accommodation in a 5 star SAS hotel in Oslo alleviated somewhat the pain of this disappointment. The return civil air journey on 19 Jul 99 went without a hitch, being completed in only 8hrs 30min.

On arrival at Longyearbyen, we transferred onward to Ny-Ålesund by helicopter chartered by the ARG but paid for by SAS, again by way of compensation. The expedition recovered on a cruise ship (MS *Nordstjernen*) to Longyearbyen from Ny-Ålesund, via the Russian coal-mining settlement Barentsburg, enabling me to carry out a sea-watch to complement my base-line ornithological survey of the Ny-Ålesund and Brøgger areas.

All travel during the fieldwork phases was by foot, the exception being insertion on to the Brøgger peninsula by means of a RHIB (hired from the Ny-Ålesund NPI station), to make up time lost through the flight delay. As expected, the going on the *strandflat* and tundra was heavy, but nevertheless we achieved 2-3km/h routinely. Although most of the winter snow had melted, the *strandflat* was in many places waterlogged; braided streams and terminal moraine boulder fields on the alluvial plain could reduce average speeds significantly and force lengthy detours, particularly in the case of the deeper, fast-flowing streams. Nevertheless, we gained access to all the planned study areas around Ny-Ålesund. We walked between 12-20km per day, laden with a 20-25kg hill-pack, thus easily satisfying the arduous requirements of RAF (AT) expeditions.

3 Dr Jones, co-author of The Auks (1998. OUP. Oxford), was carrying out fieldwork studying and trapping **Little Auk** *Alle alle* at colonies by our cliff study area west of Longyearbygen airport.

Accommodation

We used mostly tents and hostel accommodation, most of the period (11 of 18 nights. 4-14 Jul) camping either at the KBKC tundra campsite E of Ny-Ålesund (9 nights) or at a stone polar desert site on the Brogger peninsula (2 nights). For 3 nights (1-3 Jul) we were in the Oslo SAS hotel. and for another 3 (15-18 Jul) we used the self-catering NPI hostel at Longyearbyen airport.

Food and Water

Fresh water was readily available around the campsites near Ny-Ålesund and on the Brøgger peninsula, either from glacial melt-water streams or freshwater lakes. Our food supplies were shipped to Svalbard in heavy-duty rodent-proof plastic barrels, the victuals being mostly of the dried or tinned high-calorie carbohydrate variety, supplemented by fresh fruit and vegetables obtained from the Ny-Ålesund store. We used paraffin stoves to cook in the field.

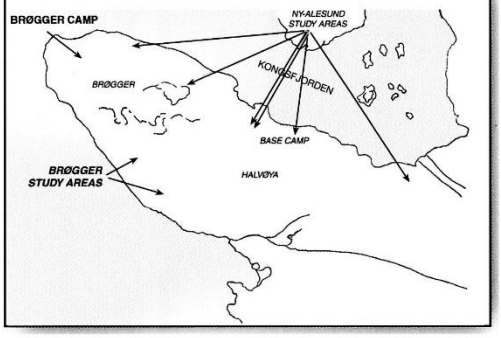
Appendix 5

Maps

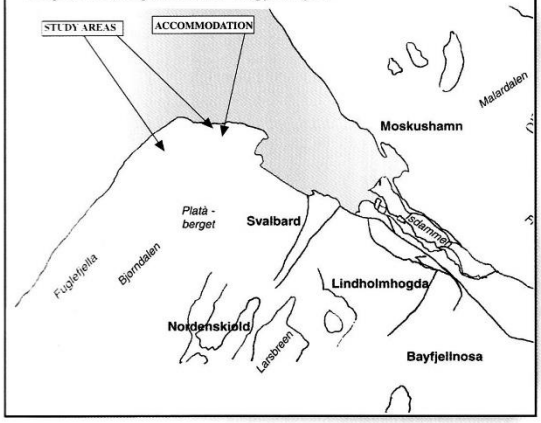
1: Svalbard. 2: Ny-Ålesund, Brøgger Peninsula and Kongsfjorden. 3: Adventfjorden and Longyearbyen.

Map 1: Svalbard

Map 2: Ny-Ålesund, Brøgger Peninsula and Kongsfjorden



Map 3: Adventfjorden and Longyearbyen



Richard Gregory-Smith - AOS - 1928-2001

Richard Gregory-Smith was born in Bournemouth on 13 November 1928. After Sandhurst he joined the Indian Army and when India gained its independence in 1947 he transferred to the Royal Corps of Transport and was posted to Egypt, and then commanded 123 Supply Platoon RASC in Tripoli. He attended the Royal Military College of Science degree course from 1950-52. He commanded 25 Transport Squadron RCT in Singapore, then British Mudlark Vehicle Trials Unit in Thailand. He was the officer in charge of Combat Vehicle Sub-zero Trials in Canada and Staff Officer. Technical Intelligence HQ British Army on the Rhine. He specialised mainly in the supervision of army vehicle performance tests. in the RCT and MVEE.

Richard came to Australia as an exchange officer in 1976, and ended his military career in 1979. He then joined the Australian Development Assistance Bureau, working in Papua New Guinea from 1986-89. Always the explorer, when based in PNG, he travelled to the Philippines, Africa and India.

Richard's fascination with birds drew him into many bird societies and projects. He was secretary of the British Army's Ornithological Society (AOS), president of the Dharan, Nepal Natural History Club and vice-president of Papua New Guineas's Ornithological Society.

After his retirement he followed his wife Judyth, who taught in Kedah and Sarawak, Malaysia while he devoted himself full time to ornithology.

Richard is greatly missed by his fellow birdwatchers, who knew and enjoyed him as a birdwatching companion, an excellent cook, and a warm and welcoming host.

Short notes, 1

The Migration of the Common Swift *Apus apus* to its Breeding Areas

By Ulrich Tigges[1]

(This article is dedicated to the memory of Sub-Lt John Godwin RN and his four comrades from Operation Checkmate, and all others murdered by the SS at Sachsenhausen on 2 Feb 45).

The Common Swift lives in Africa, Europe and Asia and spends most of the year (approximately nine months) south of the Sahara desert in Africa. During the breeding season it migrates north and northeast and spends three months in North Africa, Europe, and northern Asia.

Nearly the entire population of Swifts migrates twice a year from south to north and then back, leaving its wintering areas to arrive in spring in its breeding areas. Only a few birds, supposedly non-breeders, remain for the summer south of the Sahara (Moreau 1972). It is not yet known how the Common Swift spends its time in Africa, although it has been seen on the wing everywhere. We don't know whether Swifts move there in any special pattern, nor do we know whether there is a correlation between breeding areas and wintering areas. Erich Kaiser (2001) guesses that they may follow the Inter Tropical Convergence Zone (ITCZ), a circumferential tropical weather system belt that moves seasonally according to the incidence of the sun. In its centre, the upward-moving air holds and concentrates vast numbers of insects on which the Swifts can feed on endlessly.

Breeding areas are occupied from south to north and northeast, rather like the unrolling of a carpet, although local geography introduces many variations. The first appearance of the Common Swift in Tel Aviv in Israel is in the second week of February (Tigges 2001), while in South Morocco it is in the middle of March (Internet 2001). Migrating Swifts then continue north and northeast until the northernmost breeding areas are occupied too, in the case of Dokkas in Swedish Lapland, being the last week of May (Leidgren 2000).

However, it is not yet known whether Israeli or Moroccan Swifts have ever reached the United Kingdom or Scandinavia. As far as we know, the entire Swift population migrates south to the wintering areas once breeding is over, although many fledglings temporarily disperse north or northeast when they leave the nest (Tarburton & Kaiser 2001). Because the Common Swift populations are very faithful to their breeding areas, and new breeders mostly reflect this tendency, the maximum known distance being 122km (Weitnauer 1975), we can hypothesize that all the Swifts in neighbouring colonies are more or less closely related to each other and conclude that more distant populations will show increasing genetic differences. Further research may uncover some of the secrets of these aspects of Swift life.

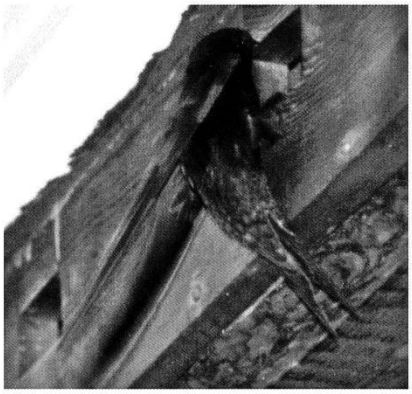
The cumulative invasion of breeding areas is known from precise observations by ornithologists, especially in the UK and central Europe. Careful records make clear that the occupation of the breeding areas here follows a strict pattern of 4 waves:

Advance guard. In central Europe the first wave of Common Swifts comprises single birds or small groups of three or a few more. We do not know whether these birds are breeders or not. They are often difficult or impossible to observe continuously.

Vanguard. About 12-14 days later, the first breeders appear and immediately occupy their old nests.

Main body. The much heavier third wave, also of breeders, appears about two or three days after the vanguard.

Rearguard. About four to six weeks after the main body, the fourth and final wave appears, the birds comprising it definitely being non-breeders, because it is too late for them to raise chicks successfully. These are general timings, of course, applying to the species as a whole. Individual dates of arrival vary much more widely (Lack 1956, Tigges 1998). It is only now that the skies are really crowded with Common Swifts! Non-breeders comprise about 50-80% of the population (Tigges 1998).



Common Swift *Apus apus*. Copyright Ulrich Tigges.

This is the pattern in central Europe and because observations in Israel revealed the same pattern (Tigges 2001), we therefore have reason to believe that it may be repeated elsewhere. The whole migration process to the Swifts' breeding areas is widespread, both temporally (lasting some seven months) and spatially (Middle East breeders start their autumn migration in early June, possibly passing en route Lapland birds that reach their breeding grounds in mid-June).

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Secondary Source

INTERNET2001. (Valid Feb 02). http://groups.yahoo.com/group/martinets-hirondelles

Footnote

1 Ulrich Tigges has long been an associate of AOS activities.

Short notes, 2

In search of the Bald Ibis *Geronticus eremite*

(Morocco 18-25 November 2001)

By Tim Hallchurch

On Monday 18 November Patricia Davies and myself of the AOS flew to Agadir in search of the **Bald Ibis**[1,2] *Geronticus eremite*, whose world population is probably fewer than 300 individuals, c220 being the 1999 count (Touti *et al* 1999). The small wild population in Turkey is now extinct (a few captive-bred birds are breeding, but their long-term survival is uncertain) and there may still be a small Yemeni population whose status is unknown. The remaining birds are all in Morocco (Stattersfield & Capper 2000). Our other target species were **House Bunting** *Emberiza striolata* and **Black-crowned Tchagra** *Tchagra senegala*.

We stayed in the comfortable Agadir Beach Club and hired a car. We were armed with reports from previous birding trips that had been posted on the Internet. The next morning was spent just outside Agadir having a look at the Oued Sousse that was teeming with waterbirds including **Greater Flamingo** *Phoenicopterus ruber* and **Glossy Ibis** *Plegadis falcinellus*. The estuary, now a nature reserve, is part of a 33 800ha National Park declared as an Important Bird Area (MA038; Fishpool and Evans 2001), and is adjacent to the King's southern palace, which is surrounded by a 4km wall. A very friendly warden polices the area. That afternoon we set off north about 65km to Tamri (MA031; Fishpool and Evans 2001) where we had read that **Bald Ibis** roost on the cliffs, but despite directions from local children who knew the species, two hours' searching failed to locate the birds, although we did flush a **Stone Curlew** *Burhinus oedicnemus* in the process. Wednesday took us inland to the Atlas Mountains via Taroudant near which there is a barrage on the river Sousse (or Sous or Souss) where we saw **Rock Thrush** *Monticola saxatilis* and two distant **Ruddy Shelduck** *Tadorna ferruginea*. The mountains were almost devoid of bird life except for a **Black Wheatear** *Oenanthe leucura*.

Thursday 21st was our best day. We visited the Oued Massa, about an hour's drive south of Agadir. It had rained early in the day, making much of the ground very muddy, but out of the shelter of the valley the wind was strong enough to blow sand. The estuary is a nature reserve and on entering the area via Sidi Rbat we met a bicycling local complete with field guide and binoculars. Hassan was a fisherman, but had learned that birders will pay him to guide them. He said he knew where to find **Bald Ibis** and so we set off in our hire car across the desert. We bogged down once, but after that it was flat out, charging the sand drifts until, after 30 minutes' hairy driving, we came to a small village near Tifnite. Hassan told us to stop under a ridge. We took a short walk up the hill to find 33 **Bald Ibis** in front of the village, but two local women were coming upslope towards the birds, forcing them to fly away before we were near enough to take decent photographs. Nevertheless, we had seen our very first **Bald Ibis**.

The Oued Massa reserve and the wetland valley are very rewarding areas for birding, where we saw **Glossy Ibis, Marsh Harrier** *Circus aeruginosus* and many duck. The **Greater Flamingos** were very noisy. Sidi Rbat village is home to **House Bunting, Desert** and **Spanish Sparrow** (*Passer simplex* and *P. hispaniolensis*) and a roost for a **Barn Swallow** *Hirundo rustica* flock on the TV antennas. We returned the next day to the Oued Massa and alongside the river near Massa village explored the fields, which were full of passerines including Cetti's Warbler *Cettia cetti*, **Zitting Cisticola** *Cisticola juncidis*, a very blue **Chaffinch** *Fringilla coelebs* and various *Phylloscopus* warblers. We saw a flock of **Desert Lark** *Ammomanes deserti* as we began our return to Agadir, and later at the Barrage Yousef Ben Tachfine on the Oued Massa an **Osprey** *Pandion haliaetus* and three **Bonelli's Eagles** *Hieraaetus fasciatus* entertained us.

Saturday 23rd November saw us back at the Oued Sousse reserve, where we added to our list **Black-crowned Tchagra** and many waders including **Black-** and **Bar-tailed Godwit** *(Limosa limosa* and *L. lapponica)*, **Greenshank** *Tringa nebularia*, **Dunlin** *Calidris alpina*, **Spoonbill** *Platalea leucorodia*, **Ringed** *Charadrius hiaticula* and **Kentish Plover** *C. alexandrinus* and many others. An **Osprey** demonstrated how to catch fish. In the late afternoon, above Agadir we visited the old fort that now lies in ruins after the 1960s earthquake, and found **Black Wheatear, House Bunting, Trumpeter Finch** *Bucanetes githagineus* and a **Blue Rock Thrush** *Monticola solitarius*.

We went back to the fort the next day, being pleasantly surprised in the car park by a small flock of **Shore Lark**. We had achieved a total of 123 species in a week in an area with potential for many more, because we had been just a few weeks too late to encounter the main migrations, early October being ideal. However, we had achieved our main aim, to see the critically endangered **Bald Ibis.**

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A tabulated copy of the list of sightings is available from Tim Hallchurch at Tim@oxford-consultants.com or from the AOS Website through the MOD Web Site http://www.army.mod.uk/ or directly from: http://armyos.tripod.com

Footnotes

1 Some authorities now use the English name **Waldrapp** for *Geronticus eremite*, assigning the English name **Bald Ibis** to *G. calvus* of the western inland mountain regions of South Africa (del Hoyo *et al* 1992-99, Clements 2000). Alternatively, others suggest the names **Northern** and **Southern Bald Ibis** respectively (Stattersfield & Capper 2000).

2 The **Bald Ibis** joint project comprises the Moroccan Eaux et Forets National park service and Birdlife International (RSPB, SEO and UK & Spanish partners).

Northern Bald Ibis *Genronticus eremita* at breeding site in Morocco. Copyright Chris Bowden, RSPB (Project officer in the joint Moroccan/ SEO/ RSPB efforts to save the **Northern Bald Ibis**).

Arctic Skua *Stercorarius parasiticus* calling. (Svalbard).
Copyright Keith Cowieson.

Arctic Tern *Sterna paradisaea* at nest. (Varangerfjord).
Copyright Keith Cowieson.

Long-tailed Skua *Stercorarius longicaudus* at nest. (Varangerfjord).
Copyright Keith Cowieson.

Black Guillemot *Cepphus grylle* (Varangerfjord).
Copyright Frances Chetwynd.

Dark-phase **Arctic Skua** *Stercorarius parasiticus* at nest.
(Varangerfjord). Copyright Keith Cowieson.

Colour marked **Kittiwakes** *Rissa tridactyla.* (Svalbard).
Copyright Keith Cowieson.

Little Auk *Alle alle.* (Svalbard) Copyright Ian Frearson ARG.

Counting Skua eggs. **Arctic Skua** *Stercorarius parasiticus.* (Svalbard) Copyright Keith Cowieson.

Grey Phalarope *Phalaropus fulicarius.* (Svalbard) Copyright Keith Cowieson.

Snow Bunting *Plectrophenax nivalis* nest. (Svalbard) Copyright Keith Cowieson.

Sitting **Long-tailed Duck** *Clangula hyemalis.* (Svalbard) Copyright Keith Cowieson.

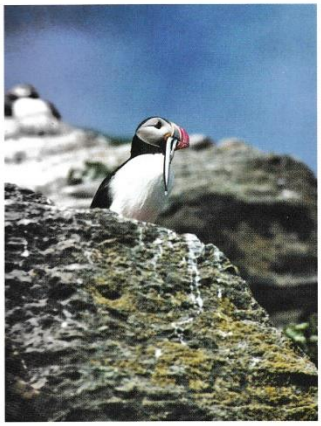
Barnacle Goose *Branta leucopsis.* (Svalbard) Copyright Keith Cowieson.

Ivory Gull *Pagophila eburnea.* (Svalbard) Copyright Keith Cowieson.

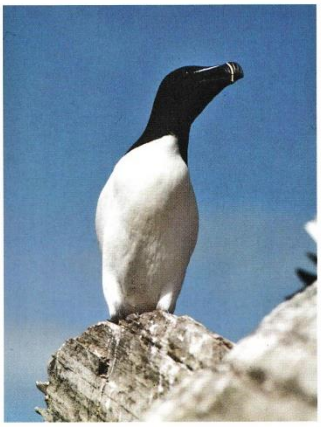
Long-tailed Skua *Stercorarius longicaudus.* (Varangerfjord). Copyright Keith Cowieson.

Incubating **Eider** *Somateria mollissima.* (Varangerfjord). Copyright Keith Cowieson.

Female **Snow Bunting** *Plectrophenax nivalis.* (Varangerfjord). Copyright Keith Cowieson.



Puffin *Fratercula arctica.* (Varangerfjord). Copyright Keith Cowieson.



Razorbill *Alca torda.* (Varangerfjord). Copyright Keith Cowieson.

Red-throated Diver *Gavia stellata.* (Scotland). Copyright Keisth Cowieson.

Kittiwake *Rissa tridactyla,* nesting in house. (Varangerfjord). Copyright Keith Cowieson.

Steller's Eider *Polysticta stelleri.* (Varangerfjord). Copyright Keith Cowieson.

Purple Sandpiper *Calidris maritima.* (Varangerfjord). Copyright Keith Cowieson.

Bridled Guillemot *Uria aalge.* (Varangerfjord). Copyright Keith Cowieson.

Turnstone *Arenaria interpres.* (Varangerfjord). Copyright Frances Chetwynd.

Shag *Phalacrocorax aristotelis.* (Varangerfjord). Copyright Keith Cowieson.

Little Stint *Calidris minuta*.
(Varangerfjord). Copyright Keith Cowieson.

Eurasian Dotterel *Charadrius morinellus.*
(Varangerfjord). Copyright Keith Cowieson.

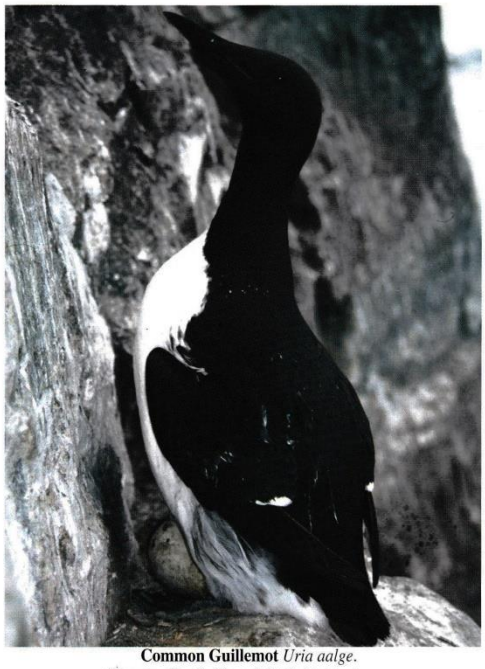
Wood Sandpiper *Tringa glareola.*
(Varangerfjord). Copyright Keith Cowieson.

Whimbrel *Numenius phaeopus*.
(Varangerfjord). Copyright Keith Cowieson.

Shore Lark *Eremophila alpestris.*
(Varangerfjord). Copyright Keith Cowieson.

Temminck's Stint *Calidris temminckii*.
(Varangerfjord).Copyright Keith Cowieson.

Brünnich's Guillemot *Uria lomvia*.
(Varangerfjord). Copyright Keith Cowieson.



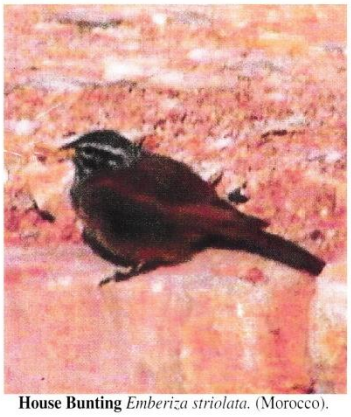
Common Guillemot *Uria aalge*.
(Varangerfjord). Copyright Keith Cowieson.

Sooty Tern *Sterna fuscata* and week-old chick. (Ascension). Copyright Roger Dickey.

Ringing a juvenile **Sooty Tern** *Sterna fuscata* at Mars Bay. (Ascension). Copyright Roger Dickey.

Feral cat larder of **Sooty Tern** *Sterna fuscata* corpses. (Ascension). Copyright Roger Dickey.

Introduced Mexican thorn *Prosopis juliflora* (mesquite), an intrusive and serious threat to Ascension's ecosystem. Copyright Roger Dickey.



House Bunting *Emberiza striolata.* (Morocco).

Glossy Ibis *Plegadis falcinellus* (Oued, Sousse, Morocco).

Black Wheatear *Oenanthe leucura.* (Morocco)

Bottom row, all copyright Tim Hallchurch

Yellow Bittern *Ixobrychus sinensis.* (Koshi Tappu, Nepal). Copyright T. Hallchurch.

F Purple Sunbird *Nectarinia asiatica.* (Bharatpur, India). Copyright T. Hallchurch.

Great Egret *Egretta alba.* (Koshi Tappu, Nepal). Copyright T. Hallchurch.

Whitebreasted Waterhen *Amaurornis phoenicurus* (Bharatpur, India). Copyright T. Hallchurch

Coppersmith Barbet *Megalaima haemacephala.* (Bharatpur, India). Copyright T. Hallchurch.

Bar-headed Goose *Anser indicus.* (Bharatpur, India). Copyright T. Hallchurch.

Oriental Darter (Anhinga) *Anhinga melanogaster.* (Bharatpur, India). Copyright T. Hallchurch.

Pied Kingfisher *Ceryle rudis.* (Bharatpur, India). Copyright T. Hallchurch.

Common Swift *Apus apus.* (The migration of the Common Swift). Copyright Ulrich Tigges.

Denis Chandler, Tim Hallchurch, Dr Hem Sagar Baral and Patricia Davies at Koshi Tappu, Nepal. Copyright Tim Hallchurch

The 2001 AOS Expedition to Nepal and India Exercise Black Eagle

24 February - 18 March 2001

By Maj (Retd)Hilary Nash and Maj (Retd) Tim Hallchurch

Introduction

The Expedition was organised and led by Tim Hallchurch MBE with advice from Lt Col Jerry Birch, Colonel Mike Allen of Ussher Tours and Diane and Raj Singh of Indian Experience. Hilary Nash kept the daily log. Tim Hallchurch maintained the daily callover records. The Expedition used professional guides, Dr Hem Sagar Baral in Nepal and Sohan Lal at Bharatpur.

After a day spent travelling from UK to Kathmandu in Nepal, it was intended that the Expedition spend three days acclimatising nearby at Phulchowki (Flower Hill), which rises to 2762m (9061ft), before going on for five days in the area around Biratnagar. The Expedition would stop over in Kathmandu for a day before flying to India, landing at Delhi (where three of the party returned to UK) and travelling by coach to Bharatpur. After four days there, the main party would return to UK, allowing the two remaining team members to go back to Kathmandu to spend another seven days trekking in Nepal. In the event, the Expedition departure was delayed by aircraft unserviceability, losing a full day's activity. This paper contains tables of the sightings listed by location, but without annotations. It also makes brief comment on notable bird records, and includes a summarized log of activity (**Appendix 1**).

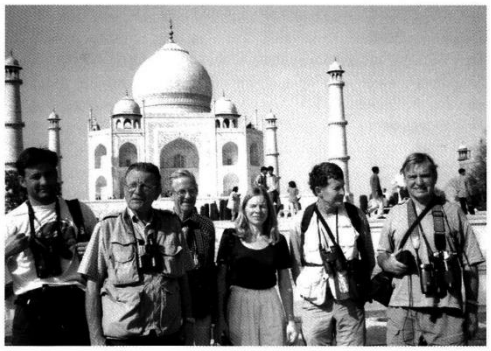
Bird Names and Taxonomy

The first comprehensive work to cover the birds of the Indian subcontinent appeared in the late 1960s (Ali & Ripley 1968-74) in ten volumes, later being reissued in a single compact edition (Ali & Ripley 1983). A truly outstanding achievement, it nevertheless slowly became outdated as much new ornithological recording and research produced valuable data that belonged in such a work. Furthermore, developments in taxonomy gradually rendered obsolete previous work, particularly when the results of published DNA research demanded revisions. Moreover, ongoing fieldwork provided evidence of range increases and decreases, and of distribution changes.Without a new handbook, coordination of ornithological work within the subcontinent and across its borders would be subject to much confusion. The first step was the publication of a new checklist of the Oriental region (Inskipp, Lindsey & Duckworth 1996) and then came an identification guide for the subcontinent (Grimmett, Inskipp & Inskipp 1998). Smaller field guides for neighbouring countries followed, based on the identification guide. The Expedition tables of sightings use the identification guide and the derived field guide for Nepal (Grimmett, Inskipp & Inskipp 2000).

Notable Records

Nepal

On 26 February on the top of Phulchowki a **Crested Serpent-Eagle** *Spilornis cheela* and a **Rufous-breasted Accentor** *Prunella strophiata* were noted. Other good sightings were of two male **Kalij Pheasants** *Lophophorus impejanus* fighting over a female and of a **Mountain Hawk-eagle** *Spizaetus nipalensis*. On the first day in the field, there were excellent views of the Exercise bird, a **Black Eagle** *Ictinaetus malayensis*! The next day the party was greeted in the car park by **Hodgson's Redstart** *Phoenicurus hodgson* and by a pair of **Plumbeous Redstarts** *Rhyacornis fuliginosus* on the stream inside the Godawari Botanical Gardens. There were masses of **Warblers** around including **Blyth's Leaf** *Phylloscopus reguloides*, **Lemon-rumped** *P. chloronotus*, and **Black-faced** *Abroscopus schisticeps.*



Looking for the birds of the Taj Mahal.

Two **Scaly (White's) Thrushes** *Zoothera dauma* made Richard Seargeant's day, topped by **White-collared Blackbirds** *Turdus albocinctus*. Up Phulchowki there were flocks of **Black-throated Parrotbills** *Paradoxornis atrosuperciliaris* and **Chestnut-crowne Laughing thrushes** *Garrulax erythrocephalus*. After landing at Biratnagar on 28 February, the party encountered on the Koshi Tappu Reserve a flock of some 60 **Ferruginous Ducks** *Aythya nyroca*, and found **Bronze-winged Jacanas** *Metopidius indicus*, **Stork-billed Kingfishers** *Halcyon capensis*, several **Eagle** species appearing overhead. That night a **Cinnamon Bittern** *Ixobrychus cinnamomeus* skulking in the reeds was seen with great difficulty.

On 1 March good views were obtained of **Ruddy-breasted Crake** *Porzana fusca*, after which the distractions were two **Bristled Grassbirds** *Chaetornis stratus*, a scarce and very local bird residing in a field behind the camp. Floating down the Kosi River in inflatables established that the sandbars are home to at least a thousand **Little Pratincoles** *Glareola lactea*. Also seen were **White-browed Wagtails** *Motacilla maderaspatensis*, **Kentish** *Charadrius alexandrinus* and **Little Ringed Plovers** *C. dubius*, and **Sand Larks** *Calendrella raytal*. **Black-bellied Terns** *Sterna acuticauda* also showed up (another scarce local bird), as did the commoner **River Tern** S. *aurantia*.

Voted the best bird of the day was **Siberian Ruby-throat** *Luscinia calliope*. The daily total was about 130 species, including 6 *Phylloscopus* **Warbler** *spp:* **Greenish** *P. trochiloides*, **Hume's** *P. humei*, **Dusky** *P. fuscatus*, **Smoky** *P. fuligiventer*, **Tickell's** *P. affinis* and **Chiffchaff** *P. collybita tristis*. The next day saw the party off to the Kosi Barrage, but before then a **Spot-billed Pelican** *Pelecanus philippensis*, a scarce bird, obligingly flew past the camp one way then back again several minutes later. En route there were many **Ashy Wood Swallows** *Artamus fuscus* sitting on telegraph wires. On the upstream side of the barrage there was a very large flock of ducks, comprising about 700 each of **Lesser Whistling Duck** *Dendrocygna javanica* and **Northern Pintail** *Anas acuta*, about 500 **Common Teal** *Anas crecca* and also some **Garganey** *Anas querquedula*. Other good birds included two **River Lapwing** *Hoplopterus duvaucelli* and twelve **Grey-headed Plovers** *H. cinereus*. By early afternoon the increasing wind made birding difficult, but two **Swamp Francolins** *Francolinus gularis*, another scarce and declining bird, obliged.

On 3 March **Black Bittern** *Dupetor flavicollis* appeared for long enough for Tim Cowley to run back to his tent and drag Richard Seargeant out of bed and down to see it! Wonderful views obtained in remnant Terai forest of a **Crested Serpent Eagle** circling low overhead, but for some the best bird was a **Collared Falconet** *Microhierax caerulescens*, sitting high up in a bare ***Bombak*** tree eating a dragonfly. In the afternoon, after seeing **Eurasian Thick-knees (Stone Curlew)** *Burhinus oedicnemus* the party returned to Koshi Tappu and once again set out on the bund, where both **Jungle Owlet** *Glaucidium radiatum* and **Brown Hawk Owl** *Ninox scutulata* were found, as were two more **Swamp Francolins**. Before returning to Kathmandu the next day, dawn birding brought great luck when a **Baillon's Crake** *Porzana pusilla* walked into a telescope field of view aimed at a **Clamorous Reed Warbler** *Acrocephalus stentoreus*. Other birds well seen were **Yellow Bittern** *Ixobrychus sinensis*, **Painted Snipe** *Rostratula benghalensis* and **Red-necked Falcon** *Falco chicquera*.

On 5 March, the 'serious' birders opted out of a cultural visit to good effect, finding another **White's Thrush**, a **Jungle Owlet** eating a **House Sparrow** *Passer domesticus* and getting good views of a **Spotted Forktail** *Enicurus maculatus*, previously seen indistinctly on a Phulchowki stream. Other good birds were **Maroon Oriole** *Oriolus traillii* and both **Greater** *Picus flavinucha* and **Lesser Yellow-naped Woodpeckers** *Picus chlorolophus*. At Soyambu *Nath* at least 100 **Black Kites** *Milvus migrans* soared overhead.

India

On 6 March, the party was reduced by three off to UK, the remainder going to the *Swoyambhu Bird Reserve*, just outside Delhi where 16 **Greater Flamingos** *Phoenicopterus ruber*, the site speciality, noisily proclaimed themselves. Also present were **Sarus Cranes** *Grus antigone* and a **Hen Harrier** *Circus cyaneus*. The coach driver got lost on the way to Bharatpur and the journey took over six hours. On the morning of 7 March at Bharatpur, a trishaw rider pointed out a **White-eared Bulbul** *Pycnonotus leucotis* for the party, who then found the first of many **Brahminy Starlings** *Sturnus pagodarum*. On Bharatpur reserve, in the wet areas there were easily visible **Bluethroat** *Luscinia svecica* and both **Moustached** *Acrocephalus melanopogon* and **Clamorous Reed Warblers** while overhead **Eagles** soaring, including **Great Spotted** *Aquila clanga*, **Steppe** *A. nipalensis* and **Imperial** *A. heliaca*. Waterfowl were abundant, many **Shovelers** *Anas clypeata*, **Common Teal**, **Spot-billed Ducks** *Anas poecilorhyncha* and **Bar-headed Geese** *Anser indicus*.

The afternoon trip to the Taj Mahal and the Red Fort provided the only **Brown Rock Chat** *Cercomela fusca* and **Brown-headed Barbet** *Megalaima zeylanica* seen. The next day was spent on the reserve, the morning in the wetlands, where new birds were **Lesser Spotted Eagle** *Aq. pomarina* and **Brahminy Kite** *Haliastur indus*. The party's local guide, Sohan Lal, found a **Black Bittern** *Ixobrychus flavicollis* and several **Black-crowned Night Herons** *Nycticorax nycticorax* on the pond by the Temple, where **Yellow-fronted** *Dendrocopos mahrattensis* and **Brown-capped** *D. nanus* **Woodpeckers** were seen. The afternoon was spent in the drier part of the reserve, the search producing **Oriental Scops Owl** *Otus sunia* and two **Savanna Nightjars** *Caprimulgus affinis*.Tim Cowley also found a **Sociable Lapwing** *Vanellus gregarius*. **Large Grey Babbler** *Turdoides malcolmi* also made the list.

On 9 March, the morning was spent in 'The Nursery', which produced good views of two **Ashy Drongos** *Dicrurus leucophaeus*, a **Grey Wagtail** *Motacilla cinerea*, and an **Oriental Honey Buzzard** *Pernis ptilorhyncus* as well as a very smart **Orange-headed Ground Thrush** *Zoothera citrina*. In the village **Tickell's Thrush** *Turdus unicolor* was on the rubbish tip. Most then had a siesta, but Tim, David and Hilary found **Yellow-wattled Plover (Lapwing)** *Vanellus malabaricus* courtesy of a local guide. Highlights of the late afternoon jaunt to the temple area were two **Comb Ducks** *Sarkidiornis melanotos*. Saturday 10 March was the last day of the Expedition for all but Ros and Hilary Nash. **Dusky Crag Martins** *Hirundo concolor* nesting in the hotel atrium clearly impressed.

Nepal, Ros and Hilary Nash.

On Monday 12 March, high on a mountain ridge, **Grey Nightjars** *Caprimulgus indicus* called most of the night. On the next day, they had good early views of **Yellow-billed Blue Magpie** *Urocissa flavirostris*, and on a mountain saddle at Gopre, of **Brown Bullfinch** *Pyrrhula nipalensis*. Early on 14 March they saw a **Spotted (Eurasian) Nutcracker** *Nucifraga caryocatactes* en route, but the hoped-for telescope views of **Alpine Accentors** *Prunella collaris* seen earlier did not materialise, but compensation came in the form of very good observations of four **Himalayan Griffon Vultures** *Gyps himalayensis* and a **Winter Wren** *(Troglodytes t. nipalensis)*, the latter just by the camp. The next day, seeking **Himalayan Pheasant (Monal)** *Lophophorus impejanus* Nepal's National Bird, two males were flushed, but only as far as a rocky outcrop, where they posed handsomely. The cold weather had made them disinclined to disappear. A **Brown Accentor** *Prunella fulvescens* also appeared. As yesterday, long descents were tiring, but on 16 March, the splendid **Mrs Gould's Sunbirds** *Aethopyga gouldiae* cooperated, the river producing **Little Forktails** *Enicurus scouleri* and **White-capped Redstarts** *Chaimarrornis leucocephalus*. The last day of descent and of birding, 17 March, gave us two **Crested Kingfishers** *Megaceryle lugubris* on the river before breakfast, and en route to the Kathmandu Guest House, a juvenile **Besra** *Accipter virgatus*.

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Participants

Thirteen members of the Army Ornithological Society took part.
Colonel (Retd) Tom & Mrs Judy Walcot
Lt Col (Retd) Birch
Lt Col (Retd) Derek Sherrard Smith
Major (Retd) Tim Hallchurch MBE
Maj (Retd) Hilary and Mrs Ros Nash (Including a further weeks trekking in Nepal)
Capt Tim Cowley Royal Logistics Corps
Mr Denis & Mrs Barbara Chandler (Nepal only)
SSGT Richard Seargent Adjutant General's Corps (Nepal only)
Mr Dave Pentelow
Mrs Patricia Davies

Acknowledgements

Our thanks to those that helped make the expedition a success. Colonel Mike Allen of Ussher Tours and our guide in Nepal Dr Hem Sagar Baral and the team of drivers and back up team and Diane and Raj Singh of the Indian Experience and Sohan Lal, our guide at Bharatpur.

Appendix I

Log of Activity

Saturday 24 Feb. Meet as instructed at Heathrow, but aircraft is grounded in Doha inbound, eta 0800 Sunday. Hold baggage, already checked in, raided for essentials for overnight stay Radisson Edwardian Hotel. Contingency supper confirms Qatar Airlines provide a not over generous allowance.

Sunday 25 Feb. Despite most wake-up calls failing, all into early

breakfast, somewhat strange concoction of fruit, cheese and salami. Aircraft had arrived so quickly into departure lounge for 0945 departure. On-board food reasonable, but seats decidedly cramped. Arrival in Doha seven hours later was too late for Kathmandu connection. Five-hour wait partly filled by free coffee, ample greasy rice and chewy chicken. Radisson now fond memory!

Monday 26 February. Flight to 'Katamandu' called at around 0100 to ensure arrival after dawn, because night landings are avoided. On a beautifully clear morning there were wonderful views of the Annapurna Range from the descent and approach, landing at 0900. Met by Philomon and Binod Rai from *Nepal Insight* with welcoming flower garlands, and taken to the Kathmandu Guest House (KGH). The road journey there was something different, for Nepalese drivers treat traffic rules as a challenge to be orchestrated by near-continuous use of their cacophonic horns. After dumping kit at KGH, met our bird guide, Hem Sagar Baral. Three jeeps took us NE from the city to a wooded mountain *Phulchowki* (Flower Hill) that rises to 2762m (9061ft). The road up leads to the airport radar on top and its Army guard post. Introductory birding followed by fine, if inexpensive (Rs400=£4.00) supper in *Rum Doodles*, then deep kip.

Tuesday 27 Feb. Early start (very early for breakfastless 'serious' birders), back to *Phulchowki* but via the *Godawari* Botanic Gardens. Magnificent curry lunch at home of our hosts Phil and Binod, introduced to their father (ex-British Army Gurkha WO2) and the rest of family, then back up the hill for more birding. Action replay supper in *Rum Doodles*, where locally produced wine (red and white) not really drinkable, but locally brewed 'San Miguel' beer very acceptable.

Wednesday 28 Feb. Up early again to Kathmandu Airport for internal flight (Buddha Air, honest) to *Biratnagar*, obtaining spectacular views en route of *Lhotse*, *Everest* and the holy mountain*Gauri Sanka*. A two-hour Land Rover drive to *Koshi Tappu Reserve*, which is tented, and has a separate mess tent and proper ablutions. The tents, on firm bases, are enclosed by a palm leaf roof, keeping them cool, and are lit by candles. Superb birding. The camp fishponds are overgrown. Excellent supper in mess tent, then callover, then bed.

Thursday 1 Mar. 'Serious' birders up early for Bitterns, but only one obliged (**Cinnamon**). Trip down the Kosi River in rowed inflatables; dry season, water running in shallow channels weaving between sandbars. Many birds. Sandbanks daytime retreat of wild **Water Buffalo**, the lone menacing bulls with huge horns. Couple of **'Muggers'** or **Indian Crocodiles**. Voyage over by lunchtime. After picnic walked up the bund, which was alive with migrants. It was back to supper in the camp pretty shattered!

Friday 2 Mar. Visit to Kosi Barrage very close to the Indian border; many hundreds of ducks. Good birding too en route. Delhi Belly diminished supper attendance by three.

Saturday 3 Mar. 'Serious' birders again up early for Bitterns, **Black Bittern** appearing. After breakfast headed for forest remnant that once covered all the Terai, this remnant still under severe threat from the collection of fodder and firewood. Group birding in forest difficult; those nearest the guide see more. Excellent birding, picnic lunch, then return to Koshi Tappu for re-run on the bund. BBQ 'Last Supper'.

Sunday 4 Mar. Late breakfast to maximize dawn birding before and at sunrise at peak bird activity. Last camp meal celebrated with Indian Breakfast of curried soup (Not ideal for the incapacitated), then back to *Biratnagar* for return flight to *Kathmandu*. Excellent mountain views again. At the KGH, chaos! AOS' booked rooms are occupied, by pax from cancelled Royal Nepal Airlines flight; airline makes no provision in such an event, and so 'nine points of the law' rules. Extra beds put into small rooms trades on Exped spirit overcoming embarrassment. Gerry Birch then leads quick cultural tour through the hotel to Durbar Square, passing Temple of the Living Goddess and the old Royal Palace. Some who stayed to shop got very lost on way back, being forced to take a trishaw to find the KGH.

Monday 5 Mar. Party splits, some opting for further cultural experience, 'serious' birders going with Hem for a road walk in the Royal Forest at *Sultanpur*, with good results. The hilltop is at 2098m, but the reported **Eagle Owl** fails to show. Buddhist temple on hilltop totally bedecked in prayer flags. Drove to *Soyambhu Nath* (Monkey Temple), a fantastic place with numerous bronze prayer wheels, hundreds of prayer flags and surrounded by fascinating old buildings, but like many other places, very run down. Evening farewell supper for Phil and Hem, presented them each with an AOS tie.

Tuesday 6 Mar. All up at 0600 (again!) to catch flight to Delhi, where farewell said to Dennis and Barbara Chandler and to Richard Seargent, who had to return to UK. Swiss Army knives previously confiscated by a security official and actually returned at Delhi airport. Reduced party met by guide and put on a coach for *Bharatpur*, with a planned lunch-break at *Swoyambhu Bird Reserve*, just outside Delhi, but our driver got very lost; some good birding once there.The driver succeeded in getting even more lost when we set off for *Bharatpur* and we wended our way along endless country roads and through rundown towns and villages, each of which had several speed humps in the main street. The journey seemed to go on interminably, ending at the *Forest Lodge* hotel at 2000. Very comfortable, cool rooms, good (curry) supper, and a very welcome, if expensive, cold beer.

Wednesday 7 Mar. Breakfast not 0730, so some saw dawn at 0600 and some birds. After breakfast, mounted trishaws and were pedalled into the Reserve. Very little water about, previous monsoon poor, so bird numbers, although well down, were concentrated in the areas kept wet by pumping. Also feeding on the reserve were **Nylghai Antelopes** and **Jackals** and a **Python** was found by the temple; the Holy Man got very agitated when people tried to disturb it. After lunch, by coach to *Agra* to visit the *Taj Mahal*, absolutely magnificent, the stone inlay of the tomb wonderful. Next, the *Red Fort*, the first seat of the ruling *Mogul Emperors*, and also amazingly luxurious. Not a birdless day, though. On the return, visited the marble factory, but beautiful inlaid boxes were expensive at about US$65 for the smallest. Back for a welcome bath after a long hot day.

Thursday 8 Mar. Trishaw back to the Reserve after breakfast, for more superb birds. Return to Rest House for curry lunch, the sole option, but in many varieties, and not too hot. Then off to a drier part of the Reserve, where there **Tiger** signs, but no **Tiger**, although a piece of **Spotted Deer** skin and a coughed-up fur-ball. Again, good birds. Very hot mid-afternoon, cool of dusk very welcome.

Friday 9 Mar. Morning trip successful walk round 'The Nursery', then into village. *Sohan Lal* then takes party to his home to meet his wife and family. Start of the festival of *Holi* during which people daub each other with powdered paint and throw coloured water at each other; our dècor was lurid pink paint, which didn't hinder the birding in scrub! After lunch Tim, David and Hilary trishawed away for **Yellow-wattled Plover**, found thanks to a local guide. The rest sensibly had a siesta. Later jaunt for another trip to temple area where the Holy Man was in full anointing mode with coloured paint. Impromptu trishaw race back because riders keen to get home for the *Holi* celebrations!

Saturday 10 Mar. Decided on 0500 start to avoid likely traffic disruption for *Holi* festivities, such as by villagers blocking the road. Driver more than keen to leave, reaching main highway quickly and remarkably arrive Delhi by 0845, in less than half the time of the outward leg. All coffee shops closed, so driven to the main airport hotel, the Centura, impressive with a massive central foyer overlooked by the internal balconies of four floors of rooms. **Dusky Crag Martins** nesting clearly also impressed. During coffee, arranged with switched-on Head Concierge for hotel bus to provide conducted tour of the city, at Rs300 each. First stop *Kutab Minar*, a victory memorial, but we declined the tourist entry fee of US$10 (40 times the local Rs10 rate) to go on to New Delhi to see with the imposing India Gate and the Presidential Palace, designed by Sir Edwin Lutyens. To the Imperial Hotel for lunch, the lovely gardens and impressively dressed waiters real throwbacks to the days of the Raj. Lastly to the impressive *Bahai* (Lotus Temple), a white marble modern building in the shape of a Lotus Flower. Being hot and tired, we decided against visiting a Buddhist Shrine and opted instead for a cup of tea. Supper in near-deserted hotel, all but two opting for early rest before midnight departure of UK flight. Ros and Hilary Nash form expedition rearguard to return to go trekking in Nepal.

Sunday 11 Mar. The Ros and Hilary show began with early rising after poor night, the internal foyer acting like an amplifying drum, then very early to airport to cope with expected overbooking custom. Not wishing to be stuck in Delhi. After an hour's wait, check-in opened, but aircraft not even full! This time, obscuring cloud prevented mountain views from even the best window seat. Met again by Phil and taken to KGH for pre-trek brief. Quick present-buying sortie (in particular *pashminas*) and also some trek clothing. Supper again steak at *Rum Doodles*.

Monday 12 Mar. Leisurely start, Phil not calling until 0830. Avoided KGH breakfast (expensive, not good) but excellent porridge over the road. Set off for *Chautara*, a road-head town and start of our trek. Last hour of drive along bumpy, dusty unsurfaced road. Arrived 1230 and began trek on another road stopping for lunch under a large sacred tree. Local houses in *Syauli* and *Yasa* villages beautifully built and photogenic, as are local children. Porters set up camp on a ridge with an excellent view over the hills. Excellent supper served in Mess Tent. **Grey Nightjars** called most of the night.

Tuesday 13 Mar. Woken at 0600 with a welcome cup of tea, but too chilly for bird activity, although **Yellow-billed Blue Magpie** cooperative. After breakfast, we continued to climb and met a couple of Norwegians, as our guide bought passes for the Langtang Reserve. They were going to the Holy Lake. Fairy Gentian and Rhododendrons mark start of botanical photography. Lunch stop at *Gopre*, a saddle near a religious school. Here we saw a **Brown Bullfinch**. After lunch steady climb up through a forest of Rhododendrons (*R. barbatum* (Blood red) and *arborium* (Pink)), Silver Firs and Giant Hemlock trees. Forest floor carpeted with blue primulas *(Primula edgewardii)*; beautiful orchid *(Pleionne humilis)* growing on a tree. Campsite, with campfire, in forest clearing much rooted up by wild boar. Supper cooked by chef *Sangy* was again superb. We saw the locals driving their cattle (Yak cross-breeds) home.

Wednesday 14 Mar. Day dawned fine with ground-frost but dash to photograph mountains before cloud and mist obscured them unsuccessful, because high contrast between dark trees and sunlit snow-capped peaks of *Gosaithan* and *Ganchempo* was too great for the film to handle. More success with *Chobabhumurey Range* in early morning dawn mist. Again breakfast gave wonderful views of *Dorje Lakpa* summit catching the sun. Set off to climb up steep *Choche Ridge*, guiltily allowing our Chief Guide *Sun Sing*, a *Tamang*, to carry tripod because a telescope is not much use on a trek. We saw a **Spotted Nutcracker** en route and admired the primulas, which were even better than yesterday. Lunch is in a high alp containing the shells of herdsmen's shelters. Burn two carrier bags of rubbish and several discarded flip-flops on the fire. 20th century packaging has invaded even here. After lunch reached ridge summit at 2750m (11,000ft) where there are three Chortans and set up camp close by. Some good birding. Storm brewed up, several claps of thunder, then snow and hail turning into blizzard after supper; Mess Tent almost blew away.

Thursday 15 Mar. After very cold night, awoke to two inches of snow, water bottles frozen solid. Hilary has upset stomach, rather low; frozen fingers render striking camp difficult. Brief window in cloud allowed close-up shot of *Dorje Lakpa* summit, before transit of snow-covered *Choche Ridge* ahead of porters. Saw **Himalayan Pheasant**, Nepal's National Bird. Not many other birds around. Feet rather wet from the snow (had only trail boots) but then descended into bushes of Rhododendron *companularum*, where primulas pushing out through the snow. Long tiring descent through fir forest to our campsite, on fallow terraced fields at *Handi Cola* on the banks of a stream feeding the *River Indrawatti*. Sun really warm, giving the chance to dry out wet clothes and shower. After sunset, it got cold very quickly, a reminder of the high altitude. Saw 4 Common Langur monkeys on approach to campsite.

Friday 16 Mar. Up early to a clear dawn, but attempted birding failed: too cold before sun's heat warm enough for bird activity. Also too cold to shave in comfort! Set off quite early, surprising Common Langur monkey in the open. Became a diversion for a group of women and girls on their way to collect fodder, by setting up the telescope and allowing them to look across a stream at their friends on a hill. Good birding. Passed through prosperous-looking *Rathane* village, with its own water-powered mill, micro hydroelectric scheme, and much new construction. Just below it, reached the *River Indrawatti* at *Dhap* village, photographed extensive rice terraces. Long walk to the *Tribani* campsite, reached at 1630 (the porters had made it by noon!) to be greeted by welcome cup of tea. Now much lower down at 1220m (4000ft), it was very much milder.

Saturday 17 Mar. Toll of 3 weeks of curry was a poor night, but at least a stroll to the wee tent was now not too cold. Up for dawn birdwatch, and some success. Walked downriver, reaching a hydroelectric dam under construction, where Phil's 4x4 took us bumpily back to Kathmandu, via *Melamchi Bazaar*. Booked into KGH for the last night. Shop, pack, then a final supper in *Rum Doodles*.

Sunday 18 Mar. Up at 0500 for final packing. Phil took us from KGH at 0545 straight through the centre of Kathmandu to the airport, where we said farewell. After the airport opened, checking in was the usual gauntlet of officials, passports being inspected by at least five different people. Upgrade not obtainable, but allowed Club Class seats for the leg to Doha. Very comfortable but no free drinks. After 2 hours at Doha, we had cattle class seats to Heathrow. Managed to read a Harry Potter (much easier than BTO News) en route. Arrived on time at 1730, eventually finding correct RV for our taxi home.

Table I
Expedition Black Eagle Bharatpur Trip List 2001

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**Army Ornithological Society: Nepal Trip List 2001**																	
2		***Exercise Black Eagle***																
3		Date	25	26	27	28	1	2	3	4	5	6	12	13	14	15	16	17
4	**Little Grebe**	*Tachybaptus ruficollis*				30	15	2	22	10								
5	**Great Crested Grebe**	*Podiceps cristatus*						6										
6	**Great Cormorant**	*Phalacrocorax carbo*				2	8	40	1	4								
7	**Little Cormorant**	*Phalacrocorax niger*				50	100	60	1	4								
8	**Darter**	*Anhinga melanogaster*					10		1	1								
9	**Spot-billed Pelican**	*Pelecanus philippensis*							1									
10	**Yellow Bittern**	*Ixobrychus sinensis*						1		1								
11	**Cinnamon Bittern**	*Ixobrychus cinnamomeus*				1	2	4	5	2								
12	**Black Bittern**	*Dupetor flavicollis*							1									
13	**Black-crowned Night Heron**	*Nycticorax nycticorax*				1	2	1	1	1								
14	**Little Heron**	*Butorides striatus*					4	2										
15	**Indian Pond Heron**	*Ardeola grayii*			3	150	100	200	70	25								
16	**Cattle Egret**	*Bubulcus ibis*		3	30	50	100	150	50	25							15	
17	**Little Egret**	*Egretta garzetta*				10	40	75	40	2								
18	**Intermediate Egret**	*Egretta intermedia*				1	35	50	12	2								
19	**Great Egret (Great White)**	*Egretta alba*				1	3	15	1									
20	**Grey Heron**	*Ardea cinerea*				6	3	6	6	2								
21	**Purple Heron**	*Ardea purpurea*					2	5	4	1								
22	**Asian Openbill**	*Anastomus oscitans*				15	18	200	20	20								
23	**Black Stork**	*Ciconia nigra*				3	1	12										
24	**Black-necked Stork**	*Ephippiorhynchus asiaticus*				5	5	1	3	1								
25	**Lesser Adjutant**	*Leptoptilos javanicus*				2	3	3	3									
26	**Black Ibis**	*Pseudibis papillosa*				2	19		1									
27	**Black-headed Ibis**	*Threskiornis melanocephalus*					48	40		6								
28	**Eurasian Spoonbill**	*Platalea leucorodia*					12	1										
29	**Lesser Whistling Duck**	*Dendrocygna javanica*						700										
30	**Greylag Goose**	*Anser anser*					1											
31	**Bar-headed Goose**	*Anser indicus*								9								
32	**Ruddy Shelduck**	*Tadorna ferruginea*					19	8	3									
33	**Eurasian Wigeon**	*Anas penelope*						40										
34	**Gadwall**	*Anas strepera*					1	40										
35	**Common Teal**	*Anas crecca*				4	400	500	4	1								
36	**Mallard**	*Anas platyrhynchos*					6	6	5	7								
37	**Northern Pintail**	*Anas acuta*						1000										
38	**Garganey**	*Anas querquedula*						20										
39	**Northern Shoveler**	*Anas clypeata*						20										
40	**Red-crested Pochard**	*Netta rufina*						12										
41	**Common Pochard**	*Aythya ferina*						40										
42	**Ferruginous Duck**	*Aythya nyroca*				60	12	40	114	60								
43	**Oriental (Crested) Honey-Buzzard**	*Pernis ptilorhynchus*						2	2									
44	**Black-shouldered Kite**	*Elanus caeruleus*				3		4	1	1								
45	**Black Kite**	*Milvus migrans*		500	500	17	1	6	1	8	520						1	2
46	**Oriental White-backed Vulture**	*Gyps bengalensis*				2	50sp	10	3	6								
47	**Long-billed Vulture**	*Gyps indicus*					3	3										
48	**Himalayan Griffon**	*Gyps himalayensis*													4			
49	**Eurasian Griffon Vulture**	*Gyps fulvus*				1	4	2		4	1							
50	**Black (Cinereous) Vulture**	*Aegypius monachus*						1		1								
51	**Short-toed Snake Eagle**	*Circaetus gallicus*					2	1	2									
52	**Crested Serpent Eagle**	*Spilornis cheela*		1					1		1		2			1		
53	**Eurasian Marsh Harrier**	*Circus aeruginosus*						2										
54	**Hen Harrier**	*Circus cyaneus*				1	2	1	2	1					1m			
55	**Pied Harrier**	*Circus melanoleucus*				5	8	1	6									
56	**Pallid Harrier**	*Circus macrourus*					1m											
57	**Goshawk**	*Accipiter gentilis*								1								
58	**Besra**	*Accipiter virgatus*																1m
59	**Sparrowhawk**	*Accipiter nisus*			2								2					
60	**Shikra**	*Accipiter badius*				1	3	1	3	1	1							
61	**White-eyed Buzzard**	*Butastur teesa*				1	3	1	1	1								
62	**Common Buzzard**	*Buteo buteo*				1												
63	**Long-legged Buzzard**	*Buteo rufinus*		2					7	2	1							1
64	**Black Eagle**	*Ictinaetus malayensis*		1	1												1	
65	**Greater Spotted Eagle**	*Aquila clanga*			1	1			1									
66	**Steppe Eagle**	*Aquila nipalensis*		1	3						4							
67	**Booted Eagle**	*Hieraaetus pennatus*									1							
68	**Mountain Hawk Eagle**	*Spizaetus nipalensis*		1														
69	**Osprey**	*Pandion haliaetus*				2	6	2	2	3								
70	**Collared Falconet**	*Microhierax caerulescens*							1									
71	**Common Kestrel**	*Falco tinnunculus*			3	2	1f	4	4								2	
72	**Merlin**	*Falco columbarius*								1	1							
73	**Hobby**	*Falco subbuteo*							1									
74	**Saker**	*Falco Cherrug*							1									
75	**Peregrine Falcon**	*Falco peregrinus*			1		2				1							
76	**Swamp Francolin**	*Francolinus gularis*					2h	4	2									
77	**Himalayan Monal**	*Lophophorus impejanus*													1m	2f		
78	**Red Junglefowl**	*Gallus gallus*			3													

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
3		Date	25	26	27	28	1	2	3	4	5	6	12	13	14	15	16	17
79	**Kalij Pheasant**	*Lophura leucomelana*									1?							
80	**Baillon's Crake**	*Porzana pusilla*							3	1								
81	**Ruddy-breasted Crake**	*Porzana fusca*				2	6	5		3								
82	**White-breasted Waterhen**	*Amaurornis phoenicurus*				8	25	10	22	10								
83	**Common Moorhen**	*Gallinula chloropus*				30	60	40	60	60								
84	**Purple Swamphen**	*Porphyrio porphyrio*				3	2	9	2	2								
85	**Coot**	*Fulica atra*				4	4	6	4	4								
86	**Pheasant-tailed Jacana**	*Hydrophasianus chirurgus*				15	1	4	1	1								
87	**Bronze-winged Jacana**	*Metopidius indicus*					9	12	8	6								
88	**Painted Snipe**	*Rostratula benghalensis*					1	4	3	3								
89	**Stone-curlew**	*Burhinus oedicnemus*				1				2								
90	**Little Pratincole**	*Glareola lactea*					2000			3								
91	**Little Ringed Plover**	*Charadrius dubius*				1	9	1		2	5							
92	**Kentish Plover**	*Charadrius alexandrinus*					12											
93	**River Lapwing**	*Hoplopterus duvaucelii*							2									
94	**Red-wattled Lapwing**	*Hoplopterus indicus*				6	8	12	4	16								
95	**Grey-headed Plover**	*Hoplopterus cinereus*						2										
96	**Lapwing**	*Vanellus vanellus*						34										
97	**Temminck's Stint**	*Calidris temminckii*					3			6								
98	**Pintail Snipe**	*Gallinago stenura*				1	2		1	1								
99	**Woodcock**	*Scolopax rusticola*										1						
100	**Black-tailed Godwit**	*Limosa limosa*									1							
101	**Eurasian Curlew**	*Numenius arquata*							10									
102	**Common Greenshank**	*Tringa nebularia*				1	52			4	1							
103	**Green Sandpiper**	*Tringa ochropus*				3	1				1							
104	**Wood Sandpiper**	*Tringa glareola*					1											
105	**Common Sandpiper**	*Actitis hypoleucos*				1	5		1	1								
106	**Great Black-headed Gull**	*Larus ichthyaetus*					1											
107	**Black-headed Gull**	*Larus ridibundus*							12									
108	**River Tern**	*Sterna aurantia*				2	5		1	1	1							
109	**Black-bellied Tern**	*Sterna acuticauda*					3											
110	**Little Tern**	*Sterna albifrons*					4											
111	**Common Tern**	*Chlidonias hirundo*					1?											
112	**Rock Pigeon**	*Columba livia*		50	50	50	10	30	30	20	30							1
113	**Snow Pigeon**	*Columba leuconota*															40+	
114	**Collared Dove**	*Streptopelia decaocto*				10	3		20	30	12							
115	**Red Turtle Dove**	*Streptopelia tranquebarica*				2					6							
116	**Oriental Turtle Dove**	*Streptopelia orientalis*		1	6												20	3
117	**Spotted Dove**	*Streptopelia chinensis*				40	8		40	40	20							
118	**Emerald Dove**	*Chalcophaps indica*								1								
119	**Yellow-footed Green Pigeon**	*Treron phoenicoptera*							2									
120	**Rose-ringed Parakeet**	*Psittacula krameri*			6	16	6	10	10	7								
121	**Plum-headed Parakeet**	*Psittacula cyanocephala*								11								
122	**Large Hawk-Cuckoo**	*Hierococcyx sparverioides*								1								
123	**Common Hawk-Cuckoo**	*Hierococcyx varius*			1h	1	2	2										
124	**Sirkeer Malkoha**	*Phaenicophaeus leschenaultii*								2								
125	**Greater Coucal**	*Centropus sinensis*				3	14	6	4	2								
126	**Lesser Coucal**	*Centropus bengalensis*					1		1									
127	**Jungle Owlet**	*Glaucidium radiatum*							1	1								
128	**Asian Barred Owlet**	*Glaucidium cuculoides*									1							2
129	**Brown Hawk Owl**	*Ninox scutulata*					1h		2									
130	**Spotted Owlet (Little Owl)**	*Athene brama*				1h	4	2h	6	1								
131	**Grey Nightjar**	*Caprimulgus indicus*											2h	1		h		
132	**White-rumped Needletail**	*Zoonavena sylvatica*							6									
133	**Little Swift**	*Apus affinis*				20												
134	**House Swift**	*Apus nipalensis*		200	200				3									
135	**Crested Tree Swift**	*Hemiprocne coronata*				15				4								
136	**Asian Palm Swift**	*Cypsiurus balasiensis*				10												
137	**White- breasted Kingfisher**	*Halcyon smyrnensis*		4	2	6	8	40	10	3								1
138	**Stork-billed Kingfisher**	*Halcyon capensis*			1	3	4	1	4	2								
139	**Common Kingfisher**	*Alcedo atthis*				4	3	4	4	4								
140	**Crested Kingfisher**	*Megaceryle lugubris*																2
141	**Pied Kingfisher**	*Ceryle rudis*				6	20	12	8	6								
142	**Green Bee-eater**	*Merops orientalis*				25	50	14	20	20								
143	**Blue-tailed Bee-eater**	*Merops philippinus*							2									
144	**Chestnut-headed Bee-eater**	*Merops leschenaulti*					2				1							
145	**Indian Roller**	*Coracias benghalensis*				6	3	4	1	1								
146	**Hoopoe**	*Upupa epops*				5	3	5	4	6								
147	**Oriental Pied Hornbill**	*Anthracoceros albirostris*				1												
148	**Great Barbet**	*Megalaima virens*			1m						6						2	
149	**Blue-throated Barbet**	*Megalaima asiatica*					3		1		4						1	
150	**Coppersmith Barbet**	*Megalaima haemacephala*				1m	1m	2	4	2								
151	**Eurasian Wryneck**	*Jynx torquilla*				1		2		1								
152	**Rufous Woodpecker**	*Celeus brachyurus*						1	1									
153	**Speckled Piculet**	*Picumnus innominatus*									1							
154	**Lesser Yellow-naped Woodpecker**	*Picus chlorolophus*							2		2							
155	**Greater Yellow-naped W'pecker**	*Picus flavinucha*									2							
156	**Grey-headed Woodpecker**	*Picus canus*			1m													

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3		Date	25	26	27	28	1	2	3	4	5	6	12	13	14	15	16	17
157	**Black-rumped Flameback**	*Dinopium benghalense*					3	4	3	2								
158	**Greater Flameback**	*Chrysocolaptes lucidus*							2									
159	**Rufous-bellied Woodpecker**	*Dendrocopos hyperythrus*		1														
160	**Darjeeling Pied Woodpecker**	*Dendrocopos darjellensis*		1														
161	**Fulvous-breasted Pied W'pecker**	*Dendrocopos macei*							1		1							
162	**Rufous-winged Bushlark**	*Mirafra erythroptera assamica*					1	1	2	3								
163	**Ashy-crowned Finch Lark**	*Eremopterix grisea*						6	2									
164	**Greater Short-toed Lark**	*Calandrella brachydactyla*				21	6	20	1									
165	**Sand Lark**	*Calendrella raytal*					12		2	1								
166	**Oriental Skylark**	*Alauda gulgula*					2		1									
167	**Plain Martin**	*Riparia paludicola*						3										
168	**Eurasian Crag Martin**	*Hirundo rupestris*											15				20	
169	**Barn Swallow**	*Hirundo rustica*		8	100	60	3	1	3		4							
170	**Red-rumped Swallow**	*Hirundo daurica*		3	1	4											30	
171	**Wire-tailed Swallow**	*Hirundo smithii*				12												4
172	**Nepal House Martin**	*Delichon nipalensis*			1?								20					
173	**Richard's Pipit**	*Anthus richardi*			1			1	1	2								
174	**Paddyfield Pipit**	*Anthus rufulus*					2	6		2								
175	**Olive-backed Pipit**	*Anthus hodgsoni*			1		7	6	6	3								
176	**Rosy Pipit**	*Anthus roseatus*			1	15	41	2	1									
177	**Tree Pipit**	*Anthus trivialis*				1												
178	**Red-throated Pipit**	*Anthus cervinus*				5												
179	**Citrine Wagtail**	*Motacilla citreola*				5			1	1								
180	**Grey Wagtail**	*Motacilla cinerea*			1	1											1	2
181	**White Wagtail**	*Motacilla alba*		1	6	20	12		6	20								
182	**White Wagtail *ssp***	*Motacilla a. alboides*				6	2	2										
183	**White-browed Wagtail**	*Motacilla maderaspatensis*				1	2			1								
184	**Common Woodshrike**	*Tephrodornis pondicerianus*							2									
185	**Large Woodshrike**	*Tephrodornis gularis*					2		6									
186	**Black-winged Cuckoo-Shrike**	*Coracina melanoptera*							1									
187	**Large Cuckoo-Shrike**	*Coracina macei*						5		2	2							
188	**Scarlet Minivet**	*Pericrocotus flammeus*							4		10		2pr					
189	**Long-tailed Minivet**	*Pericrocotus ethologus*		6	6													
190	**Short-billed Minivet**	*Pericrocotus brevirostris*		2														
191	**Striated Bulbul**	*Pycnonotus striatus*			3													
192	**Black-crested Bulbul**	*Pycnonotus melanicterus*					4											
193	**Red-whiskered Bulbul**	*Pycnonotus jocosus*				3	1	1	4	1								
194	**White-cheeked (Himalayan) Bulbul**	*Pycnonotus leucogenys*			1								2				1	
195	**Red-vented Bulbul**	*Pycnonotus cafer*		4	12	30	55	100	100	30	50							
196	**Mountain Bulbul**	*Hypsipetes mcclellandii*			3													
197	**Black Bulbul**	*Hypsipetes madagascariensis*		30	20						20		2				10	
198	**Common Iora**	*Aegithina tiphia*				1	1	1	1									
199	**[Brown Dipper]**	*Cinclus pallasii*															1?	
200	**Golden-fronted Leafbird**	*Chloropsis aurifrons*							1									
201	**Orange-bellied Leafbird**	*Chloropsis hardwickii*		1														
202	**Alpine Accentor**	*Prunella collaris*													7			
203	**Brown Accentor**	*Prunella fulvescens*														1		
204	**Rufous-breasted Accentor**	*Prunella strophiata*		1														
205	**Siberian Rubythroat**	*Luscinia calliope*					6	2	2	1								
206	**Bluethroat**	*Luscinia svecica*					4	2	2	4								
207	**Asian Magpie-Robin**	*Copsychus saularis*		1	1	1	12	1	4	2	2							
208	**White-rumped Shama**	*Copsychus malabaricus*							2h									
209	**White-tailed Robin**	*Myiomela leucura*									1							
210	**Blue-fronted Redstart**	*Phoenicurus frontalis*															1pr	
211	**White-capped Water Redstart**	*Chaimarrornis leucocephalus*															4	
212	**Black Redstart**	*Phoenicurus ochruros*				2		2	6	1								
213	**Hodgson's Redstart**	*Phoenicurus hodgsoni*			1													
214	**Plumbeous Redstart**	*Rhyacornis fuliginosus*			2												10	2
215	**Common Stonechat**	*Saxicola torquata indica*		1	4	12	6	6	10	1				3m				
216	**Pied Bushchat**	*Saxicola caprata*																1
217	**Grey Bushchat**	*Saxicola ferrea*		1	2													
218	**Indian Robin**	*Saxicoloides fulicata*			2h													
219	**Blue Rock Thrush**	*Monticola solitarius*				1m	1m	1	1	1							2m	
220	**Blue Whistling Thrush**	*Myophonus caeruleus*			3						6						6	6
221	**Scaly Thrush**	*Zoothera dauma*			2						1							
222	**Orange-headed Thrush**	*Zoothera citrina*							1									
223	**Tickell's Thrush**	*Turdus unicolor*												1				
224	**White-collared Blackbird**	*Turdus albocinctus*												3				
225	**Grey-winged Blackbird**	*Turdus boulboul*			2				1f		1		2					
226	**Dark-throated Thrush**	*Turdus ruficollis atrogularis*					1	3	8		3							
227	**Little Forktail**	*Enicurus scouleri*															3	
228	**Spotted Forktail**	*Enicurus maculatus*			2						2							
229	**Aberrant Bush Warbler**	*Cettia flavolivacea*					2											
230	**Grey-sided Bush Warbler**	*Cettia brunnifrons*					1											
231	**Zitting (Fan Tailed)Cisticola**	*Cisticola juncidis*				1h	1	1										
232	**Plain Prinia**	*Prinia inornata*				1h		2	2	1								
233	**Common Tailorbird**	*Orthotomus sutorius*					6	6	2	1	6							
234	**Bristled Grassbird**	*Chaetornis striatus*					2											

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3		Date	25	26	27	28	1	2	3	4	5	6	12	13	14	15	16	17
235	**Blyth's Reed Warbler**	*Acrocephalus dumetorum*					2	2	4	3								
236	**Clamorous Reed Warbler**	*Acrocephalus stentoreus*				3	3	1		1								
237	**Thick-billed Warbler**	*Acrocephalus aedon*			1						2							
238	**Golden-spectacled Warbler**	*Seicercus burkii (whistleri)*		1							2							
239	**Chestnut-crowned Warbler**	*Seicercus castaniceps*		1							3							
240	**Grey-hooded Warbler**	*Seicercus xanthoschistos*		12	20						20			4			10+	
241	**Black-faced Warbler**	*Abroscopus schisticeps*		12	3													
242	**Blyth's Leaf Warbler**	*Phylloscopus reguloides*			1				3		20							
243	**Greenish Warbler**	*Phylloscopus trochiloides*				3	12	2			5							
244	**Buff-barred Leaf Warbler**	*Phylloscopus pulcher*		50	50						4				2		20+	
245	**Grey-faced Leaf Warbler**	*Phylloscopus maculipennis*									1							
246	**Lemon-rumped Warbler**	*Phylloscopus chloronotus*			3						6							1
247	**Hume's Warbler**	*Phylloscopus humei*				1	2	1			1							
248	**Dusky Warbler**	*Phylloscopus fuscatus*					4	4	4	4								
249	**Smoky Warbler**	*Phylloscopus fuligiventer*					1		1	1								
250	**Tickell's Warbler**	*Phylloscopus affinis*				1	1											
251	**Chiffchaff**	*Phylloscopus collybita tristis*				6	6	1	6	12								
252	**Verditer Flycatcher**	*Muscicapa thalassina*			1		2	1	2	1	1			1			3	
253	**Asian Sooty Flycatcher**	*Muscicapa sibirica*																
254	**Ferruginous Flycatcher**	*Muscicapa ferruginea*											1					
255	**Slaty-blue Flycatcher**	*Ficedula hodgsonii*									1							
256	**Orange-gorgeted Flycatcher**	*Ficedula strophiata*		1	1						1							
257	**Red-breasted Flycatcher**	*Ficedula parva albicilla*				5	4	2	2	1				1				
258	**Little Pied Flycatcher**	*Ficedula westermanni*												1pr		1m		
259	**Grey-headed Canary Flycatcher**	*Culicicapa ceylonensis*			1						10							
260	**Pale-blue Flycatcher**	*Cyornis unicolor*									1f							
261	**Yellow-bellied Fantail**	*Rhipidura hypoxantha*			3						3							
262	**White-browed Fantail**	*Rhipidura albicollis*					1											
263	**White-throated Fantail**	*Rhipidura albicollis*			1	3	4	2	2									
264	**Puff-throated Babbler**	*Pellorneum ruficeps*									3							
265	**Abbott's Babbler**	*Trichastoma abbotti*							1									
266	**Rusty-cheeked Scimitar-Babbler**	*Pomatorhinus erythrogenys*			1h						6							
267	**Black-chinned Babbler**	*Stachyris pyrrhops*			12													
268	**Striped Tit-Babbler**	*Macronous gularis*							1									
269	**Striated Babbler**	*Turdoides earlei*					6	12		3								
270	**Jungle Babbler**	*Turdoides striatus*				8	7	7	10	14								
271	**White-throated Laughingthrush**	*Garrulax albogularis*			15													
272	**White-crested Laughingthrush**	*Garrulax leucolophus*								30								
273	**Striated Laughingthrush**	*Garrulax striatus*			1													
274	**Rufous-chinned Laugh'thrush**	*Garrulax rufogularis*		4										3				
275	**Streaked Laughingthrush**	*Garrulax lineatus*		1														
276	**Chestnut-crowned Laughingthrush**	*Garrulax erythrocephalus*		8	1													
277	**Black-faced Laughingthrush**	*Garrulax affinis*												6	2			
278	**Red-billed Leiothrix**	*Leiothrix lutea*			2													
279	**White-browed Shrike-Babbler**	*Pteruthius flaviscapis*			1													
280	**Chestnut-tailed Minla**	*Minla strigula*		6														
281	**White-browed Fulvetta**	*Alcippe vinipectus*		10														
282	**Nepal Fulvetta**	*Alcippe nipalensis*		1														
283	**Rufous Sibia**	*Heterophasia capistrata*		30	12										1			
284	**Whiskered Yuhina**	*Yuhina flavicollis*		6	5									15		2		
285	**Stripe-throated Yuhina**	*Yuhina gularis*		3											2+	1		
286	**Rufous-vented Yuhina**	*Yuhina occipitalis*												1+	8	c10		
287	**Black-throated Parrotbill**	*Paradoxornis atrosuperciliaris*			40													
288	**Winter Wren**	*Troglodytes troglodytes nipalensis*													1	2		
289	**Black-throated Tit**	*Aegithalos concinnus*		3	12						10						1	
290	**Yellow-browed Tit**	*Sylviparus modestus*			2													
291	**Rufous-vented Tit**	*Parus rubidiventris*													2	2?		
292	**Coal Tit**	*Parus ater*													1			
293	**Grey-crested Tit**	*Parus dichrous*													1			
294	**Great Tit**	*Parus major*									2				1			
295	**Green-backed Tit**	*Parus monticolus*		12														
296	**Black-lored Tit**	*Parus xanthogenys*		6	20						10		2				1	
297	**Velvet-fronted Nuthatch**	*Sitta frontalis*							1		1							
298	**White-tailed Nuthatch**	*Sitta himalayensis*		6	1													
299	**Chestnut-bellied Nuthatch**	*Sitta castanea*			3				2								1	
300	**Wallcreeper**	*Tichodroma muraria*															1	2
301	**[Eurasian Treecreeper]**	*Certhia familiaris*														1?		
302	**Purple Sunbird**	*Nectarinia asiatica*								1								
303	**Mrs Gould's Sunbird**	*Aethopyga gouldiae*														1m	2	
304	**Green-tailed Sunbird**	*Aethopyga nipalensis*		6	2													
305	**Black-throated Sunbird**	*Aethopyga saturata*					12											
306	**Fire-tailed Sunbird**	*Aethopyga ignicauda*		25														
307	**Crimson Sunbird**	*Aethopyga siparaja*		25										1	1			
308	**Fire-breasted Flowerpecker**	*Dicaeum ignipectus*			3						4							
309	**Yellow-bellied Flowerpecker**	*Dicaeum melanoxanthum*			1													
310	**Oriental White-eye**	*Zosterops palpebrosus*			2		2				40							
311	**Maroon Oriole**	*Oriolus traillii*			2						2							
312	**Black-hooded Oriole**	*Oriolus xanthornus*				1	4	1	8	6								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
3		Date	25	26	27	28	1	2	3	4	5	6	12	13	14	15	16	17
313	**Golden Oriole**	*Oriolus oriolus*				1												
314	**Slender-billed Oriole**	*Oriolus tenuirostris*						1		1								
315	**Brown Shrike**	*Lanius cristatus*				30	4	6	10	2								
316	**Long-tailed Shrike**	*Lanius schach*		3	1	3	2	3	7	6								1
317	**Grey-backed Shrike**	*Lanius tephronotus*			1		1		3		1			1				
318	**Black Drongo**	*Dicrurus macrocercus*		2	2	117	150	110	100	100	10							
319	**Ashy Drongo**	*Dicrurus leucophaeus*						1										
320	**White-bellied Drongo**	*Dicrurus caerulescens*							1									
321	**Bronzed Drongo**	*Dicrurus aeneus*		2	1				20									
322	**Spangled Drongo**	*Dicrurus hottentottus*							4									6
323	**Greater Racket-tailed Drongo**	*Dicrurus paradiseus*							4									
324	**Ashy Woodswallow**	*Artamus fuscus*				1	1	24										
325	**Acorn Jay**	*Garrulus glandarius*			4													
326	**Yellow-billed Blue Magpie**	*Urocissa flavirostris*											1	2				
327	**Red-billed Blue Magpie**	*Urocissa erythrorhyncha*									10							10
328	**Rufous Treepie**	*Dendrocitta vagabunda*				4	12	12	3	6	2							
329	**Grey Treepie**	*Dendrocitta formosae*									10			1				4+
330	**Spotted Nutcracker**	*Nucifraga caryocatactes*													1			
331	**House Crow**	*Corvus splendens*		200	200	150	16	100	50	50	100							
332	**Jungle Crow**	*Corvus macrorhynchus*		30	30	4	12	6	1	2	4		10	20				
333	**Chestnut-tailed Starling**	*Sturnus malabaricus*					4	12	4	1								
334	**Asian Pied Starling**	*Sturnus contra*				50	200	300	150	40								
335	**Common Mynah**	*Acridotheres tristis*		4	150	300	50	20	50	50	8						10	
336	**Bank Mynah**	*Acridotheres ginginianus*						2										
337	**Jungle Mynah**	*Acridotheres fuscus*		5	50	20	10	20	20	4	40							
338	**Hill Mynah**	*Gracula religiosa*							1H									
339	**House Sparrow**	*Passer domesticus*		30	40	40	1	2	40	20	20							
340	**Cinnamon Sparrow**	*Passer rutilans*									1							
341	**Eurasian Tree Sparrow**	*Passer montanus*			12	8					2							
342	**Scaly-breasted Munia**	*Lonchura punctulata*				20	20		20									
343	**Yellow-breasted Greenfinch**	*Carduelis spinoides*															c30	
344	**Dark-breasted Rosefinch**	*Carpodacus nipalensis*		35														
345	**Scarlet Rosefinch**	*Carpodacus erythrinus*			1													
346	**Brown Bullfinch**	*Pyrrhula nipalensis*												1				
347	**Spot-Winged Grosbeak**	*Mycerobas melanozanthos*			20													
348	**Gold-naped Finch**	*Pyrrhoplectes epauletta*															1f	
349	**Crested Bunting**	*Melophus lathami*							6									1
350	**Rock Bunting**	*Emberiza cia*												20+				
351	**Black-faced Bunting**	*Emberiza spodocephala*							6									
352																		
353	Totals																	
354	The order follows those used in Inskipp C. "A Birdwatcher' Guide to Nepal".																	
355																		
356	Some larger Mammals																	
357	Rhesus Macaque	*Macaca mulatta*							5									
358	Common Langur															4		
359	Grey Langur	*Presbytis entellus*							20									
360	Golden Jackal	*Canis aureus*					h	h	h									
361	Red Fox	*Vulpes vulpes*						h										
362	Indian Grey Mongoose	*Herpestes edwardsii*				1	2	3	2	6								
363	Wild Water Buffalo	*Bubalus arnee*					7	12		25								
364	Northern Palm Squirrel	*Funambulus pennanti*							18									
365	Orange-bellied Squirrel			2	1													
366	Fruit Rat			20	20													
367	Great Black Squirrel								2									
368	Flying Fox			4			3											
369	Bat *sp*	*Rhinocephalus sp*					1	1										
370	Bat sp	***Pipistrelle sp***						1										
371																		
372	Reptiles																	
373	Mugger Crocodile	*Crocodylus palustris*					2											
374	Terrapin sp						1											
375	Copyright AOS 2000																	

Table 2
Nepal Trip List 2001 Exercise Black Eagle

	A	B	C	D	E	F	G
1	*Army Ornithological Society* **Bharatpur Trip List 2001 Exercise Black Eagle**						
2			06-Mar	07-Mar	08-Mar	09-Mar	10-Mar
3	*Tachybaptus ruficollis*	**Little Grebe**	8				
4	*Pelecanus onocrotalus*	**Great White Pelican**		8		1	
5	*Phalacrocorax fuscicollis*	**Indian Cormorant**		2		3	
6	*Phalacrocorax niger*	**Little Cormorant**	15	40	7	12	
7	*Anhinga melanogaster*	**Oriental Darter**		6	6	6	
8	*Nycticorax nycticorax*	**Black-crowned Night Heron**		8	9	13	
9	*Ardea cinerea*	**Grey Heron**	4	12	11	24	
10	*Ardea purpurea*	**Purple Heron**	1		1	1	
11	*Ardeola grayii*	**Indian Pond-Heron**		20	7	8	
12	*Butoridesstriatus*	**Little Green Heron**		2			
13	*Bubulcus ibis*	**Cattle Egret**		200	3	12	
14	*Casmerodius albus*	**Great Egret**	1	20	9	2	
15	*Egretta garzetta*	**Little Egret**	5	16	6	12	
16	*Ixobrychus flavicollis*	**Black Bittern**			1		
17	*Mesophoyx intermedia*	**Intermediate Egret**	5	3	3	6	
18	*Phoenicopterus ruber*	**Greater Flamingo**	16				
19	*Ciconia episcopus*	**Woolly-necked Stork**		2	2	1	
20	*Ephippiorhynchus asiaticus*	**Black-necked Stork**	2	8	8	8	
21	*Mycteria leucocephala*	**Painted Stork**		2	1	1	
22	*Platalea leucorodia*	**Eurasian Spoonbill**	1	40	70	64	
23	*Pseudibis papillosa*	**Red-naped Ibis**		3			
24	*Threskiornis melanocephalus*	**Black-headed Ibis**		30	10	40	
25	*Anas acuta*	**Northern Pintail**	120	3	1	4	
26	*Anas clypeata*	**Northern Shoveler**	200	300	500	500	
27	*Anas crecca*	**Common Teal**	120	40	300	400	
28	*Anas penelope*	**Eurasian Wigeon**	50	12	13	6	
29	*Anas platyrhynchos*	**Mallard**	50				
30	*Anas poecilorhyncha*	**Spot-billed Duck**	20	40	45	30	
31	*Anas querquedula*	**Garganey**			1	6	
32	*Anas strepera*	**Gadwall**	50	2	3	4	
33	*Anser anser*	**Greylag Goose**		14	26	20	
34	*Anser indicus*	**Bar-headed Goose**		156	280	350	
35	*Tadorna ferruginea*	**Ruddy Sheduck**		14	18	24	
36	*Sarkidiornis melanotos*	**Comb Duck**				7	
37	*Dendrocygna javanica*	**Lesser Whistling Duck**			3		
38	*Accipiter badius*	**Shikra**	2	2	1		
39	*Accipiter nisus*	**Eurasian Sparrowhawk**	1		3		
40	*Aquila clanga*	**Greater Spotted Eagle**		6	9	8	
41	*Aquila heliaca*	**Imperial Eagle**		2	2	2	
42	*Aquila pomarina*	**Lesser Spotted Eagle**			2	1	
43	*Aquila nipalensis*	**Steppe Eagle**	1	2	6	4	
44	*Circaetus gallicus*	**Short-toed Snake-Eagle**		1		1	
45	*Circus aeruginosus*	**Western Marsh Harrier**	1	1		1	
46	*Circus cyaneus*	**Hen Harrier**				1	
47	*Gyps bengalensis*	**White-rumped Vulture**		2		5	
48	*Gyps fulvus*	**Eurasian Griffon**		1			
49	*Gyps indicus*	**Long-billed Vulture**			2	2	
50	*Hieraaetus fasciatus*	**Bonelli's Eagle**				1	
51	*Hieraaetus pennatus*	**Booted Eagle**	1		1		
52	*Milvus migrans*	**Black Kite**	40				100
53	*Elanus axillaris*	**Black-shouldered Kite**	7	1	1		
54	*Haliastur indus*	**Brahminy Kite**			1	1	
55	*Neophron percnopterus*	**Egyptian Vulture**	3	33	9	12	
56	*Pernis ptilorhyncus*	**Oriental Honey-buzzard**				2	
57	*Sarcogyps calvus*	**Red-headed Vulture**		2	2		
58	*Falco chicquera*	**Red-necked Falcon**			1		
59	*Falco peregrinus*	**Peregrine Falcon**			1	2	
60	*Falco tinnunculus*	**Common Kestrel**	4	2	5	2	
61	*Falco jugger*	**Luggar Falcon**				1	
62	*Francolinus pondicerianus*	**Grey Francolin**	4	7	6	12	
63	*Pavc cristatus*	**Indian Peafowl**	23	1		6	
64	*Turnix*	**Button-quail sp**			1	1	
65	*Grus antigone*	**Sarus Crane**	6	15	45	34	
66	*Grus grus*	**Common Crane**		57	132	50	
67	*Amaurornis phoenicurus*	**White-breasted Waterhen**	2	12	22	20	
68	*Fulica atra*	**Common Coot**		6	11	6	
69	*Gallinula chloropus*	**Common Moorhen**	3	35	16	30	

	A	B	C	D	E	F	G
2			06-Mar	07-Mar	08-Mar	09-Mar	10-Mar
70	*Porphyrio porphyrio*	**Purple Swamphen**	30	[illegible]	[illegible]	[illegible]	
71	*Metopidius indicus*	**Bronze-winged Jacana**		2	6	4	
72	*Charadrius alexandrinus*	**Kentish Plover**				[illegible]	
73	*Charadrius dubius*	**Little Ringed Plover**		1	[illegible]	[illegible]	
74	*Vanellus gregarius*	**Sociable Lapwing**			1		
75	*Vanellus indicus*	**Red-wattled Lapwing**	60	50	60	[illegible]	
76	*Vanellus leucurus*	**White-tailed Lapwing**		12	[illegible]	[illegible]	
77	*Vanellus duvaucelii*	**River Lapwing**		1			
78	*Vanellus malabaricus*	**Yellow-wattled Lapwing**				4	
79	*Limosa limosa*	**Black-tailed Godwit**	7	1	4	[illegible]	
80	*Tringa erythropus*	**Spotted Redshank**		2	5	[illegible]	
81	*Tringa glareola*	**Wood Sandpiper**	3	3	8	[illegible]	
82	*Tringa hypoleucos*	**Common Sandpiper**		2	2	2	
83	*Tringa nebularia*	**Common Greenshank**	14	8	2	6	
84	*Tringa ochropus*	**Green Sandpiper**	5	1	1	[illegible]	
85	*Tringa totanus*	**Common Redshank**	30	6	[illegible]	[illegible]	
86	*Philomachus pugnax*	**Ruff**	13	30	[illegible]	1	
87	*Calidris minuta*	**Little Stint**				[illegible]	
88	*Calidris temminckii*	**Temminck's Stint**		6	[illegible]	[illegible]	
89	*Gallinago gallinago*	**Common Snipe**		1	[illegible]	6	
90	*Recurvirostra avosetta*	**Pied Avocet**	1				
91	*Himatopus himatopus*	**Black-winged Stilt**	200	100	17	20	
92	*Burhinus oedicnemus*	**Eurasian Thick-knee**				[illegible]	
93	*Glareola lactea*	**Small Pratincole**				1	
94	*Larus ridibundus*	**Black-headed Gull**					[illegible]
95	*Sterna aurantia*	**River Tern**		2	1	1	1
96	*Pterocles exustus*	**Chestnut-bellied Sandgrouse**		14			
97	*Columba livia*	**Rock Pigeon**	100	4	4	4	
98	*Streptopelia chinensis*	**Spotted Dove**			1	1	
99	*Streptopelia decaocto*	**Eurasian Collared-Dove**	200	[illegible]	[illegible]	[illegible]	
100	*Streptopelia orientalis*	**Oriental Turtle-Dove**	20				
101	*Streptopelia senegalensis*	**Laughing Dove**		[illegible]	[illegible]	[illegible]	
102	*Streptopelia tranquebarica*	**Red Collared-Dove**	4	11	1	1	
103	*Treron phoenicoptera*	**Yellow-footed Green-Pigeon**			6		
104	*Psittacula krameri*	**Rose-ringed Parakeet**	300	200	[illegible]	[illegible]	
105	*Psittacula eupatria*	**Alexandrine Parakeet**		2			
106	*Eudynamys scolopacea*	**Asian Koel**	1				
107	*Centropus sinensis*	**Greater Coucal**		10	20	[illegible]	
108	*Athene brama*	**Spotted Owlet**	2			1	
109	*Bubo coromandus*	**Dusky Eagle-Owl**		2			
110	*Otus bakkamoena*	**Collared Scops-Owl**		1	4		
111	*Otus sunia*	**Oriental Scops-Owl**			1		
112	*Caprimulgus affinis*	**Savanna Nightjar**			2		
113	*Apus nipalensis*	**House Swift**	50	220	15	2	[illegible]
114	*Alcedo atthis*	**Common Kingfisher**		1	1		
115	*Ceryle rudis*	**Pied Kingfisher**		8	8	6	
116	*Halcyon smyrnensis*	**White-throated Kingfisher**	20	12	16	[illegible]	1
117	*Merops orientalis*	**Little Green Bee-eater**	100	15	6	14	[illegible]
118	*Coracias benghalensis*	**Indian Roller**	28	12	16	15	
119	*Upupa epops*	**Eurasian Hoopoe**	2	2	1	1	
120	*Ocyceros birostris*	**Indian Grey-Hornbill**		4	4	6	
121	*Megalaima haemacephala*	**Coppersmith Barbet**			2	1	
122	*Megalaima zeylanica*	**Brown-headed Barbet**		1		1	
123	*Dendrocopos mahrattensis*	**Yellow-fronted Woodpecker**			1	[illegible]	
124	*Dendrocopos nanus*	**Brown-capped Woodpecker**			3	1	
125	*Dinopium benghalense*	**Black-rumped Flameback**			6	4	
126	*Jynx torquilla*	**Eurasian Wryneck**	1			[illegible]	
127	*Alauda gulgula*	**Oriental Skylark**			1		
128	*Ammomanes phoenicurus*	**Rufous-tailed Lark**			1	1	
129	*Hirundo concolor*	**Dusky Crag-Martin**		2			[illegible]
130	*Hirundo daurica*	**Red-rumped Swallow**				[illegible]	
131	*Hirundo smithii*	**Wire-tailed Swallow**		2	[illegible]	4	
132	*Riparia riparia*	**Sand Martin**	50?	4	2		
133	*Lanius cristatus*	**Brown Shrike**	1				
134	*Lanius schach*	**Long-tailed Shrike**	1		4	1	
135	*Lanius tephronotus*	**Grey-backed Shrike**				1	
136	*Lanius vittatus*	**Bay-backed Shrike**	1			1	
137	*Dicrurus caerulescens*	**White-bellied Drongo**			1		
138	*Dicrurus leucophaeus*	**Ashy Drongo**				1	

	A	B	C	D	E	F	G
2			06-Mar	07-Mar	08-Mar	09-Mar	10-Mar
139	*Dicrurus macrocercus*	**Black Drongo**	40	50	[illegible]	[illegible]	
140	*Dicrurus paradiseus*	**Greater Racket-tailed Drongo**	12				
141	*Acridotheres fuscus*	**Jungle Myna**	200	200	[illegible]	[illegible]	
142	*Acridotheres ginginianus*	**Bank Myna**	8	30		[illegible]	
143	*Acridotheres tristis*	**Common Myna**	100	105	[illegible]	[illegible]	
144	*Sturnus contra*	**Asian Pied Starling**	80	30	[illegible]	[illegible]	
145	*Sturnus pagodarum*	**Brahminy Starling**		8	[illegible]	[illegible]	
146	*Coracina macei*	**Large Cuckoo-shrike**	1				
147	*Corvus macrorhynchos*	**Large-billed Crow**	30	4	6	4	
148	*Corvus splendens*	**House Crow**	1000	300	300	[illegible]	
149	*Dendrocitta vagabunda*	**Rufous Treepie**	2	3	8	[illegible]	
150	*Pericrocotus cinnamomeus*	**Small Minivet**			2	[illegible]	
151	*Tephrodornis pondicerianus*	**Common Woodshrike**		1	2	4	
152	*Pycnonotus cafer*	**Red-vented Bulbul**	5	12	30	[illegible]	
153	*Pycnonotus leucotis*	**White-eared Bulbul**		4	10	6	
154	*Chrysomma sinense*	**Yellow-eyed Babbler**			1	4	
155	*Turdoides earlei*	**Striated Babbler**	2				
156	*Turdoides malcolmi*	**Large Grey Babbler**			2	[illegible]	
157	*Turdoides striatus*	**Jungle Babbler**		60	80	[illegible]	
158	*Ficedula parva*	**Red-breasted Flycatcher**	2		1	[illegible]	
159	*Ficedula tricolor*	**Slaty-blue Flycatcher**		1			
160	*Ficedula parva*	**Red-throated Flycatcher**	1	1			
161	*Acrocephalus melanopogon*	**Moustached Warbler**		1			
162	*Prinia inornata*	**Plain Prinia**			3		
163	*Prinia socialis*	**Ashy Prinia**		1	1	[illegible]	
164	*Orthotomus sutorius*	**Common Tailorbird**		20	3	[illegible]	[illegible]
165	*Acrocephalus stentoreus*	**Clamorous Reed-Warbler**		1			
166	*Sylvia curruca*	**Lesser Whitethroat**		3	6	6	
167	*Phylloscopus collybita*	**Common Chiffchaff**		1	1	[illegible]	
168	*Phylloscopus trochiloides*	**Greenish Warbler**		1		[illegible]	
169	*Luscinia calliope*	**Siberian Rubythroat**	1				
170	*Luscinia svecica*	**Bluethroat**		1	3		
171	*Copsychus saularis*	**Oriental Magpie-Robin**		4	[illegible]	[illegible]	
172	*Phoenicurus ochruros*	**Black Redstart**	1			[illegible]	
173	*Cercomela fusca*	**Indian Chat (Brown Rock-Chat)**		1	4		
174	*Saxicola torquata*	**Common Stonechat**		1	[illegible]		
175	*Saxicola caprata*	**Pied Bushchat**	1	2	[illegible]	[illegible]	
176	*Saxicoloides fulicata*	**Indian Robin**	8	7	4	[illegible]	
177	*Zoothera citrina*	**Orange-headed Thrush**				[illegible]	
178	*Turdus unicolor*	**Indian Grey Thrush (Tickell's)**			[illegible]	[illegible]	
179	*Sitta castanea*	**Chestnut-bellied Nuthatch**				[illegible]	
180	*Salpornis spilonotus*	**Spotted Creeper**			[illegible]		
181	*Anthus rufulus*	**Paddyfield Pipit**		[illegible]	[illegible]	[illegible]	
182	*Motacilla alba*	**White Wagtail**	20	[illegible]	[illegible]	[illegible]	
183	*Motacilla cinerea*	**Grey Wagtail**			[illegible]	4	
184	*Cettia pallidipes*	**Citrine Wagtail**		[illegible]	[illegible]	40	
185	*Motacilla flava beema*	**Yellow Wagtail**			[illegible]	20	
186	*Motacilla flava melanogrisea*	**Yellow Wagtail**				2	
187	*Motacilla madaraspatensis*	**White -browed Wagtail**			2	4	
188	*Nectarinia asiatica*	**Purple Sunbird**	1	3	6	12	
189	*Zosterops palpebrosus*	**Oriental White-eye**				2	
190	*Passer domesticus*	**House Sparrow**	30	30	30	30	
191	*Passer hispaniolensis*	**Spanish Sparrow**	1				
192	*Petronia xanthocollis*	**Chestnut-shouldered Petronia**		3	14	40	
193	*Ploceus philippinus*	**Baya Weaver**		20?			
194	*Lonchura malabarica*	**White-throated Silverbill**				8	

Varangerfjord 2001

The RAFOS Eexpedition to Arctic Norway
(Expedition Northern Summer 01)
18 June to 6 July 2001

By Nick Smith

Introduction

Varangerfjord at 70°12'N 29°52'E is Norway's only major east-facing fjord, and in the far northeast of the country, it faces Russia. Only 20km to the south lies the border with Finland. To reach Varangerfjord by road, it is necessary to travel through all three Fennoscandian countries. To follow up RAFOS' expedition there in 1996 (26 Apr-17 May) it had been the intention return in spring 1999, but for a number of reasons aspects of the planning could not be implemented in time, and so the expedition was postponed. 'Expedition Northern Summer', re-dated '01' was mounted a further two years later as the Society's major overseas RAFAT expedition for 2001. Flt Lt Mike Hayes, RAFOS Field Activities Liaison Officer (FALO), undertook initial planning in liaison with Dr Carl Mitchell of the Wildfowl and Wetlands Trust (WWT). The remoteness of the 118km-long Varangerfjord and the gruelling task of crossing the shoreside and hinterland terrain, comprised of a mixture of peat bogs, birch forests and rocky outcrops, qualified the expedition as 'adventurous'. The national and international ornithological status of Varangerfjord has led to its categorization as an Important Bird Area (IBA) in Europe, and is designated as NO (Norway) 003 (Heath & Evans 2000).

Aims

The expedition's primary ornithological aim was to gather further data for Dr Mitchell from Varangerfjord, firstly on the status of **Steller's Eider** *Polysticta stelleri*, many of which remain throughout summer in their major wintering area in Europe instead of migrating to breed, and secondly on the status of the globally more common **King Eider** *Somateria spectabilis*. During transit to and from the disembarkation point and Varangerfjord and also in the Varangerfjord area, the expedition would record as the secondary ornithological aim all other bird species. The expedition would also meet the RAF Adventurous Training aim of undertaking gruelling and arduous tasks daily, such as implementation of: navigation skills (including detailed map and compass work in difficult and unfamiliar terrain); field-craft skills in the sub-arctic, and movement across difficult tundra, mountain, bog, and taiga forest terrain.

Description of the Survey Area

As described by Lislevand *et al* (2000), the Varangerfjord IBA, in the administrative region of Finnmark, covers 60 000ha over an altitude range of 0-53m. Only 160ha of the IBA, Ekkerøya, is a nature reserve. The site is an Arctic shoreline, and includes a relatively small proportion of shallow sea offshore. A main road runs along the coast, and two towns, Vadsø and Vardø, lie in the area. Important localities within the IBA are:

1. Nesseby (formerly designated subsite NO 003-1by Grimmett & Jones (1989) in the first pan-European IBA inventory), at 70° 10'N 28° 50'E, 74ha.
2. Vadsøy and Vadsøysundet (formerly subsite NO 003-2) at 70° 05'N 29° 45'E, 120ha.
3. Ekkerøy (formerly subsite NO 003-3) at 70° 05'N 30° 10'E, 160ha.
4. Skjåholmen (71° 20'N 28° 45'E), 1500ha.

Nesseby is a broad tidal bay with shallow water. Vadsøy and Vadsøysundet consist of the eastern part of Vadsøy island and the bay (extensive intertidal flats and shallow subtidal water) between the island and the mainland. Ekkerøy comprises the southern and eastern half of the Store Ekkerøy peninsula, just east of Vadsø, and includes steep cliffs 50m high. On the north side of the peninsula, the peaty ground slopes less steeply towards the sea and is covered in heathland. There is some sheep-grazing and collecting of gulls' eggs on the peninsula. Skjåholmen is a small island in innermost Varangerfjord, about 3km long and 500-600m wide, and is surrounded by sandy beaches and large expanses of shallow water. The island is used for hunting, recreation, egg-collection and reindeer-herding. The principal habitats are: scrub (heathland), wetland (shingle, stony beach), marine areas (sea inlets, coastal features) and rocky areas (sea cliff, rocky shores). Land use comprises: agriculture, fisheries and aquaculture, tourism and recreation, urban, industrial and transport. Varangerfjord meets 5 criteria for becoming an IBA. Only one is required. The details of the criteria, and the bird species that fulfil the criteria are given at **Appendix 1.** The land adjoining the IBA, comprising the Varanger peninsula to the north and the eroded northern foothills of the Scandinavian mountains that cover 12° of latitude, reaches 673m and 480m respectively within 10km of the shore.

Method of Survey

Steller's and **King Eider** Survey.

The geography of Varangerfjord, at 118km one of the longer Norwegian fjords, set against the limited human (12 people) and vehicle resources (two) and time available (6 days) dictated the choice of methodology adopted for the survey. The Recorder, Sqn Ldr Nick Smith, decided to carry out a series of continuous Line Transects (Bibby *et al* 1992) along the 228km of the Fjord's shoreline, but these would be interspersed with Point Counts (Bibby *et al* 1992) when and where concentrations of waterfowl were discovered. The Line Transects generally varied between 7km and 17km in length, although a 29km stretch in the far northeast was surveyed on 2 occasions. A sketch map of the area is at **Appendix 4.** In keeping with the primary ornithological aim of the expedition, the priority was to count, and if possible, to sex and age all **Steller's** and **King Eiders** around the fjord. Accordingly, four teams were formed, each led by one of the more experienced team members, each team being equipped with at least 2 high-powered telescopes. The effort was split between the two vehicles (light vans). These 3 or 4-man survey teams covered considerable distances daily, by using a 'leapfrog' process of drop, drive and walk. To minimise the chances of double counting, strict day to day time and space deconfliction was enforced between teams surveying neighbouring stretches. Any suspiciously similar observations from neighbouring survey areas were then reconciled by the Recorder at the nightly call-over sessions. Similarly, daily survey areas were chosen to effect an overall 'creeping-line-ahead' method of progress along the fjord's coastline. Moreover, the open nature of the Fjord's northern coastline meant that previously surveyed stretches could be crudely monitored on subsequent days during road transits to the next survey areas. Meanwhile, time constraints dictated that most stretches could be covered but once. Although the danger of double counting could not be eliminated, applying the above constraints minimised that risk. In order to take advantage of the good weather that prevailed from day 2 onwards, the teams worked westwards away from the more exposed arctic seaward end of the fjord. The teams spent on average at least 12 hours in the field daily.

Census of other breeding birds on the Varanger Peninsula

In accordance with the secondary ornithological aim and the

Adventurous Training aims, all other bird species encountered were also counted concurrently, as time permitted. Similarly, in order to vary the daily routine and to expose the less-experienced members of the team to different survey techniques in different and more arduous terrain, several excursions were made to the interior of the Varanger Peninsula, the offshore island of Hornøya and the Ovre-Pasvik valley. The habitats explored included extensive tundra, birch forest and mountain plateaux up to 600asl, an offshore island where seabirds were counted and taiga forest-bog. The techniques used included Line Transects, Transect Counts and Point Counts and the results are summarized or detailed in the Systematic List *(qv)*.

Opportunistic Sightings during Transit

During transit to and from the Varangerfjord many opportunistic sightings were made in other areas of Norway, Sweden and Finland. Three night stops during each journey enabled more thorough coverage to be made in the vicinity of the campsites. The results of these opportunistic sightings are included in the Systematic List *(qv)*.

Summary of Weather Conditions

This expedition being several weeks later in the year than that of 1996, the weather was, as hoped, correspondingly better, and fortunately remained so. Continuous good weather is a rarity at such high latitudes, June 2001 being the hottest local people could remember. Mid-day temperatures on the peninsula varied between 12-15°C. Due to a large and stable anti-cyclonic system over Scandinavia, the weather was mostly clear, and with little rain. Any sea mist was blown away by mid morning, usually by northerly winds that became chillier further east in the fjord where they were less impeded by protecting land-mass. Details are at **Appendix 2**. The sea crossing on 28 June to Hornøya was in perfectly calm sunny conditions.

Annotated Systematic List of Bird Species Recorded

Explanation of the Systematic Accounts

Common (English) names generally follow *The Birds of the Western Palearctic (Concise Edition) (BWPC)* (Snow and Perrins 1998). Extensive taxonomic research within bird families and genera has been carried out in the 1990s, mostly genetic and based on a variety of DNA analyses, but many of the results have been published since BWPC went to press. Inevitably, the improvement in the understanding of species' relationships to one another sometimes required new genera to be created, as the closeness of relationships becomes clearer. A further complication is that many of the species recorded opposite have a Holarctic distribution, giving rise to different English names in different areas. Competing or rival taxonomic lists and nomenclatures are nothing new, but the huge amount of recent research has produced many versions, with a greater or lesser degree of partiality amongst their adherents. *Birds of the World: a Checklist (5th Edition)* (Clements 2000) provides probably the most comprehensive and consistent approach to the plethora of new developments in its sensible and sound treatment of nomenclature and subspecies. As a basis, Clements uses the taxonomy of *The Handbook of the Birds of the World* (del Hoyo *et al* 1992-1999), which is becoming familiar to British birdwatchers. The sequence of species followed opposite, the scientific names and the alternative (given in brackets) English names are from Clements (2000). An example of a typical change in the order is the placing of **Goldcrest** *Regulus regulus* before the Accentors and away from the Old World Warblers, but this is the relationship indicated by genetic research. Previous scientific generic names, and superseded subspecific names are given in brackets. The only editorial departures from Clements' nomenclature style are the omissions of American spelling (*eg* 'gray') and of over-hyphenation (*eg* 'Golden-Plover'). The subspecies listed are those resident in the areas through which the expedition passed or worked in Fennoscandia. The presence of so many nominate subspecies below of course reflects the Swedish origins of the first taxonomist, Carl von Linné (Linnaeus).

The status of each species in Fennoscandia (Norway, Sweden and Finland) is given after its scientific name, and is taken from Gjershaug *et al* (1994) (for Norway), Hagemeijer & Blair (1997) or Heath *et al* (2000). The status includes the species' SPEC (Species of European Conservation Concern) categories, its European Threat assessment (*eg* 'Vulnerable'), the species' population numbers in Fennoscandia (in breeding pairs [bp]), and population trends by country (Tucker & Heath 1994, as amended in Heath *et al* 2000). Briefly, SPEC categories are:

1. Species that are Globally Threatened.
2. European Species that have Unfavourable Conservation Status.
3. Global Species that have Unfavourable Conservation Status in Europe.
4. Species with Favourable Conservation Status in Europe, but whose populations are mainly in Europe.

NB Non-SPEC generally means that a species has favourable conservation status in Europe and it may also have the majority of its population outside Europe.

The suffix 'W' to any SPEC category or European Threat Status refers to the wintering population. 'Provisionally Secure' means that all the criteria that would confirm a species' 'Secure' status have not yet been applied, for whatever reason, but the evidence so far is that the species is not at risk in Europe. Terms such as 'Declining', 'Increasing' and 'Stable' refer to population numbers. Range trends are mentioned occasionally as such. The term 'at least' refers to minimum population estimates in breeding pairs (bp), 'up to' refers to maximum estimates, *c* (*circa* or about) to mean values of estimates and 'asl' is the abbreviation for 'above sea level'. There was insufficient space to include species' common names in Norwegian, Swedish and Finnish, but these can be found in Hagemeijer and Blair (1997).

The terms 'transit' or 'in transit' used in the species accounts refer solely to the records obtained on the journeys from Kristiansand to Varangerfjord and back, a total distance of 4100km, and the 'transit' part of the account is in square brackets [ ]. Those species seen solely or also in the North Sea before the expedition reached Fennoscandia have the appropriate part of the account in old-style brackets { }.

Annotated List

Red-throated Diver (Loon) *Gavia stellata.* SPEC 3. Vulnerable. Slight decrease in bp in Fennoscandia, low estimate of fewer than 3000bp. [Transit; one flew over the road at Elverum, 19 June.] A total of 41 was seen around the Varanger Peninsula 23-28 June, including one bp with 2 young, 2km north of Golnes on 27 Jun. One in the Pasvik Valley, 30 June.

Black-throated Diver (Arctic Loon) *Gavia arctica.* SPEC 3. Vulnerable. Slight decrease in bp in Norway and Finland, low estimate of 17 000bp. [Transit; one at Gullvik, 20 June. One at the Lintutorni reserve, 22 June.] A total of 37 was seen off the N Varanger Peninsula coast (W of Vardø), 11 off the S shore, and one apparently non-breeding pair on a lake 5km north of Krampenes on 22 Jun. At least 5 were in the Pasvik Valley, including a pair, 30 June/1 July.

Great Northern Diver (Common Loon) *Gavia immer.* Non-SPEC. Secure. Large Nearctic population. *c*300bp in Iceland. Occasional breeder in Arctic N Europe. [Transit; one near Bergnaset, 21 June.] Five were seen off the N Varangerfjord shore, 23-26 June.

White-billed Diver (Yellow-billed Loon) *Gavia adamsii.* Non-SPEC. Secure. Large Asian Siberian and NW Nearctic population. Very few bp in Arctic NE Europe. One adult seen near Komagnes on 24 June moved a fair way along the coast, not allowing approach closer than 800 metres, but it was seen by other birders.

Slavonian (Horned) Grebe *Podiceps a. auritus.* Non-SPEC. Secure. *c*6500bp Fennoscandia.Norway, slight increase: Finland slight. Sweden large decreases. A pair was seen at Karleboth, SE of Varangerbotn, 30 June, [Transit: 2 near Ivalo, Finland, 2 July.]

(Northern) Fulmar *Fulmarus g. glacialis/auduboni.* Non-SPEC. Secure. In area, occurs along Norwegian coast: large increase in bp to 6000+. {About 10 were seen off Newcastle-on-Tyne, 18 June.}

Common around Vardø, at least 65 were seen on 26 June. An estimated 70% of birds seen were blue-phase.
{**Manx Shearwater** *Puffinus puffinus*. SPEC 3. Does not breed in Fennoscandia. At least 3 were seen from the ferry off Newcastle on Tyne, 18 June.}
(Northern) Gannet *Morus bassanus*. SPEC 2. Localized. In area, occurs along Norwegian coast; large increase in bp to 3500+. {At least 30 were seen off Newcastle-on-Tyne, 18 June.} At least 73 were seen around Vardø, 26 June.
(Great) Cormorant *Phalacrocorax c. carbo*. Non-SPEC. Secure. Norway, 24 000bp, s Sweden 17 500bp, S Finland *c*130bp (colonized in mid-1990s). {In UK, at least 6 were seen at the River Tyne mouth, 18 June.} Common along the N Varanger Peninsula coast, a minimum of 94 was counted off the N Varangerfjord shore, several being on Reinøya, island, & 10 off S shore, 22-29 June.
(European) Shag *Phalacrocorax a. aristotelis*. SPEC 4. Secure. In area, occurs along Norwegian coast; slight decrease to *c*16 000bp. It was common on the N side of Varangerfjord, with at least 6 occupied nests on Hornøya, but there was no complete count made.
[**Grey Heron** *Ardea c. cinerea*. Non-SPEC. Secure. Increasing; at least 10 000bp in Fennoscandia, the tiny Finnish population of recent origin. During transit in Norway, 5 were seen from the vehicles.]
[**Mute Swan** *Cygnus olor*. Non-SPEC. Secure. Increasing in S Fennoscandia, especially in Finland. At least 6200bp. Transit; commonly seen from the vehicle in Norway (at least 15 counted), but just 2 were seen in Sweden.]
Whooper Swan *Cygnus cygnus*. SPEC 4W. Secure. Usually at least 2100 individuals winter in S Sweden and S Finland. [Transit; 9 were recorded in Sweden, 2 pairs being near Ivalo, 2 July.] Five were on a hill loch *c*10 km S of Vardø, 24 June. N of Vestre Jacobselv, 27 June, 2 flew E. A pair were on a rushy loch, *c*25 km E of Burgøynes, near the S Varangerfjord shore, 29 June. One was in the Pasvik Valley, 30 June.
Bean Goose *Anas f. fabalis* **'Tundra Bean Goose'.** Non-SPEC. Secure. Mid to N Fennoscandia holds between 2500-4500bp, numbers remaining stable. Two flew N (994874, N of Vestre Jacobselv), 23 June. 36 were counted flying N near Paddeby, 23 June, and 52 were frequenting a hill loch and isolated arable land, NW of Indre Kiberg, 26 June.
Greylag Goose *Anser a. anser*. Non-SPEC. Secure. Fennoscandian population, at least 13 000bp, is increasing rapidly along coasts. 11 flew NE over land near Komagnes, 23 June. [Transit; the Ilene Reserve (Tønsberg, Norway) held 45, 4 July.]
[**Canada Goose** *Branta canadensis (ssp* identity lost?). Introduced, no SPEC category. 7000-10 000bp form core of rapidly expanding population, mostly in Sweden. Transit; 3 were seen at Ange, 20 June, 1 at Gullvik, 20 June, and at least 25 at Skellefteä, 4 July (all in Sweden).]
(Common) Shelduck *Tadorna tadorna*. Non-SPEC. Secure. Some 10 000bp, mostly in Norway & Sweden, numbers either stable or slightly increasing. [Transit; 40 were seen at the Ilene reserve (Tønsberg), 19 June, and 10 plus young were there 4 July. Two adults were noted at Krammer, 19 June, and one at Gullvik, 20 June.] On the Varanger Peninsula, 22 adults and 2 young were seen W of Nesseby, 25 June, and a pair on the S side of Varangerfjord, 29 June.
(Eurasian) Wigeon *Anas penelope*. Non-SPEC. Secure. A stable population of probably over 100 000bp in Fennoscandia. [Transit; 16 were recorded at the Ilene reserve, 19 June, and 42 in Finland.] There were 20 on the N side of Varanger Peninsula, and 3 on the S side, 23-29 June. Of the 7 in the Pasvik Valley, two were females with ducklings, 30 June. A male and 4 females near Kirkenes, 1 July.
(Green-winged or **Common) Teal** *Anas c. crecca*. Non-SPEC. Secure. A huge, stable population of up to 360 000bp in Fennoscandia. [Transit; 5 were at the Ilene reserve, 19 June, and 3 on 4 July. 3 were seen in Sweden, 20/21 June.] Only 2 were on the N side of Varangerfjord, 24-28 June, but 58 were on the S side, 7 being in the Pasvik Valley, 30 June.
Mallard *Anas p. platyrhychos*. Non-SPEC. Secure. Vast stable Fennoscandian population of *c*470 000bp; scale of hunting releases unknown. [Transit; 18 were seen in Norway, and 5 in Finland.]On the Varanger Peninsula, 22 were on the N Varangerfjord shore (including 4 ducklings at Vadsø), 22 June, and 6 on the S side of the fjord, 22 -29 June.
(Northern) Pintail *Anas acuta*. SPEC 3.Vulnerable. At least 21 000bp in Fennoscandia, the Finnish population (*c*20 000) declining slightly. [Transit; one female noted at Kemi, 2 July.] 12 were found on the N side of the Varanger Peninsula, and 11 on the S side, 24-26 June. Three were at Leirpollen estuary, 27 June, and 2 in the Pasvik Valley, 30 June.
Tufted Duck *Aythya fuligula*. Non-SPEC. Secure. At least 147 000bp in Fennoscandia, the minority Norwegian population (7000) increasing. [Transit; 16 were seen in Finland, 22 June and 2 July. One was at Trysil, 4 July.] 48 were seen in the N of Varanger Peninsula, 22-24 June, and one on the S side, 29 June. 28 were in the Pasvik Valley, 30 June, and 4 near Kirkenes, 1 July.
(Greater) Scaup *Aythya marila*. SPEC 3W. Localized W. 4000-6000 individuals winter in Fennoscandia. *c*3000bp, strong decline in Finland. One pair and one male E of Vadsø, 23 June, and one pair on a small pool near Vadsø airport, 24 and 28 June, only the male being there on 26 June.
(Common) Eider *Somateria m. mollissima*. Non-SPEC. Secure. Up to 650 000bp in Fennoscandia, and increasing. {UK; at least 10 at the River Tyne mouth, 18 June.} [Transit; a maximum of 120, all females, were noted at the Ilene reserve, 4 July, and 8 females elsewhere in Norway, 19 June. 20 females (with ducklings) were seen in Sweden, 19/20 June.] In Varangerfjord, a total of 4392 birds were counted on the N side, 23-29 June (many ducklings), and 190 on the S side, 28/29 June. A further 1274 were seen on the N coast of the peninsula between Vardø and Hamningberg, 26-28 June.
King Eider *Somateria spectabilis*. Non-SPEC. Secure. *c*3000bp Svalbard. N Fennoscandian wintering population from European Russia. Only 36 were seen, all between Komagnes and Hamningberg at the eastern end of the peninsula. Observation conditions on cold days when the sea was choppy and the wind was northerly made it difficult to see birds offshore. Such conditions probably caused birds to move more than usual and seek sheltered bays. Discussions with visiting birdwatchers suggested that an overall estimate of 100 to 150 birds is valid. **See Table 1.**
Steller's Eider *Polysticta stelleri*. SPEC 1. Localized W. *c*12 500 individuals winter in N Norway, *c*500 in Finland & Sweden, *c*7700 in S Baltic. This species was seen only between Vadsø and Vardø on the N coastline of Varangerfjord, where 420 were identified positively, and 53 probably (due to distance). **See Table 2.**
Long-tailed Duck (Oldsquaw) *Clangula hyemalis*. Non-SPEC. Secure. At least 7500bp in Fennoscandia, numbers stable. 249 were counted on the N side of Varangerfjord, and 35 on the S side, 16 being in the NW of the peninsula and 2 in Pasvik Valley, 30 June.
Common (Black) Scoter *Melanitta n. nigra*. Non-SPEC. Secure. At least 4500bp in Fennoscandia, numbers stable. [Transit; 3 males and 3 females were seen at Inari, 22 June.] 378 were counted on the N side of Varangerfjord, and 188 on the S side. One agitated female, presumed breeding, was on a lake 5km north of Krampenes, 22 Jun. This species often associated with **Velvet Scoter** *M. fusca*.
Velvet (White-winged) Scoter *Melanitta f. fusca*. SPEC 3W. Some 30 000 individuals winter in Norway, *c*900 in Sweden and Finland; numbers stable. 133 were counted on the N side of Varangerfjord, and 55 on the S side.
(Common) Goldeneye *Bucephala c. clangula*. Non-SPEC. At least 210 00bp in Fennoscandia, numbers increasing slightly in Sweden and strongly in Finland. [Transit; 28 were seen in Norway, 7 in Sweden and 19 in Finland.] On the N side of Varangerfjord, 43 were counted and 41 were seen in the NW of the peninsula.There were 30 seen in the Pasvik Valley, including a female with 5 ducklings.
Smew*Mergellus albellus* SPEC 3. Vulnerable. Around 1000-2000bp in Fennoscandia, mostly in Finland, where numbers are increasing.

[Transit; one redhead was at Inari, 22 June, and a pair at Lintutorni, 22 June.] There were 6 males and 3 females on the lake *c*5 km SW of Kirkenes, and 3 birds at Skrotnes, 30 June.

Red-breasted Merganser *Mergus serrator*. Non-SPEC. Secure. At least 45 000bp in Fennoscandia, numbers stable. [Transit; a pair was seen at the Ilene reserve, 2 birds at Gullvik, and 4 at Inari.] Offshore from the Varanger Peninsula, large rafts were seen, often separate from those of **Goosander** *M. serrator*; on the N side, a total of 815 was counted, whilst on the S side, 99 were recorded. In the NW of the peninsula 7 were counted.

Goosander (Common Merganser) *Mergus m. merganser*. Non-SPEC. Secure. At least 36 000bp in Fennoscandia, the *c*25 000bp in Finland increasing slightly. [Transit; 13 were on the river at Trysil, and 4 on the Baltic at Gullvik.] Offshore from the Varanger Peninsula, large rafts were seen, on the N side a total of 2150 being counted and the S side 59. In addition, 120 counted on the Tana River and 4 in the Pasvik Valley.

Osprey *Pandion h. haliaetus*. SPEC 3. Rare. At least 4700bp in Fennoscandia, increasing in Sweden (3400), decreasing in Norway (150). [Transit: one was seen near Lillesand (Norway) 19 June, and one 5 July. One was noted S of Pilea (Sweden), 3 July.] Three were in the Pasvik Valley 30 Jun/1Jul.

White-tailed Eagle *Haliaeetus albicilla*. SPEC 3. Rare. At least 1900bp in Fennoscandia, numbers increasing slightly to rapidly. This is a very wide-ranging species, making it difficult to estimate accurately the Varangerfjord population, but there were at least 7 adult and 5 sub-adult birds on the northern Varangerfjord coastline. **See Table 3.**

[**(Western) Marsh Harrier** *Circus a. aeruginosus*. Non-SPEC. Secure. At least 1700bp in Finland and Sweden, numbers increasing strongly; irregular in Norway. Transit; two (one a ringtail, the other unspecified) were over lakeside fringe vegetation, near Skellefteä, 21 June.]

[**Hen (Northern) Harrier** *Circus c. cyaneus*. SPEC 3. Vulnerable. *c*2800bp in Finland and Sweden, a few in Norway. Numbers fluctuate. Transit; a ringtail was seen near Bergnaset, 21 June, and another over farmland *c*16 km N of Skellefteä, 4 July, both Sweden.]

[**(Eurasian) Sparrowhawk** *Accipiter n. nisus*. Non-SPEC. Secure. At least 25 000bp in Fennoscandia; numbers stable, or increasing slightly. Transit; (all seen flying across the road) one was seen in N Sweden, 20 June and one near Ange, 4 July. In Norway, one was seen near Ilene, 4 July.]

Rough-legged Buzzard (Hawk) *Buteo l. lagopus*. Non-SPEC. Secure. 10 500-24 000bp in Fennoscandia, numbers fluctuate. [Transit; one was seen near Inari, one (a first-year bird) near Kongas and one rose to mob a **Golden Eagle** *Aquila chrysaetos* near Inari Joki (all Finland 22 June).] This was most commonly sighted bird of prey on the Varanger Peninsula, but apparently it was absent S of the fjord. There were 34 sightings, many from the coast road, including one pair with 3 chicks, the nest being on a ledge *c*80m from the road *c*15m up a SW-facing cliff, near Komagnes. One was seen in the Pasvik Valley, 1 July.

[**(Eurasian** or **Common) Buzzard** *Buteo b. buteo*. Non-SPEC. Secure. 27 000-36 000bp in Fennoscandia, numbers stable. Transit; sightings, 3 in total and all near the Ilene reserve (Norway), were surprisingly few, two being to the S, and one to the N of the reserve (all from the vehicle).]

[**Golden Eagle** *Aquila c. chrysaetos*. SPEC 3.Rare. Stable Fennoscandian population of 1600-2000bp likely at carrying capacity of the area. Just 1 second-summer plumage female was seen, near Inarijoki, 22 June, flying only 30m above the road, in open and flat bog/taiga habitat, being mobbed by a markedly smaller **Rough-legged Buzzard** *Buteo lagopus*.]

(Eurasian or **Common) Kestrel** *Falco t. tinnunculus*. SPEC 3. Declining. At least 5500bp in Fennoscandia; sharply declining in Finland. [Transit: two were seen at Hokmerk, 21 June.] One was soaring with an **Osprey** *Pandion haliaetus* in the Pasvik Valley, 1 July.

Merlin *Falco columbarius aesalon*. Non-SPEC. Secure. 9200-16 200bp in Fennoscandia; slight decline in Finland. Only one bird was seen, a female seen flying E. to the N of Vestre Jakobselv (893907), 27 June.

[**(Eurasian) Hobby** *Falco s. subbuteo*. Non-SPEC. Secure. Perhaps 3500bp in Finland & Sweden, <50bp in Norway. Breeds up to 69°N in Finland. One bird was seen hunting high above Lintutorni marshes, 22 June. Presumably the prevailing fine anticyclonic weather system explained why this bird was hundreds of miles N of the species' normal distribution.]

Gyrfalcon *Falco rusticolus*. SPEC 3. Vulnerable. Finland *c*30bp, Sweden *c*150bp, Norway *c*400bp; now stable, but decreasing since 1850. One adult with 3 young that seemingly were ready to leave the eyrie were seen in the Tana Valley, 1 July.

Willow Grouse (Ptarmigan) *Lagopus l. lagopus*. Non-SPEC. Secure. Numbers fluctuate, 650 000-1 500 000bp in Fennoscandia; slight decrease Finland. Encountered always on the edge of willow forest, 5 adults were seen on the N side of Varangerfjord, including a pair with 5 chicks (GR830765, *c*1km N of Mortnes), and a pair at Leirpollen. One was S of the fjord and 7 in the Pasvik Valley, including one with a chick on 30 June, and one with 10 chicks on 1 July.

(Rock) Ptarmigan *Lagopus m. mutus*. Non-SPEC. Secure. Numbers fluctuate, 241 000-584 00bp in Fennoscandia. Seen only in the NW of the Varanger Peninsula, one white male at GR713218 Sheet 2335 I, and 2 males and a female at Hanglefjellet on 28 June.

[**(Eurasian) Capercaillie** *Tetrao u. urogallus?* Non-SPEC. Secure. Declining most countries, including Finland. At least 150 000 males in Fennoscandia. Transit; two dead birds were seen on the road in Sweden, a male on the A4 between Skellefteä and Umeå, 3 July, and a female on the minor road between Lillehärdal and Särna.]

(Common) Crane *Grus grus* SPEC 3. Vulnerable. At least 4500bp in Fennoscandia. Decreasing Finland, increasing Norway & Sweden. [Transit; less commonly seen in transit than on the 1996 RAFOS expedition, when several courting pairs were seen in fields some 7 weeks earlier in the year, in 2001 one was seen N of Ange, one N of Umeå (20 June), one N of Skellefteä (21 June), 4 in a ploughed field S of Piteå (22 June), 2 near Ange on 4 July (Sweden), 2 by the road near Inarijoki, and 2 at Lintutorni (22 June) (Finland).] Further N. in the Pasvik Valley, one was heard in the vicinity of the northern edge of the Skrotnes Myran bog, on 30 June.

(Eurasian) Oystercatcher *Haematopus o. ostralegus*. Non-SPEC. Secure. At least 55 000bp Fennoscandia; numbers increasing Norway & Finland , range Sweden. [Transit: seen only at the Ilene Reserve, 12 on 19 June, and 35 on 4 July.] On Varangerfjord N edge, 293 were counted, including one at a nest with 1 egg, 4km west of Nesseby, and on the S side 57, 23–29 June. 25 were counted at Leirpollen, 27 June.

[**(Northern) Lapwing** *Vanellus vanellus*. Non-SPEC. Provisionally Secure. At least 140 00bp in Fennoscandia, but decreasing slightly to strongly. Commonly seen in fields in all 3 countries in transit. 56 were counted. An additional flock of 12 was at the Ilene Reserve, Norway, 4 July.]

(Common) Ringed Plover *Charadrius h. hiaticula*. Non-SPEC. Secure. At least 28 000bp in Fennoscandia. Decreasing in Finland. [In transit, just one seen; at Inari, 22 June.] Fairly commonly seen on tundra from about 100m asl down to sea level. 154 were seen on the N side of Varangerfjord and just 2 on the S side, 23 - 29 June. An additional 6 pairs were found in the vicinity of Hanglefjell, 27/28 June. One was noted in the Pasvik Valley, 30 June.

(Eurasian) Dotterel *Charadrius morinellus*. Non-SPEC. Provisionally Secure. At least 8800bp in Fennoscandia. Fluctuating in Finland. 12 females were encountered in small 'trips of 'grass widows" (Nethersole-Thompson, 1973) on the Varanger Peninsula, the males probably incubating nearby; 4 were on Oksevasshgöda at *c*200m asl, 7km NNW of Indre Kiberg (GR207042, Sheet 2535 (4)), 2 on Reinelvfjellet (329m asl), 13km N of Vestre Jakobselv, 2 in the NW near Hanglefjellet, *c*1km from the road (GR711221, Sheet 2335(1)) and 4 on Hanglefjellet on 28 June.

(Eurasian) Golden Plover *Pluvialis apricaria albifrons.* SPEC 4. Secure. At least 180 000bp in Fennoscandia. Numbers declining in Finland. [Transit; one was seen in distant flight at Lintutorni, 22 June.] Common in tundra from at least 200m asl down to sea level, 179 were counted on the northern Varangerfjord coast, another 21 being found inland but close to Hanglefjell. Northern populations are strikingly black-bellied in comparison with the less boldly plumaged southern form that breeds in Britain.

(Eurasian) Woodcock *Scolopax rusticola.* SPEC 3W. Vulnerable W. Stable population of *c*180 000bp; none overwinter in Fennoscandia. [Transit; there were 4 roding birds above the campsite at Kittila, 21 June.] On the Varanger Peninsula, a roding bird was seen several times above the campsite and adjacent birch forest, at Vestre Jakobselv, 24 - 26 June.

(Common) Snipe *Gallinago g. gallinago.* Non-SPEC. Provisionally Secure. In Fennoscandia, 225 000-425 000bp, numbers fluctuating or declining. [Transit; one performed in display flight high above the taiga near Lillhärdal, Sweden, 20 June, and in Finland, 3 were at Kittilä, and 1 elsewhere, 21 June.] In the Varangerfjord area, 23 were seen on the N side and 1 on the S side of the fjord, 23-29 June, 3 being in the Hanglefjellet area, 27 June and 4 in the Pasvik Valley, 30 June.

Whimbrel *Numenius p. phaeopus.* SPEC 4. Provisionally Secure. *c*55 000bp in Fennoscandia. Increasing in Finland. [Transit; 2 birds were heard at Kittilä, 21 June.] 17 birds were heard or seen on the N side of Varangerfjord, 23 - 27 June, including 3 pairs *c*9km N of Vestre Jakobselv (on pair at GR912885 and 2 at 893888, Sheet 2335(2)) and a nest with 2 eggs 2km north of Golnes. One was seen in the Tana valley, 28 June, and 6 in the Pasvik Valley 30 June/1 July.

(Eurasian) Curlew *Numenius a. arquata.* SPEC 3W. Declining W. At least 60 000bp in Fennoscandia. Decreasing Norway & Sweden. Few overwinter. [Transit; commonly seen in roadside fields, 2 in Norway, 33 in Sweden and 2 in Finland.] Thinly scattered around the N side of Varanger Peninsula, 13 were counted, mostly singletons, 23-25 June.

Bar-tailed Godwit *Limosa l. lapponica.* SPEC 3W. Localized W. 1225-3535bp in N Fennoscandia. Fluctuating in Finland, increasing in Norway. [Transit: 3 were seen flying through at Kittilä, 21 June.] Around Varangerfjord, there was a total of 253 birds, the sexes approximately evenly split, including one dispersed flock of 164 feeding on Nesseby foreshore on 25 June. Two separate very agitated, alarm-calling pairs encountered in typical breeding habitat, 2km N of Golnes on 22 Jun, such behaviour being strongly indicative of concealed young nearby. A pair was seen 8km NNE of Vestre Jakobselv (GR912885, Sheet 2335(2)), 27 June.

Spotted Redshank *Tringa erythropus.* Non-SPEC. Secure. At least 22 000bp in Fennoscandia. Stable. Only 4 birds were found on the Varanger Peninsula, 6km NE of Vestre Jakobselv (a pair at GR898849, and another by Holmvatnet Lake at 914859, Sheet 2335(2)), 27 June.

(Common) Redshank *Tringa t. totanus.* SPEC 2. Declining. At least 57 000bp in Fennoscandia. Increasing in Finland. [Transit; 2 were at the Ilene Reserve, Tønsberg (Norway), 19 June and 18 on 4 July; 3 were at Skellefteä, 21 June and one at Gullvik, 21 June (Sweden).] In the Varangerfjord, the total seen was 147 on the N coast and 16 on the S side, many agitated alarm-calling birds indicative of young nearby. Elsewhere, 10 were at Leirpollen on 27 June and 10 in the Tana Valley, 28 June.

(Common) Greenshank *Tringa n. nebularia.* Non-SPEC. Secure. At least 55 000bp in Fennoscandia. Stable. [Transit; 2 birds at Lintutorni, 22 June were the first seen in breeding habitat; one was at the Ilene Reserve, 4 July.] Only one bird was recorded on the Varanger Peninsula, *c*4km N of Indre Kiberg (GR215015, Sheet 2535(4)) on a small pool at *c*150m asl. Elsewhere, 4 were in the Pasvik Valley, 30 June/1 July, and one by Sandnesv Lake, 6km SSW of Kirkenes, 1 July.

Wood Sandpiper *Tringa glareola* SPEC 3. Declining. *c*300 000bp in Fennoscandia. Declining in Finland, stable in Norway and Sweden. [Transit; In breeding habitat, it was first seen perched on a branch in a small bog in a forest clearing, just into Sweden near Särna, 20 June. In Finland much further N, 5 were in open bog, *c*10km SW of Kittilä and 7 were seen elsewhere, 21/22 June.] On the Varanger Peninsula, just 5 birds were recorded; an agitated pair on the large Stuorrajoeeggi bog, 7km E of Nesseby (GR 770832, Sheet 2335(2)), 25 June, and 3 *c*5km NNE of Vestre Jakobselv (GR904842, Sheet 2335(2)). 5 agitated alarm-calling pairs were seen in the Pasvik Valley, 30 June/1 July, strongly indicative of young hiding nearby.

Common Sandpiper *Actitis hypoleucos.* Non-SPEC. Secure. *c*500 000bp in Fennoscandia. Stable. [Transit; one was seen in Sweden, 19 June, 4 in Finland, 21/22 June, and one at Trysil, Norway, 4 July.] In the Varangerfjord area, 5 were seen on the N side (including one on the river just by the Vestre Jakobselv camp site) and one on the S side (Burgøynes)

(Ruddy) Turnstone *Arenaria i. interpres.* Non-SPEC. Secure. At least 11 000bp in Fennoscandia. Stable. In the Varangerfjord area, a total of 97 birds was counted in the N coastal area and inland, just one being on the shore of the inner fjord, 24 - 29 June. At least 6 territorial pairs were present in a 1.5km stretch of the northern shore of the Store Ekkerøy peninsula on 21 Jun.Two were near Hanglefjellet, 27 June, one quickly running off the nest on open ground as it was approached and occasionally demonstrating the 'broken wing' distraction display. Neither nest nor chicks were found.

(Red) Knot *Calidris c. canutus.* SPEC 3W. Localized W. A few pairs breed on Svalbard. Winters outside Fennoscandia, where trends fluctuate. Just one, in non-breeding plumage, was seen on the Varangerfjord shoreline in the Komagvaer area, 24 June.

Sanderling *Calidris alba.* Non-SPEC. Secure. Possibly breeds on Svalbard. 5 were seen on the northern shoreline of Varangerfjord, 23/24 June, and another (in incomplete summer plumage) on the bay shoreline, 2km E of Persfjord, on the Varanger Peninsula N coast.

Little Stint *Calidris minuta.* Non-SPEC. Provisionally Secure. Norway holds a fluctuating 200-1000bp, Sweden and Finland a few pairs. A flock of 14 was seen in the Skallelv coastal area on the N Varangerfjord shoreline, 23 June; another noted near Indre Kiberg, 24 June.

Temminck's Stint *Calidris temminckii.* Non-SPEC. Provisionally Secure. 9000-23 000bp in Fennoscandia. Finnish numbers are decreasing. [Transit; one displaying pair was seen at Inari, 22 June.] On the N side of Varangerfjord, at least 28 birds were seen, including at least 3 pairs within the bounds of Vadsø town. Some of these birds were noted display flighting, nest-scraping and copulating on Store Vadsøya on 23 Jun. One was near Hanglefjellet and 10 on the saltflats of the nature reserve near Høyholmen, in the Tana valley, 27 June.

Dunlin *Calidris a. alpina.* SPEC 3W. Vulnerable W. 70 000-100 000bp Norway & Sweden; max 800bp Finland declining. None winter. A total of 238 was seen, confined to the N shore of Varangerfjord, as far E as Vardø, 24 - 28 June, including a flock of at least 100 in the harbour E of the Vadsø bridge, 23 June. One nest with 4 eggs was found 4km W of Skallnes on 27 Jun. One was by the road just S of Hanglefjellet at *c*320m asl, 27 June.

Purple Sandpiper *Calidris maritima* SPEC 4. Provisionally Secure. At least 6000bp Norway & Sweden, a few in Finland. Stable. Only 2 birds were seen, but the species is very territorial during the breeding season, nesting densities of the N Norway population (which breeds down to sea level) being *c*1bp/km^2 (Käläs 1997), and so the low number seen is not unexpected. One was on the pebble beach on the E of Vadsøya island, 23 June, and the other was seen 3km E of Vestre Jakobselv harbour, 24 June. Further S, birds retreat inland to alpine habitats to breed.

Ruff *Philomachus pugnax.* SPEC 4. Provisionally Secure. At least 70 000bp in Fennoscandia. Increase Norway, steep decline Finland. [Transit; 11 were seen at the Ilene Reserve, Norway.] Around Varangerfjord, 383 were counted, confined to the N side. Some were in breeding leks, such as the 7 at Vadsø (One black, 2 ginger males and 4 females), amongst the small rocks on the beach, 22 June. 27

June, one was seen inland near Hanglefjellet, a flock of 10 was in the Tana valley, and a Reeve was at Leirpollen.

Red-necked Phalarope *Phalaropus lobatus*. Non-SPEC. Provisionally Secure. At least 29 000bp in Fennoscandia. Numbers fluctuate in Finland. [Transit; 3 were at Lintutorni, 22 June.] In the Varanger Peninsula area, a total of 373 birds (mostly females) was seen, the ratio not being determined. 47 were on the pool on Vadsøya island, 22 June, the peak count being 128 at about midday, 23 June. 3 were seen near Hanglefjell, 27 June, and one (feeding beside pools in an inland bog) in the Pasvik Valley. A nest with 4 eggs was found near a marsh 2km N of Golnes on 27 Jun. Small groups of up to 5 were seen in the shallows of the rocky coastline, but the majority occupied calm freshwater pools fringed by vegetation and containing ample surface-living insects. Birds were very confiding and with caution could be approached as closely as 2m.

Great Skua *Catharacta skua*. SPEC 4. Secure. Mainland Norway holds stable 30-40bp, Svalbard 50-150, increasing sharply. 4 were seen offshore close to Skallnes, 23 June, and 4 were off the N coast road to Hamningberg, 26 June. {Transit; one was seen from the homebound ferry *c*100km SW of Kristiansand (5 July).}

Pomarine Skua *Stercorarius pomarinus*. Non-SPEC. Provisionally Secure. No regular breeding in Fennoscandia. One was seen offshore from Vardø, 24 June, 4 from Vadsøya island, 25 June, and 15 from the N coast road to Hamningberg 26 June; on the last date, one was seen chasing resident **Arctic Skuas** *S. parasiticus* on the tundra *c*4km NNW of Indre Kiberg.

Arctic (Parasitic) Skua (Jaeger) *Stercorarius parasiticus*. Non-SPEC. Provisionally Secure. *c*7500bp in Norway declining slightly. *c*500bp each in Finland & Sweden. A total of 555 birds was recorded on the N side of Varangerfjord and into the fells, a further 9 in the NW peninsula area, and 10 in the Hornøya area. Four nests, each with 2 eggs, were found, 2 on the northern shore and 2 on the southern shore of Varangerfjord. 11 birds were counted along the S side of Varangerfjord along to Burgøynes, 24 June - 29 June.

Long-tailed Skua (Jaeger) *Stercorarius l. longicaudus*. Non-SPEC. Provisionally Secure. 2100-12 000bp in Fennoscandia, numbers fluctuating. A total of 87 birds was counted on the N side of Varangerfjord, including, remarkably, a loose flock of 50+ birds, some thermalling up to 250 metres altitude. The flock was concentrated in *c*1km^2 (GR885930, Sheet 2335(2)), 13km N of Vestre Jacobselv. The area also held 3 pairs breeding in open moor, at *c*250m asl on the valley sides. The 87 includes 11 around Vardø airport, and 2bp with 2 eggs (GR212997, sheet 2535(2) and GR929847, sheet 2435 (2)). Only one was seen on the S side of the inner Varangerfjord, 29 June.

Common (Mew) Gull *Larus c. canus*. SPEC 2. Declining. At least 250 000bp in Fennoscandia. Declining slightly in Norway. Common throughout, including several breeding colonies.

Great Black-backed Gull *Larus marinus*. SPEC 4. Secure. At least 42 500bp in Fennoscandia. Finnish population *c*3000bp increasing slightly. [Transit; *c*15 were noted at the Ilene reserve, 4 July, and a few on the coast on the Gulf of Bothnia.] It was common around Varangerfjord.

Glaucous Gull *Larus h. hyperboreus*. Non-SPEC. Secure. At least 2500bp in Svalbard. Stable. On 23 June, a first-winter bird was in Vadsø harbour, 23 June, and 2 (1st- or 2nd- summers) were at Krampenes. A second-year bird was S of Vardø, 24 June, an adult was at Hamningberg on 28 June (N peninsula coast), and in Vardø harbour there were one (possibly 2) 2nd year and one 3rd year birds.

Iceland Gull *Larus g. glaucoides*. Non-SPEC. Provisionally Secure. Does not breed in Fennoscandia. The 3 records all were on 24 June, a first-winter bird in Vardø harbour, and 2 birds (one 2nd-winter and one 3rd-winter) on the mainland opposite Vardø.

Herring Gull *Larus a. argentatus*. Non-SPEC. Secure. At least 225 000bp in Fennoscandia. Increasing strongly in Finland. Common throughout, there was a notable breeding colony on Hornøya.

[**Lesser Black-backed Gull** *Larus f. fuscus & intermedius*. SPEC 4. Secure. At least 46 000bp in Fennoscandia. Transit; one (*fuscus*) was seen flying downriver at the campsite at Keminmaa, Finland, 3 July, a minimum of 30 birds (*intermedius*) were at the Ilene reserve, 4 July, and one near the Trysil campsite, 4 July.]

Black-headed Gull *Larus ridibundus*. Non-SPEC. Secure. At least 200 000bp in Fennoscandia. Decline slight in Finland, strong in Sweden. [Transit; it was common throughout.] A total of 15 was seen on the N of Varangerfjord, and 37 seen on S side, 24-28 June.

Little Gull *Larus minutus*. SPEC 3. Declining. At least 8000bp Finland (increasing strongly), 100 Sweden, up to 10 S Norway since 1990. 6 adults were on Sandnesv lake, SSW of Kirkenes, 30 June. 2 being there on 1 July. The finding by Wg Cdr Keith Cowieson near Skrotnes Myran (GR151043, Sheet 2433(4)) of a female with 2 very recently hatched chicks (both still with egg tooth) on a nest on a raised hummock in the middle of the large open bog constitutes a very rare breeding record of this species in Norway. Video footage was taken of the bird and nest. Probable breeding has been recorded at least twice in the Varangerfjord region, and confirmed breeding several times in S Norway (Eldøy 1994, Viksne & Bourne 1997). [Transit; further S, one seen over river at Kemiö, Finland, 2 July.]

(Black-legged) Kittiwake *Rissa t. tridactyla*. Non-SPEC. Secure. At least 500 000bp Norway (declining slightly), *c*30 S Sweden. Very common around Varangerfjord, it was often seen in huge flocks off the northern fjord shoreline. Thousands of pairs nest on the cliffs at Stor Ekkerøy, Vadsøya and Hornøya. Many pairs also nest on window ledges of buildings around the harbour area on Vardø island.

Sandwich Tern *Sterna s. sandvicensis*. SPEC 2. Declining. Norway, *c*5bp since 1990, Sweden *c*350, slightly declining. [Transit: 3 were seen at Gullvik, 20 June.] Only one was seen on the inner S shore of Varangerfjord, 29 June, but 3 were in the Pasvik Valley, 30 June.

Common Tern *Sterna h. hirundo*. Non-SPEC. Secure. At least 70 000bp in Fennoscandia. Stable. [Transit; a total of 33 birds was seen. 13 in Norway, 8 in Sweden and 12 in Finland. At Kemi, at the top of the Gulf of Bothnia, the ratio of **Common Tern** to **Arctic Tern** *S. paradisaea* (*qv*) was approximately 1:3.] On the Varanger peninsula, 7 birds were recorded on the N side and 3 on the S side. 2 were seen at Leirpollen, 27 June. It is quite easily distinguished, even from considerable distance, from **Arctic Tern** with which it often occurred, by the distinctive jizz of each species.

Arctic Tern *Sterna paradisaea*. Non-SPEC. Secure. At least 90 000bp in Fennoscandia. Slight increase in Finland, slight decrease in Norway. [Transit; 4 were seen in Sweden and 51 in Finland, including a sizeable loose flock of about 50 at Lintutorni on 22 June. At Kemi (N Baltic coast) 3 times as many **Arctic Tern** were seen as **Common Tern**.] This species was commonly seen on the N coast of Varangerfjord, time constraints preventing any accurate assessment of the many small colonies. On 23 June, of particular note amongst *c*100 birds in breeding plumage at a colony on Vadsøya was a single bird in first-summer plumage. This is a rare occurrence, because the **Arctic Tern** does not normally return north in its first summer.

Little Auk (Dovekie) *Alle a. alle*. Non-SPEC. Secure. At least 100 000bp in Svalbard. Stable. Four were seen in the strait separating Hornøya from the mainland on 24 June, 3 being there on 28 June.

(Atlantic) Puffin *Fratercula a. arctica*. SPEC 2. Vulnerable. At least 2 000 000bp in Norway, but numbers declining slightly. {Transit; at least 20 were seen from the ferry off Newcastle, 18 June.} A few were seen off-shore W of Vardø, but at a rough estimate, over 1000 birds were near Vardø 24-28 June, at least 200bp (likely large underestimate) being on Hornøya.

Guillemot (Common Murre) *Uria aalge hyperborea*. Non-SPEC. Secure. At least 31 000bp in Norway & Sweden, a few in Finland. It was very common in Varangerfjord, increasingly so towards Vardø, a rough estimate being at least 2000bp on Hornøya.

Brünnich's Guillemot (Thick-billed Murre) *Uria l. lomvia*. Non-SPEC. Secure. At least 1000bp in Norway, declining slightly; 780 000 in Svalbard, increasing slightly. Only seen in the vicinity of Hornøya, which held an estimated 40bp. On the water in an estimated ratio of 1:80 with **Guillemot** *U. aalge*.

Razorbill *Alca t. torda*. SPEC 4. Secure. c46 000bp Fennoscandia, small decline Norway; small increase Finland, but large Sweden. It was common in Varangerfjord, increasingly so towards Vardø,

perhaps 500bp on Hornøya (rough estimate).
Black Guillemot *Cepphus grylle arcticus* SPEC 2. Declining. At least 32 000bp in declining Fennoscandian population. Several were seen off-shore between Vadsø and Vardø between 24-29 June, becoming commoner towards Vardø. Roughly 50bp were on Hornøya. Only one was seen near the inner S shore of Varangerfjord.
Rock Dove *Columba l. livia*. Non-SPEC. Secure. At least 80 000bp in Fennoscandia. Declining slightly Finland, increasing slightly Norway. [Transit; 5 were seen in Norway.] 5 were seen near Vardø, 24 June.
[**Stock Dove (Pigeon)** *Columba oenas*. SPEC 4. Secure. Of at least 16 000bp in Fennoscandia, Norway holds only 1000bp. Decline Sweden, Norway. Transit; just one was seen, in Norway, 19 June.]
[**(Common) Woodpigeon (Wood Pigeon)** *Columba p. palumbus*. SPEC 4. Secure. At least 750 000bp in Fennoscandia (150 000bp Finland). Increasing Norway. Transit; it was commonly seen throughout Norway and Sweden, but not in Finland.]
[**(Eurasian) Collared Dove** *Streptopelia d. decaocto*. Non-SPEC. Provisionally Secure. At least 2900bp in Fennoscandia. Slight increase Norway. Transit; 2 were at Ange, and 8 at Grimstad, 5 July.]
(Common) Cuckoo *Cuculus c. canorus*. Non-SPEC. Secure. At least 100 000 calling males in Fennoscandia. Declining slightly in Finland and Sweden. [Transit; 4 were heard in Finland.] 8 were recorded on the Varanger peninsula, and 4 in the Pasvik valley.
Short-eared Owl *Asio f. flammeus*. SPEC 3. Vulnerable. 5000-25 000bp in Fennoscandia, where numbers fluctuate strongly. Two were seen Store Ekkerøy on 21 Jun (including one very pale individual) and 1 at the Vestre Jakobselv campsite, 22 June. Two were near Krampanes and Svartnes, 24 June. On 28 June, one was seen near Vadsø, 28 June, and one in the Vardø area. A pale **Short-eared Owl** was seen on Store Ekkerøy, another in the Pasvik valley and 2 near there, 30 June.
(Common) Swift *Apus a. apus*. Non-SPEC. Secure. *c*55 000bp in Finland, 350 000bp in Norway and Sweden. Common throughout Norway and Sweden, but only 2 seen in Finland. One bird (at the very northern edge of its range) was seen in the Pasvik valley on 30 June.
Great Spotted Woodpecker *Dendrocopos m. major*. Non-SPEC. Secure. c375 000bp in Finland Sweden, *c*10 000bp Norway. Fluctuating numbers Norway, Finland. [Transit; one was seen near the Norwegian/Swedish border 20 June, one E of S‰rna, 20 June, 2 at Gullvik, 21 June, and one near Skellefteä, 4 July (Sweden). One was at Kittilä. 22 June, and one at Kemio, 2 July (Finland).] One was seen in the Pasvik Valley, 30 June.
(Common) Skylark (Sky Lark) *Alauda a. arvensis*. SPEC 3. Vulnerable. At least 1 100 000bp in Fennoscandia. Decreasing slightly in Finland and Sweden. [Transit; it was commonly seen.] 21 were recorded on the Varanger peninsula, 23-28 June.
Horned (Shore) Lark *Eremophila alpestris flava*. Non-SPEC. Provisionally Secure. *c*6000bp Norway, *c*300 Sweden, *c*5 Finland. Sharp decline Finland, Sweden. 14 were seen on the Varanger peninsula, including (by the main road 2km E of Vadsø) an adult feeding a chick almost ready to fly, on 23 June.
Sand Martin (Bank Swallow) *Riparia r. riparia*. SPEC 3. Declining. At least 250 000bp in Fennoscandia. Decreasing slightly in Finland. [Transit; 7 were seen in Norway and 10 seen near a colony site at Kongas, Finland.] 15 were seen on the Varanger peninsula, including 6 at the Vadsøya pool on 22 June. One was in the Pasvik Valley, 1 July.
(Barn) Swallow *Hirundo r. rustica*. SPEC 3. Declining. At least 350 000bp in Fennoscandia, declining slightly everywhere. [Transit; 32 were seen in Norway, 12 in Sweden, and 4 in Finland.] 13 were seen on the Varanger Peninsula, 23-28 June and one in the Pasvik Valley, 1 July.
(Common) House Martin *Delichon u. urbica*. Non-SPEC. Secure. At least 400 000bp in Fennoscandia. Declining slightly in Finland and Sweden. [Transit; 34 were seen in Norway, 4 in Sweden, and 63 in Finland.] Although none were seen on the Varanger Peninsula, 11 were in the Pasvik Valley on 30 June.
White Wagtail *Motacilla a. alba*. Non-SPEC. Secure. At least 1.2Mpb in Fennoscandia. Stable. [Transit; it was very commonly seen from the vehicles.] A total of 82 was recorded on the Varanger Peninsula, 23-28 June, including one nest with 3+ young on 25 Jun, 2 pairs on Hornøya island. 2 were noted on the S side of Varangerfjord, 29 June, and 2 in the Pasvik Valley, 30 June. The call was distinctly different, shorter and less shrill, in comparison with **Pied Wagtail** *Motacilla a. yarrellii* only 350 miles to the SW across the North Sea.
('Grey-headed') Yellow Wagtail *Motacilla flava thunbergi*. Non-SPEC. Secure. At least 700 000bp Fennoscandia. Declining slightly Finland, increasing slightly Sweden. **'Grey-headed'** is the very attractive N Scandinavian race of **Yellow Wagtail**. [Transit; one seen near Kemi, Finland was the southernmost noted, 2 July. At least 10 were seen near a large bog in open taiga forest, 10km S of Kittilä, 21 June, and 5 more further N in Finland.] Only 2 seen on the Varanger peninsula, on 25 June. 13 in the Pasvik Valley on 30 June.
[**Grey Wagtail** *Motacilla c. cinerea*. Non-SPEC. Secure. 700-2000bp Norway, Sweden, up to 10 Finland. Strong increase numbers, range Norway. Transit; just one was seen (from the vehicle), by a stream just the Norway-Sweden border, 20 June.]
Tree Pipit *Anthus t. trivialis*. Non-SPEC. Secure. At least 5. 5Mpb Fennoscandia. Stable. [Transit; 3 were at Gullvik (Sweden), 20 June, and one at Trysil (Norway), 4 July.] 7 were encountered in birch forest on the Varanger Peninsula, 25-27 June, and 2 in much taller forest in the Pasvik Valley, 30 June, another 2 being there on 1 July.
Meadow Pipit *Anthus p. pratensis*. SPEC 4. Secure. At least 2.2Mbp Fennoscandia. Slight increase Finland. [Transit; 8 were seen in Finland, 21/22 June.] It was commonly encountered in open terrain, a minimum of 73 being counted on Varanger Peninsula 23–27 June, one nest with 6 eggs being found on 26 Jun. Two were seen in the Pasvik Valley, 30 June.
Red-throated Pipit *Anthus cervinus*. Non-SPEC. Provisionally Secure. At least 7300bp in N Fennoscandia. Numbers fluctuate in Finland. Commonly encountered around Varangerfjord, 34 were on the N side, 23-28 June, and 2 on the S, 28/29 June.
Rock Pipit *Anthus petrosus littoralis*. Non-SPEC. Secure. Finland has up to 1800bp, Norway up to 500 000, Sweden possibly 100. No known trends. This, the Nordic sub-species, was surprisingly scarce around the Varanger Peninsula, only 6 being seen along the N shore, and 2 pairs on Hornøya island, 28 June.
(Bohemian)Waxwing *Bombycilla garrulus*. Non-SPEC. Provisionally Secure. Minimum 50 000bp Finland, fluctuating; up to 5000 Sweden & 2000 Norway. [Transit; the first encounter with this delightful bird was of 6 in a loose gathering by a small forest pond at Lintutorni, with another 4 nearby in more open marshland, 22 June.] On the Varanger Peninsula, 2 were seen, 25 June, and 9, 1 July. Small groups (29 birds) occupied the pine forests and boggy clearings of the Pasvik Valley, 30 June.
(White-throated) Dipper *Cinclus c. cinclus*. Non-SPEC. Provisionally Secure. At least 5000bp each, Norway & Sweden (often more); *c*300 Finland. Stable. One was on the river just N of Vestre Jakobselv, 27 June, and an adult was feeding a young bird by the Neiden bridge, 30 June.
[**Goldcrest** *Regulus r. regulus*. SPEC 4. Provisionally Secure. At least 3 000 000bp in Fennoscandia. Fluctuations in Finland. Transit; 2 were seen at Trysil campsite, 19 June, one being there on 4 July (Norway). 10 were seen at Gullvik, 20 June, and 3 at Grimstad, 5 July (Sweden).]
Dunnock *Prunella m. modularis*. SPEC 4. Secure. At least 20 000bp Finland, 200 000 Norway & Sweden. Fennoscandian numbers fluctuate. This species, at its northernmost limit, was scarce. One was seen at the Vestre Jakobselv campsite, 23 June, and one was heard on the E bank of the Tana River, 27 June.
[**(Eurasian) Blackbird** *Turdus m. merula*. SPEC 4. Secure. At least 200 000bp Norway, Finland, 1 000 000 Sweden. Finnish numbers

fluctuate. Transit; met surprisingly seldom, 6 were noted in Norway and 2 in Sweden, 20 June, one at Gullvik and one W of Sveg/ Lillehardel]

Fieldfare *Turdus pilaris*. SPEC 4W. Secure. At least 2 520 000bp in Fennoscandia. Finnish numbers fluctuate. [Transit; commonly seen N of Ilene reserv2e (Norway) (*eg* pair feeding 4 young, 4 July). This species replaces **Blackbird** *T. merula* in suburbs N of Oslo.] A minimum of 130 was recorded on the Varanger Peninsula, 24-28 June, including one pair with occupied nest on window ledge of occupied house in village of Kiberg.It was common S of Varangerfjord and in the Pasvik Valley, 29/30 June.

Redwing *Turdus i. iliacus*. SPEC 4W. Secure. At least 3 200 000bp in Fennoscandia. Slight decrease in Finland. A minimum of 87 was recorded on the Varanger Peninsula, 23-29 June, 7 being seen S of Varangerfjord. [Transit; one was at the Kemio campsite, 4 July.]

Song Thrush *Turdus p. philomelos*. SPEC 4. Secure. At least 1. 3 Mbp in Fennoscandia. Stable. [Transit; 4 were seen near Gullvik, 20 June.] One was seen in the Pasvik Valley, 30 June, and another on 1 July.

[**Mistle Thrush** *Turdus v. viscivorus*. SPEC 4. Secure. At least 125 000bp in Fennoscandia. Stable. Only 1 pair recorded, at Trysil, 19 June.]

Sedge Warbler *Acrocephalus schoenobaenus*. SPEC 4. Provisionally Secure. At least 360 000bp Fennoscandia (*c*70% Finland). Increasing Norway, Finland. [Transit; one was at Lintutorni, 22 June, 2 at Kittilä, 21 June, and one at Kemi, 2 July (Finland).] A total of 12 was seen on the Varanger peninsula, 23-27 June, including one carrying nesting material at Nesseby on 25 June. One was seen in the Pasvik valley, 30 June.

[**(Eurasian) Reed Warbler** *Acrocephalus s. scirpaceus*. SPEC 4. Secure. At least 250 000bp Sweden, 12 000 Finland, 1000 Norway. Increasing Fennoscandia. Transit; 5 were seen at the Ilene reserve, on 19 June, and 3 there on 4 July.]

Willow Warbler *Phylloscopus trochilus acredula*. Non-SPEC. Secure. At least 20 000 000bp in Fennoscandia. Increasing in Sweden. [Transit; it was common throughout, particularly so in birch woods.] 6 were seen in the Pasvik Valley, 30 June. **NB** *P. t. trochilus* is resident in S Sweden.

(Common) Chiffchaff *Phylloscopus collybita abietinus (brevirostris)*. Non-SPEC. Provisionally Secure. At least 250 000bp in Fennoscandia. Numbers fluctuate in Finland. It was surprisingly scarce, the only one being heard by the Tana River, 27 June.

[**Wood Warbler** *Phylloscopus sibilatrix*. SPEC 4. Provisionally Secure. At least 150 000bp each Finland, Sweden; *c*5000 Norway. Increasing. Transit; one was heard *c*10km SW of Kittilä, Finland, 21 June.]

[**Arctic Warbler** *Phylloscopus borealis talovka*. Non-SPEC. Provisionally Secure. 10-100bp each N Norway, N Sweden, *c*3500 Finland. Decreasing Norway. Transit; one was heard by Stan Christophers, Jim Bryden and Gerry Bilbao in the morning of 19 June by the river at the Trysil campsite (at 61° 22'N), Norway. They confirmed the song by listening to tapes moments later. The view by Norwegian birdwatchers that the species is extremely rare in southern Norway is confirmed by Frantzen (1994)) and Tiainen *et al* (1997), who map its southernmost possible breeding occurrence (singing in suitable habitat) in Norway at *c*69°N, citing it as a very rare breeder in N Norway. (In Sweden, possible breeding occurs S to *c*65°N). However, the bird moved location between singing sessions. It may have been searching for suitable territory, or belatedly be making its way north up the river valley.]

[**Blackcap** *Sylvia a. atricapilla*. SPEC 4. Secure. At least 640 000bp in Fennoscandia. Increasing in Sweden. Transit; 6 were seen in Norway and one at Gullvik (Sweden), 20 June.]

Garden Warbler *Sylvia b. borin*. SPEC 4. Secure. At least 2Mbp in Fennoscandia. Increasing in Sweden. [Transit; 15 were recorded in Norway and 5 at Gullvik (Sweden), 20 June.] On the Varanger Peninsula, one was seen at the Vestre Jakobselv campsite, 24 June, one near Vadsø harbour, 25 June, and 2 just N of Vestre Jakobselv, 27 June. **NB** *S. b. woodwardi (pallida)* distribution begins in Kola Peninsula, and may drift W.

[**(Greater) Whitethroat** *Sylvia c. communis*. SPEC 4. Secure. At least 800 000bp in Fennoscandia. Slight increase in Sweden. Transit: one was at Ilene reserve, 19 June, and 4 on 4 July (Norway), and one was at Kemiö (Finland), 3 July.]

[**Lesser Whitethroat** *Sylvia c. curruca*. Non-SPEC. Secure. At least 360 000bp in Fennoscandia. Stable. Transit; 2 were seen W of Sveg/ Lillehardel, 20 June, and one heard near the ferry terminal. Kristiansand, 5 July.]

Spotted Flycatcher *Muscicapa s. striata*. SPEC 3. Declining. At least 2 000 000bp in Fennoscandia. Declining in Finland. [Transit: 16 were seen in Norway, and 2 in Sweden.] There were 4 records on the Varanger peninsula, and 2 in the Pasvik Valley, 30 June.

(European) Pied Flycatcher *Ficedula h. hypoleuca*. SPEC 4. Secure. At least 1 500 000bp in Fennoscandia. Increasing in Finland and Sweden. [Transit; 6 were seen in Norway, 2 in Sweden and 1 in Finland.] On the Varanger peninsula, a pair was found behind the Vestre Jakobselv school, 24 June. A male was at a nest hole at Leirpollen, 27 June, and another was in the Pasvik Valley. 1 July.

[**(European) Robin** *Erithacus rubecula melophilus*. SPEC 4. Secure. At least 4 200 000bp in Fennoscandia. Fluctuating in Finland. increasing in Norway. Transit; 10 were close to the Gullvik campsite (Sweden), 20 June. One at Grimstad, 5 July, and another at Kristiansand, 5 July (Norway).]

[**Thrush Nightingale** *Luscinia luscinia*. SPEC 4. Secure. *c*500bp Norway, at least 35 000bp Finland and Sweden. Rapid increase Finland and Norway. Transit; excellent views were obtained of probably the same individual foraging for insects on the gravel drive at Ilene (southern Norway) reserve on both 19 June and 4 July. Rather confusingly, the locals referred to it as a **Nightingale** (A 'false friend' mistranslation of the Norwegian **Nattergal**). (**Nightingale** *L. megarhynchos,* which does not normally occur in Scandinavia. has a Norwegian name of **Sørnattergal**, sør being 'southern').]

Bluethroat *Luscinia s. svecica*. Non-SPEC. Secure. At least 740 000bp in Fennoscandia. Increasing in Finland. [Transit; first seen at Kittilä, 21 June, singing sporadically amongst willow scrub, 21 June.] On the Varanger Peninsula 11 were recorded, including a prominent confiding pair in typical birch forest habitat N of the Vestre Jacobselv campsite. Pair with nest containing 5 young S of Varangerfjord. 29 June and 7 noted in the Pasvik Valley, 30 June.

(Common) Redstart *Phoenicurus p. phoenicurus*. SPEC 2. Vulnerable. At least 650 000bp in Fennoscandia. Increasing Finland. decreasing Norway & Sweden. [Transit; one was at Gullvik (Sweden), 20 June, one seen and 3 heard at Kittiluä, 22 June. and one singing at Kemi on 3 July (Finland), the latter demonstrating versatile mimicry by impersonating a **Chiffchaff** call excellently.] A pair was feeding young W of Nyrud in the Pasvik Valley. 30 June. where another male was seen, 1 July.

Whinchat *Saxicola rubetra*. SPEC 4. Secure. At least 650 000bp in Fennoscandia. Decreasing slightly in Finland. [Transit: a male was seen at Kittilä, 21 June.] A male was noted in the Pasvik Valley. 30 June.

(Northern) Wheatear *Oenanthe o. oenanthe*. Non-SPEC. Secure. At least 850 000bp in Fennoscandia. Decreasing in Finland. [Transit: two 2 separate birds flew across the road N of Kittilä. 22 June.] On the Varanger Peninsula, a total of 80 was recorded. 23-29 June. One was in the Pasvik Valley, 30 July, and another near Kirkenes. 1 July.

Willow Tit *Poecile (Parus) montanus borealis*. Non-SPEC. Provisionally Secure. [Transit; 5 were seen in Sweden. 2 in Norway and 1 in Finland.] A pair with at least 3 fledged young were watched in the Pasvik Valley, 30 June.

(Grey-headed Chickadee) Siberian Tit *Poecile (Parus) cinctus lapponicus*. Non-SPEC. Provisionally Secure. At least 55 000bp in Fennoscandia. Stable. In the Pasvik Valley, one was seen in extensive stand of mature birch wood on a slope, 27 June. A pair was found nesting in a dead pine, the entrance being *c*1.7m up and containing at least 5 young, 30 June and 1 July.

[**Coal Tit** *Periparus (Parus) a. ater*. Non-SPEC. Secure. At least 630 000bp in Fennoscandia. Stable. Transit; one was seen at the

Ilene reserve (Norway), 19 June, and 10 at Gullvik (Sweden), 20 June.]

[**Crested Tit** *Lophophanes (Parus) c. cristatus*. SPEC 4. Secure. At least 400 000bp in Fennoscandia. Fluctuating in Finland, declining in Sweden. A single bird was seen in Scots pine *Pinus scotica*, in the park woodland just N of Kristiansand, 5 July.]

Great Tit *Parus m. major*. Non-SPEC. Secure. At least 2 600 000bp in Fennoscandia. Stable. [Transit; it was common throughout.] On the Varanger peninsula, 3 were recorded, with a further 3, including a breeding pair, in the Pasvik Valley, 30 June.

Blue Tit *Cyanistes (Parus) caeruleus*. SPEC 4. Secure. At least 380 000bp in Fennoscandia. Sharp increase in Finland. [Transit; it was common throughout.] Just one was seen in the study area, N of Vestre Jakobselv, 27 June.

[**(Eurasian) Nuthatch** *Sitta e. europaea*. Non-SPEC. Secure. *c*300 000bp in Sweden, *c*30 000 in Norway, *c*10 in Finland since 1990. Increasing Sweden. Transit; a pair was seen at Trysil campsite, 19 June, and one other nearby, 4 July. Two were at Grimstad, 5 July.]

[**(Eurasian) Treecreeper** *Certhia f. familiaris*. Non-SPEC. Secure. At least 440 000bp in Fennoscandia. Fluctuating in Finland. Transit; just one, at Grimstad, 5 July.]

[**Red-backed Shrike** *Lanius c. collurio/pallidifrons?*. SPEC 3. Provisionally Declining. At least 81 000bp in Fennoscandia, where declining (sharply in Sweden). Transit; one female was on telephone wires near Arendal (Norway), 19 June, a male was in young Sitka spruce plantation, between Särna and Sveg, 20 June, and male was on telephone wires, N of Sveg (Sweden), 20 June.]

Great Grey (Northern) Shrike *Lanius e. excubitor*. SPEC 3. Declining. At least 10 000bp in Fennoscandia. Declining in Finland. [Transit; a pair was seen at Inari (Finland), 22 June.] A mobile family party of at least 4 was seen, as was a separate individual in the Pasvik Valley, 30 June

Siberian Jay *Perisoreus i. infaustus? & ruthenus*. SPEC 3. Provisionally Declining. At least 90 000bp in Fennoscandia. Declining in Finland. [Transit; one was singing at about 3am at Trysil campsite, 19 June *(ruthenus)*.] 15 (*ssp* uncertain) were seen in the pine forests of the Pasvik Valley, 30 June/1 July. Another was seen near Holmvatnet Lake, *c*6km NE of Vestre Jakobselv (Sheet 2335(2) GR915855)).

[**(Eurasian) Jay** *Garrulus glandarius severtzovi*. Non-SPEC. Provisionally Secure. At least 330 000bp Fennoscandia (10 000 Norway). Range increase Norway. Transit; one flew across the road in Norway, just before the Swedish border, 20 June.]

(Black-billed) Magpie *Pica p. pica & fennorum*. Non-SPEC. Secure. At least 650 000bp in Fennoscandia. Increasing in Finland and Sweden. [Transit; very commonly encountered *(pica* in S Scandinavia). A total of 15 *(fennorum)* was recorded on the Varanger Peninsula, 23-27 June and 5 more in the Pasvik valley, 30 June.

[**(Eurasian) Jackdaw** *Corvus m. monedula*. SPEC 4. Provisionally Secure. At least 191 000bp Fennoscandia (1000-10 000 Norway). Declining in Finland. Transit; two were seen at the Ilene reserve, Tønsberg, Norway, 4 June.]

[**Rook** *Corvus f. frugilegus*. Non-SPEC. Secure. At least 23 000bp Sweden, 500 Norway, 1100 Finland. Increasing (sharply in Norway). Transit; just one was seen from the vehicle in S Norway.]

(Carrion) Hooded Crow *Corvus corone cornix*. Non-SPEC. Secure. At least 650 000bp Fennoscandia. Increasing in Sweden. [Transit; it was commonly encountered.] It was common in the study area.

Raven *Corvus c. corax*. Non-SPEC. Provisionally Secure. 25 000-77 000bp in Fennoscandia. Increasing in Finland, sharply in Sweden. [Transit; 3 were seen in Norway, 2 in Sweden and 1 in Finland. A total of 46 was seen on the Varanger Peninsula, with a nest containing 3+ large young just south of Vadsø airport and 4 to the S of the fjord. A further 9 were seen in the Pasvik Valley.

(European) Starling *Sturnus v. vulgaris*. Non-SPEC. Secure. At least 1 000 000bp in Fennoscandia. Declining, sharply so in Finland and Sweden. [Transit; it was commonly seen, though thinning out to the north.] Only one was seen on the Varanger Peninsula, at the Vestre Jakobselv campsite on 28 June.

House Sparrow *Passer d. domesticus*. Non-SPEC. Secure. At least 900 000bp in Fennoscandia, where declining. [Transit; it was common around habitation.] At least 40 were counted on Varanger Peninsula and 2 were seen in the Pasvik Valley.

[**(Eurasian) Tree Sparrow** *Passer m. montanus*. Non-SPEC. Secure. *c*650 000bp Sweden, *c*75 000 Norway, 8500 Finland. Increasing Norway, strongly Finland. Transit; in Norway, one was seen at the Ilene Reserve, 4 July, and 6 at Grimstad, 5 July.]

Chaffinch *Fringilla c. coelebs*. SPEC 4. Secure. At least 13.5Mbp Fennoscandia. Decreasing Finland. Highest density S Fennoscandia. [Transit; at least 17 were seen in Norway, and 3 in Finland.] One was in the Pasvik Valley, 30 June. Effectively it is replaced by **Brambling** *F. montifringilla* in the taiga zone, the ratio *coelebs:montifringilla* being 1:100 (in S Fennoscandia, that ratio is 100:1 in favour of *coelebs* [Hogstad & Väisäinen 1997]).

Brambling *Fringilla montifringilla*. Non-SPEC. Secure. Up to 6.5Mbp in Fennoscandia. Stable. Highest density N Fennoscandia. [Transit; two were seen W of Sveg/Lillehardel (Sweden), 20 June, and 15 in Finland.] Very common in the Varanger Peninsula birch forests.

Pine Grosbeak *Pinicola e. enucleator*. Non-SPEC. Secure. 33 000-56 000bp in Fennoscandia. Stable. Five were seen in the Pasvik valley, 30 June, 4 in flight and a first-summer male in a small pine tree. No call was heard.

[**Common (Scarlet) Rosefinch**. *Carpodacus e. erythrinus*. Non-SPEC. Provisionally Secure. At least 350 000bp Finland, 10 000 Sweden, 1000 Norway. Increasing. Transit; one male was seen at Kittilä, Finland, 21 June.]

[**Parrot Crossbill** *Loxia pytyopsittacus*. SPEC 4. Secure. At least 30 000bp in Fennoscandia. Fluctuating in Norway. Transit; at Trysil campsite, from a flock of 16 over-flying birds a deeper and slower call than that of the more familiar **Common Crossbill** *L. curvirostra* was picked out, which heard again soon after. The call was described as 'djuup', with a metallic resonance, rather than a clipped 'jup, jup, jup'. 6 were seen well at Ange, 3 July, (from a garage forecourt), and another 6 at Trysil, 4 July (all Norway).]

Common (Red) Crossbill *Loxia c. curvirostra*. Non-SPEC. Secure. At least 250 000bp in Fennoscandia. Fluctuating in Finland and Norway. [Transit; 14 were seen at Gullvik (Sweden), 21 June, and some were heard overhead at Trysil (Norway), 4 July.] A total of 23 was seen in the Pasvik Valley, 30 June/1 July.

(European) Greenfinch *Carduelis c. chloris*. SPEC 4. Secure. At least 150 000bp in Fennoscandia. Increasing, strongly so in Finland. [Transit; it was commonly seen.] 11 were seen between Vadsø and Vestre Jakobselv, 24/25 June.

(Common) Redpoll *Carduelis flammea*. Non-SPEC. Secure. At least 650 000bp in Fennoscandia.Can fluctuate up to 3 600 000bp. [Transit; the first subspecies encountered, *C. f. cabaret*, **Lesser Redpoll**, was seen or heard around Grimstad, Kristiansand (Knox *et al* 1997a), and was probably that present on the Ilene reserve, near Tønsberg, S Norway. The other subspecies, *C. f. flammea*, **Mealy Redpoll**, occupies Fennoscandia further N, such as those at Trysil, W of Sveg and Lillehardel and points north. A total of 15 was seen in Norway, Sweden, and Finland.] It was common on the Varanger Peninsula, but sometimes (Lansdowne *et al* 1991) was difficult to distinguish from **Arctic Redpoll**, *C. hornemanni (qv)*.

Arctic (Hoary) Redpoll *Carduelis hornemanni exilipes*. Non-SPEC. Provisionally Secure. 3000-25 000bp in N Fennoscandia. Fluctuating. Although common on the Varanger Peninsula (Knox *et al* 1997b), it was assigned an identity only if good views were to be had, limiting the total here to only 42. One other bird was identified in the Pasvik Valley.

(Eurasian) Siskin *Carduelis spinus*. SPEC 4. Secure. At least 1Mbp in Fennoscandia. Can fluctuate up to 4 500 000bp. [Transit; commonly seen as far as Gullvik (Sweden) 20 June, where 5 were seen.] 4 were in the Pasvik Valley.

[**(European) Goldfinch** *Carduelis c. carduelis*. Non-SPEC. Provisionally Secure. 5500-15 000bp in S. Fennoscandia. Declining Sweden and strongly so Finland. Transit; just one was recorded, N

of Sveg, Sweden, 20 June.]

[(Eurasian) Linnet *Carduelis c. cannabina*. SPEC 4. Secure. At least 12 000bp in Fennoscandia, mostly in Sweden. Declining, strongly so in Finland. Transit; two were seen at the Ilene reserve (Norway), 19 June.]

(Eurasian) Bullfinch *Pyrrhula p. pyrrhula*. Non-SPEC. Secure. At least 500 000bp in Fennoscandia. Increasing in Norway, fluctuating in Finland. [Transit; 4 were at Gullvik, 20 June.] Two were seen at the Vestre Jakobselv campsite, 24 June.

[Yellowhammer *Emberiza c. citrinella*. SPEC 4. Provisionally Secure. At least 1 750 000bp in Fennoscandia. Stable. Transit; 11 were seen in Norway, 2 in Sweden and 2 in Finland.]

Reed Bunting *Emberiza s. schoeniclus*. Non-SPEC. Secure. At least 1 2000 000bp in Fennoscandia. Declining slightly in Finland. [Transit; 12 were seen in Norway, and 4 in Finland.] A total of 7 was seen on the Varanger Peninsula, and on 30 June, 4 in the Pasvik Valley.

Lapland Bunting (Longspur) *Calcarius l. lapponicus*. Non-SPEC. Provisionally Secure. At least 320 000bp in Fennoscandia. Fluctuating in Finland. Typical of open tundra. a total of 55 was counted on the Varanger Peninsula. a nest containing 4 young being discovered on Store Ekkerøy on 27 Jun.

Snow Bunting *Plectrophenax n. nivalis*. Non-SPEC. Provisionally Secure. *c*100 000bp Norway, c60 000 Sweden. *c*4500 Finland (where declining). Common amongst the boulders of the tundra. a total of 57 was seen on the Varanger Peninsula. a nest containing 5 or 6 young being discovered 4km W of Skallnes on 27 Jun.

Summary

The team successfully surveyed the whole of the north and south coastlines of Varangerfjord (equivalent to the Bristol Channel area between Swansea around to Weston-super-Mare) as requested by WWT. They counted a minimum of 420 **Steller's Eider** and 36 **King Eider**. A total of 110 bird species was recorded on and around the

Table 1. Summary of King Eider sightings

24 June	2 adult males 5 first year males 16 females	Sheet 2435(2) Komagnes 049913	100m offshore moving NE along coast Rocky beaches
25 June	1 first summer male	Sheet 2435(3) Laksevup 005778 4km W of Vadsø)	
25 June	2 adult males eclipse 3 first summer males 6 females	Sheet 2535(4) Prestwigaren 205152 (1) (5km E of Persford)	Within 100m of shore Rocky beaches
26 June	1 female	Sheet 2535(4) Godkella 192159 (between Hamningberg and Prestwigaren)	

Note

1. 2 days later our team counted only 2 first year males and 2 females at Prestwigaren. A Finnish birder told us that he had counted approximately 100 **King Eider** in the Hamningberg area on 24 June.

Table 2. Summary of Steller's Eider sightings

23 June	Team L SC,WM,and JD. 2 males, 3 females. 7 males, 21 st summer males, 6 females. 10 males, 6 females.	Sheet 2435(2) 020907 (2km W Komagnes). 000895 (1km NE Skallelv). 996886 (Skallelv).	Rocky shore, sandy beach. Birds on the water.
23 June	Team 2: GB,MH and M 9 males, 1 female.	Sheet 2435(2) 938802 (Krampenes)	Rocky shore. Birds on shoreline.
23 June	Team 4: KC,NS,and KC. 11 males, 1 female. 1 1st yr males.	Sheet 2435(3) 058767 (Vadsø Harbour E). E Vadsø hbr.	Amongst rocky shoreline. Lone bird c300m offshore.
24 June	Team 1: SC,WM, JD. 3 females 5 females	Sheet 2535(4) 279093 (off W coast of Vardø island) 293075 (S end of Vardø)	Rocky shoreline. Birds amongst seaweed. Flew into Vadsø hbr 20m offshore.
24 June	Team 3: JB,AJ,TP. 6 ad males, 2 1st summer male, 1 female. 125 ad, 12 f, 10 1st summer, 46 unidentified. 1 ad, 1 f, 1 1st sum m. 3 adult males, 7 1st summer females.	Sheet 2535(4) 193970 (Kramvik). 225975 (Indre Kiberg). Great Kiberg. 245988 . (Great Kiberg)	Rocky shore, amongst seaweed.
24 June	Team 4: KC,NS,KC. 98 adult males, 6 1 st summer males, 7 female. 2 adult males, 1 female.	Sheet 2435(2) Krampenes. 085956 (Trollbukta, 2km E Komagyaer).	
24 June	Team 3: JB,AJ,TP. 17 adult males, 2 adult females, 5 1st summer males.	Sheet 2535(4) 238987 Great Kiberg.	
28 June	48 males, majority being adult males (one with radio transmitter), 5 females.	Sheet 2435(2) Ekkerøy.	Close inshore to sandy beach. with seaweed a few small rocks.

Table 3. Summary of White-tailed Eagle sightings

Records from E to W:

24 June	1 adult 2 sub-adults 1 adult	Opposite Vardø. Snartnes Bukta. Near Indre Kiberg. Near Kornagyaer (950078).
25 June	1 adult 1 adult and 2 second or third years birds 1 adult	2km NE of Mortnes on an inland bog, perched on a hummock in the middle of the large Stuorrajoeeggi bog, surrounded by birch forest, 7km E of Nesseby, & 3km inland (GR 770832, Sheet 2335(2)). 2 km E of Nesseby. 2 sub-adults were feeding on a fish carcass amongst rocks on an island exposed by the low tide. Perched on cliff-top overlooking the road, 4 km E of Nesseby (742826)
26 June	1 adult 1 adult	Near Persfiord (147156) By the shore at Svartnes.
27 June	1 adult	N of Vestre Jacobselv (905836).
28 June	1 third year bird 1 bird	Near Persfjord. At Nesseby.
29 June	1 bird	Seen flying low over the water from the N shore to the area on the S side in the vicinity of the promonto to the N of Gandvik.
1 July	1 bird	Pasvik Valley.

Varanger Peninsula, with an additional 54 species seen during the transit phase. All data regarding wildfowl and coastal birds has been passed to Dr Carl Mitchell at WWT, Welney.

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Appendices
1. Varangerfjord: Bird Species Fulfilling IBA Criteria.
2. Weather Report for RAFOS Varangerfjord Expedition 18 June - 6 July 2001.
3. Participants, Planning and Routes.
4. Map of Varangerfjord.

Appendix I

Varangerfjord: Bird Species Fulfilling IBA Criteria
Appendix 1 is compiled from Lislevand *et al* (2000)

Only one of the 20 criteria listed in Heath and Evans (2000) is required for qualification as an IBA. The 5 criteria met by Varangerfjord for designation as an IBA are that it:
1. Regularly holds significant numbers of a globally threatened species. (Criterion A1)
2. Is known to hold a significant assemblage of species whose breeding distributions are largely or wholly confined to one biome. (A3)
3. Is known to hold on a regular basis ≥1% of a biogeographic population of a congregatory waterbird species. (A4i)
4. Is known to hold a significant assemblage of species whose breeding distributions are largely or wholly confined to one biome. (A3)
5. Is known to hold on a regular basis ≥20 000 waterbirds or ≥10 000 pairs of seabirds of one or more species. (A4iii)
6. Is known to hold ≥1% of a flyway or other distinct population of a waterbird species. (B1i)

The species that fulfil one or more of the above criteria are:

Lesser White-fronted Goose	*Anser erythropus*	Passage Migrant	A1
Eider	*Somateria mollissima*	Wintering	B1i
King Eider	*Somateria spectabilis*	Wintering	A4i, B1i
Steller's Eider	*Polysticta stelleri*	Wintering	A1, A4i, B1i
Rough-legged Buzzard	*Buteo lagopus*	Breeding	A3
Gyrfalcon	*Falco rusticolus*	Resident	A3
Little Stint	*Calidris minuta*	Breeding	A3
Temminck's Stint	*Calidris temminckii*	Breeding	A3
Purple Sandpiper	*Calidris maritima*	Wintering	A4i, B1i
Bar-tailed Godwit	*Limosa lapponica*	Breeding	A3
Long-tailed Skua	*Stercorarius longicaudus*	Breeding	A3
Red-throated Pipit	*Anthus cervinus*	Breeding	A3
Arctic Redpoll	*Carduelis lapponicus*	Breeding	A3
Lapland Bunting	*Calcarius lapponicus*	Breeding	A3
Snow Bunting	*Plectrophenax nivalis*	Breeding	A3

About 80-90% of the European population of **Steller's Eider** gathers offshore, some on the fjord off Nesseby, but mostly further east (up to 112 000 individuals, including those offshore outside Varangerfjord). Even in summer, up to 1000 birds remain in the area. **King Eider** and **Eider** also winter in important numbers, as does **Purple Sandpiper** in the tidal zone. Breeding species include at least 10 of the 32 species in Europe that are restricted to the Arctic/ tundra biome (when breeding). An eleventh such species, **Scaup** *Aythya marila,* may also breed. In spring, the area is an important staging ground for migrating waders, especially **Knot** *Calidris canutus,* and there are good numbers of waders in autumn, such as **Dunlin** C. alpina (up to 10 000 individuals). **White-tailed Eagle** *Haliaeetus albicilla* (a species of global conservation concern) is resident in the Ekkerøy area (although numbers are too low to merit IBA criteria), and breeding colonies of **Kittiwake** *Rissa tridactyla* are also notable on Ekkerøy (c20 000bp) and Ranvika (c10 000bp).

Appendix 2

Weather Report for RAFOS Varangerfjord Expedition 18 June - 6 July 2001 Compiled by Gerry Bilbao

General

June had already been the hottest recorded locally, with 25°C being recorded mid-month. During the survey period, the weather was generally good, with the daytime air temperature between 8°C and 22°C. However, the wind-chill factor made it feel at least 10°C colder than the prevailing air temperature, this being particularly evident when the wind was from a northerly direction.

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Daily Weather Report

En route to Varangerfjord

18 June Departure, Newcastle to Kristiansand, Norway: Dry and sunny, with increasing cloud coverage. Temperature in Newcastle 19°C.

19 June Arrive Kristiansand, drive to Trysil, Norway: Dry and sunny. Midday temperature 24°C.

20 June Drive to Gullvik, Sweden: Dry and sunny, light rain mid-afternoon. Midday temperature 21°C.

21 June Longest day of the year. Drive to Kittilä, Finland: Dry, sunny and very warm after a cold start. Midday temperature 23°C.

22 June Drive to Varangerfjord, Arctic Norway: Departure, dry and sunny. Arrival, overcast with a moderate to fresh, cold easterly wind. Midday temperature 21°C.

Varangerfjord

23 June Dry with low cloud coverage and a thick sea mist until mid-afternoon, then clear with long periods of sunshine. Moderate to fresh easterly wind. Midday temperature 13°C.

24 June Overcast with light drizzle until mid-day, then dry with extensive sunshine. Cold, moderate northwesterly wind. Midday temperature 15°C.

25 June Dry, mild and overcast, with sunny periods in the afternoon. Light easterly wind. Midday temperature 14°C.

26 June Dry and overcast giving way to squally showers for a short period, then sunny by mid-afternoon. Variable moderate northwesterly to northeasterly wind. Midday temperature 14°C.

27 June Dry, sunny and very warm. Light westerly wind. Midday temperature 14°C.

28 June Dry, overcast with sunny periods. Light northeasterly wind. Midday temperature 12°C.

Neiden

29 June Drive to Neiden, Norway: Drizzle turning to heavy persistent rain, until late afternoon, then sunny periods. Midday temperature 14°C.

30 June Rain until mid-morning; sunny periods and infrequent light drizzle. Midday temperature 14°C.

1 July Rain overnight, clear at 0800; sunny spells with occasional light rain. Midday temperature 15°C.

Return from Varangerfjord

2 July Drive to Kemi, Finland: After a dry start, very heavy rain until mid-afternoon, then dry, warm and sunny. Midday temperature 18°C.

3 July Drive to Trysil, Norway: Dry and sunny with a single heavy rainstorm mid-afternoon. Midday temperature 20°C.

4 July Drive to Grimstad, Norway: Dry and sunny. Midday temperature 23°C.

5 July Drive to Kristiansand, set sail to Newcastle:. sunny and very warm. Midday temperature 24°C.

6 July Arrive in Newcastle: thick sea mist. Temperature on arrival 18°C.

Appendix 3
Participants, Planning and Routes

Wg Cdr K R Cowieson	Expedition Leader & Photographer HQ ARRC Rheindahlen
Wg Cdr W Morris	Deputy Leader, Joint Services Mountain Expedition Leader (Summer) [JSMEL (S)] HQDLO Ensleigh
Sqn Ldr M Hart	Treasurer RAF Waddington
Sqn Ldr N A Smith	Project Officer & Ornithological Recorder HQDLO
FS J Bryden	Project Officer & Expedition equipment RAF Innsworth
FS A Jones	JSMEL (S) RAF Episkopi
Sgt J Day	MT RAF Lossiemouth
Cpl T Powley	Medical Supplies RAF Leuchars
Cpl J Thompson	MT RAF Brize Norton
SAC K Cairns	MT RAF Lossiemouth
(All ranks and units correct as at the time of the expedition)	
Mr G Bilbao	Ornithological Expert, Weather Recorder
Mr S Christophers	Ornithological Expert

Planning
Once the scientific objectives for the expedition had been agreed, Flt Lt Phil Glendinning embarked on raising the necessary RAFAT paperwork in conjunction with 2 members of the expedition, WO Jim Bryden and myself. A total of 9 Servicemen and 2 civilians deployed in hired Light Delivery Vans (LDV), with the Expedition Leader, Wg Cdr Keith Cowieson deploying by air from Germany. Accommodation between 22 June and 28 June on the Varanger Peninsula was in 4 rustic cabins at the Christian Centre at Vestre Jacobselv, the nights of 29 June to 1 July were spent at a campsite at Neiden, (30km south west of Kirkenes), which was used as a base-camp for exploring the Pasvik Valley.

Routes Taken in Fennoscandia to and from Varangerfjord
Outbound

Day 1. June 19. Starting from Kristiansand 58° 03'N 8° 00'E (southernmost Norway on the north side of the Skagerrak) through Arendal 58° 27'N 08° 56'E to the Ilene Reserve, near Tønsberg 59° 16'N 10° 25'E and Espa 60° 35'N 11° 17'E to a camp site north of Trysil 61° 22'N 12°16'E. (the northeast of southern Norway, 25km from the Swedish border).

Day 2. From Trysil across the Swedish border via Särna 61° 40'N 13° 10'E and Ange 62° 31'N 15° 40'E to Umeå 63° 50'N 20° 15'E on the western Baltic shore then north to a camp site at Gullvik 64° 10'N 21° 00'E

Day 3. From Gullvik through Piteå 65° 19'N 21° 30'E to the Finnish border and then through Kemi 65° 46'N 24° 34'E to Kittilä 67° 40'N 25° 50'E.

Day 4. From Kittilä through Ivalo 68° 40'N 27° 40'E back into Norway to the base-camp site Vestre Jakobselv 70° 07'N 30° 05'E on the north side of Varangerfjord.

Total road distance outbound 2044km. From 22-28 June, the nearest sizeable towns to the base camp were Vadsø 70° 05'N 29° 47'E and Vardø 70° 20'N 30° 45'E. although numerous hamlets were visited or transited during the survey effort. On 29 June, the base camp was relocated to the south side of Varangerfjord at Neiden 69° 42'N 29° 25'E.

Return

The return journey was by much the same route, but using different campsites.

Day 1. From Neiden via Inari 68° 54'N 27° 05'E to a camp site at 65° 50'N 24° 30' near the head of the Baltic.

Day 2. From Kemiö into Sweden through Skellefteä 64° 47'N 20° 59'E and Sveg 62° 02'N 14° 20'E, across the Norwegian border to a camp site south of Trysil 61° 22'N 12°16'E.

Day 3. From Trysil south through Elverum 60° 54'N 11° 33'E to a camp site at Grimstad 58° 20'N 08° 35'E only 50km from Kristiansand.

Day 4. From Grimstad to the ferry at Kristiansand.

Total road distance return 2016km.

Appendix 4
Map of Varangerfjord