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Martin Godfrey**

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EDITORIAL

It is fitting that in this last Journal of the 20th Century we highlight the 2 aspects of the society that I think are our particular strengths. The 2 trip reports demonstrate the work we do in retrieving data from difficult locations on behalf of national bodies, as well as providing those who participate with the opportunity to do exciting birding. You will all have read Robin Springett's account of our adventures in the Flannans in the Newsletter and, whilst less "exciting" the West of Scotland trip was just as illuminating. The other articles celebrate the hard work members do on an individual basis. John Well's early observations on Pied Flycatchers highlights one of the more puzzling areas of bird coloration and behaviour whilst George Candelin's set aside study shows what valuable work concentrating on a specific problem and area can do. Frank Walker's paper is almost the exact opposite, as just one example of a huge amount of work done over a long period and wide area. His 2 fat volumes of data now in the library are just crying out for study, both interpretative and as an impetus for future trips. Falling membership notwithstanding we continue to produce outstanding work in ornithology – long may it continue.

Martin Godfrey

FLANNAN FLYBY – JUNE 1998

by Squadron Leader Martin Godfrey

Introduction

The Flannan Islands consist of a collection of 20 or so uninhabited rocky islands some 20 miles off the West Coast of the Isle of Lewis in the Outer Hebrides. The islands are clustered in 3 main sub-groups; Eilan Mor, Soaray and Roareim. All have substantial numbers of breeding seabirds with an extensive colony of Puffins on Eilan Mor and of Gannets on Roareim. The islands are difficult to access and JNCC were concerned that recent bird survey results were far from complete. A team of 10 RAFOS members, lead by Squadron Leader Tony Marter, mounted an expedition over the first 2 weeks of June 1998 to attempt to remedy this deficiency.

Purpose

The purpose of the expedition was to survey the seabirds and try out techniques for censusing night flying Petrels using a combination of mist nets, tape lures and night vision equipment. Because of the remoteness of the islands and difficulty of access there would also be a substantial element of adventurous training, with insertion and recovery by small boat, inshore boatwork for some of the surveys and the need to take all materiel necessary for life with the expedition.

Team Members

Squadron Leader Tony Marter	Team Leader
Group Captain Robin Springett	
Squadron Leader Martin Godfrey	
Squadron Leader Clive Watson	
Warrant Officer Jim Bryden	
Warrant Officer Chris Sparkes	
Flight Sergeant Al Brimmell	
Chief Technician John Wells	
Corporal Dave Slater	
Mr Jerry Bilbao	

The Survey

After a lengthy trip to Stornoway, bad weather, which was to dog the expedition, delayed departure for Eilan Mor, the chosen base, for 24 hours. After an uneventful crossing by fishing boat the party landed by rubber boat using the western landing area. The rubber boat was small and underpowered making landing difficult, especially the transfer of stores and equipment. Assistance, in the form of a RIB from a passing survey ship, helped reduce the problem to manageable proportions. Once landed we began the arduous task of porting all of the equipment up a steep rock path to the top of the island, some 330 feet, where camp was set up. Standing ropework was necessary where the lower part of the path had been washed away. As well as tents for individual team members (2 for Chris Sparkes!) we built a substantial basha

This is a detailed map of the Outer Hebrides archipelago. The main island shown is Lewis and Harris, which is divided into several regions: FLANNAN ISLES at the north; LEWIS AND HARRIS in the center; BERNERAY at the south; NORTH UIST further south; and SOUTH UIST at the very bottom. To the west of these islands are the smaller islands of the Outer Hebrides, including Easay. The map features numerous geographical labels, including rivers (River Arndel, River Coll, River Laxdale, River Greata, River Lakoy, River Canon, River Heulin, River Applecross), lochs (Loch Langavat, Loch na Scaravall, Loch Treilaval, Loch Suainaval, Loch Morsgail, Loch a' Ghlinne, Loch Steiseval, Loch Fada, Loch Duargrich, Loch Meal), bays (Broad Bay), and other locations like Clisham, Meavaig River, Laxadale Lochs, and The Storr. The map also indicates the Mull of Galloway, the Mull of Kintyre, and the surrounding waters of the Atlantic Ocean and the Minch.

from a tarpaulin to keep our stores under and provide a sheltered cooking area. This proved invaluable in the wet and windy weather we experienced.

Despite bad weather preventing landing on any of the other islands the survey work was very successful. The Puffin census was carried out by means of mapping the colony and taking sample quadrats. This gave a mean of some 42000 nest burrows, which indicates a healthy upward trend in the Puffin population. Cliff nesting birds were counted directly either from the sea or, where practical, the land. Additionally the Gannet colonies on Roareim were photographed in black and white so that counts from pictures could be taken as well. All of the seabirds seemed to have healthy colonies. The expedition was probably a couple of weeks early for breeding petrels, nevertheless the techniques developed using night vision equipment to detect the birds and tape lures and mist nets to catch them proved to be very successful with small numbers of both Leach's and Storm Petrels being caught.

The 2 man ringing team also had a "day job" catching and ringing the many small bird species on the islands as well as a substantial number of Puffins. These latter are too strong and heavy for mist netting and are caught individually in something rather like a fisherman's landing net. Indeed the RAFOS Chairman, Group Captain Robin Springett, proved to be particularly adept at this arcane art. As well as the expected Wheatear and Rock and Meadow Pipits, Eilan Mor produced a number of surprises including a "flavissima" Yellow Wagtail, a Scarlet Rosefinch and a Quail! Ample time on the islands also allowed the author to carry out a plant survey. All of the survey results, together with details of the methods used, are attached as annexes to this paper.

Bad weather made getting off the Islands pretty tricky, with substantial damage to one rubber boat, but the assistance of a retired lifeboatman in setting up static lines made the eventual extraction safe, if adventurous.

A Note on Logistics

Tents from the Army store at Thatcham proved to be of poor quality and the majority leaked. This gave considerable difficulties as the opportunity to dry kit was very limited and in future consideration should be given to supply from other sources. All materiel to support the expedition, including food and water, had to be taken with us. Weight constraints on the boat meant that we left some food to be delivered later. This proved unreliable as bad weather prevented the boat from visiting on most days. Lack of space on the boat also meant that we had to leave some personal kit behind. Similarly the inability of the boat to land or take off personnel for most of the time we were on the islands seriously limited the amount of work we could do. The 2 days boat use we had enabled us to complete most of our primary objectives but survey of the more remote islands, and secondary objectives of landing on other islands for survey, could not be carried out. Future expeditions of this kind should try and get a larger and more powerful primary boat, preferably with a steel hull and a captain better able to work close inshore. He should also have a powerful rubber boat, such as a RIB, for inshore work. The one we had was woefully underpowered and only marginally safe.

Aknowledgements

We would like to thank the Northern Lighthouse Board and their staff, both for help and use of facilities, without them life would have been a great deal more difficult. We would also like to thank JNCC and the SNC both for the opportunity to work on the islands and the advice and data which they provided, making the planning a great deal easier.

Annexes:

- A. Survey Methods and Results.
- B. Record of Non-Survey Bird Species.
- C. Ringing Report.
- D. Plant Records

ANNEX A

PUFFINS ON EILAN MOR

METHODS

Previous studies of Puffins on Eilan Mor (Thompson 1996, Murray 1995) have used different sampling techniques and have produced substantially different results. Murray used fixed transects through parts of the colony whereas Thompson used random quadrats. For this study it was decided to use the same techniques as Thompson; as the quadrats are chosen randomly this gives a better chance of exactly reproducing the technique in future studies.

To enable their area to be calculated and extent recorded the outlines of the main Puffin colonies were mapped from the ground. As it was apparent that burrow density varied considerably the island was divided into 3 areas of different density. McPhails Bothy at the western end of the island was most dense, then the fringes of the island and its eastern end and around the lighthouse, with the least dense areas being in the centre of the island (see map). The area of each sector was calculated by superimposing a mm grid on the map. It was decided to use the stratified sampling technique (Bibby et al 1992, Walsh 1995) to set out 30 20 square metre quadrats chosen randomly using the random number button on a Sharp EL-546L calculator. Apparently occupied burrows were counted in the area of the quadrat, swept out by a rope rotated around a pole.

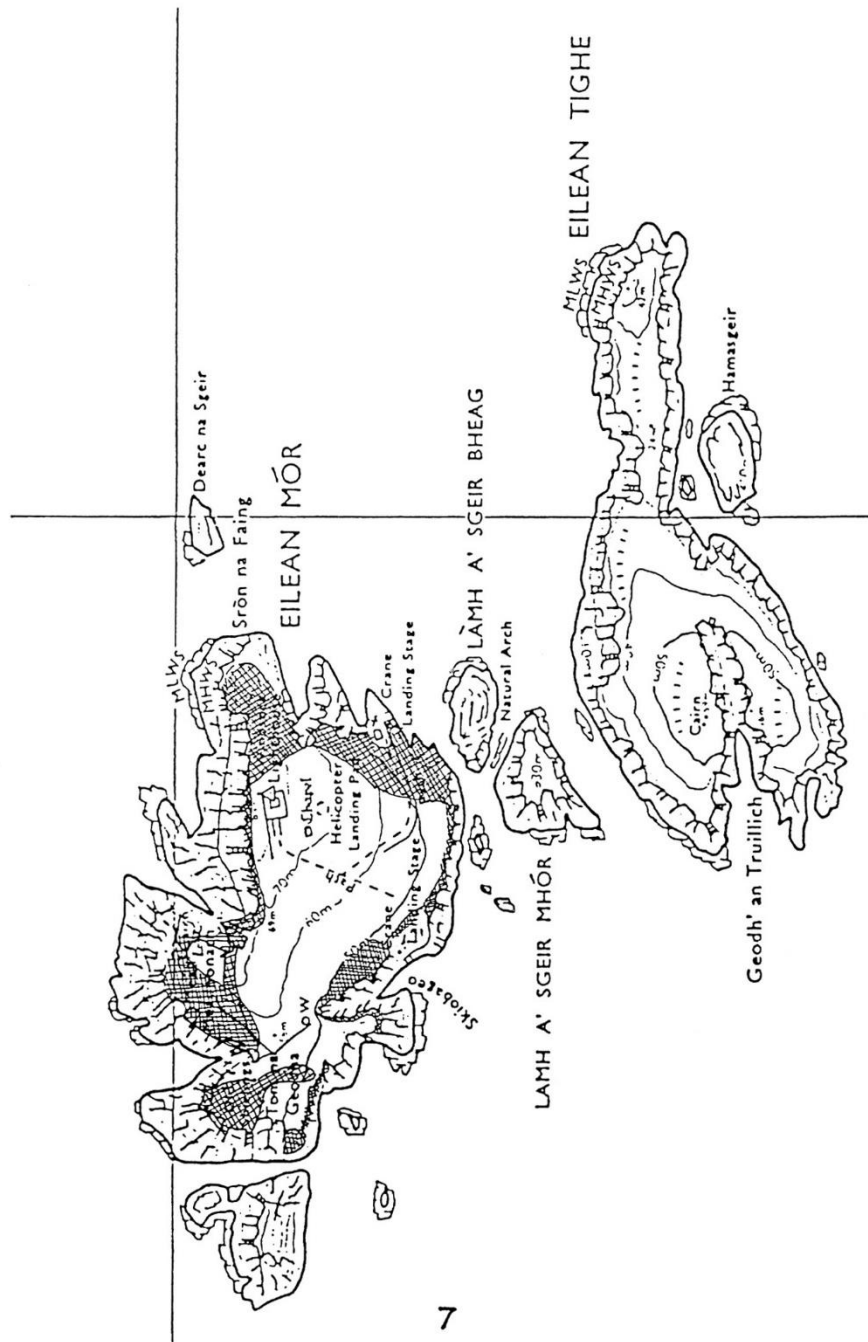
As it was obvious both to Thompson and to us that burrow density seemed to be highly variable two additional samples were taken, each of 15 quadrats, one at McPhails Bothy and the other at the eastern end of the island.

RESULTS

ZONE	ESTIMATED AREA M²	MEAN DENSITY OF OCCUPIED BURROWS PER M²	ESTIMATED TOTAL NUMBER OF OCCUPIED BURROWS	STANDARD ERROR OF ESTIMATE
McPhails Bothy	5000	1.98	9900	1600
Lighthouse and fringes	32000	0.95	30400	5918
Low density	50000	0.05	2500	737
TOTAL			42800	8255

These figures give 95% confidence limits for the total population of between 26620 and 58979 which are higher than either of the 2 previous studies quoted above.
(Statistical techniques as per Fowler and Cohen.)

PUFFIN COLONIES ON EILAN MOR



DISCUSSION

Although our area estimates were somewhat different from those of Thompson, in particular we recorded more burrows on Meall Meadhonach, I believe that the main reason for the difference in results is our substantially greater mean density record for the 'lighthouse colony'. Thompson has only $0.36/\text{m}^2$ as against our $0.95/\text{m}^2$, indeed using her density figure would bring us out very close to her figure. We are, however, confident in our results as the second sample in this area, taken to look at variability, came up with pretty much the same density figure. The highest burrow density in this colony seemed to be on the slope above and below the path leading to the east landing stage with a high of $2.45/\text{m}^2$. Signs of recent digging in this area may mean that the population is expanding on its western fringe into largely unoccupied ground. Similar fresh digging was evident on the south east fringe of the McPhails Bothy colony. One possible source of error might be the confusion between Petrel burrows and Puffin burrows. Although few Petrels were caught they were present at the lighthouse end of the island and counting their burrows cannot be ruled out.

VARIABILITY

As anticipated burrow density in McPhails Bothy and the lighthouse colony was very variable with frequency distributions as follows:

FREQUENCY DISTRIBUTION - McPHAILS BOTHY	
NO OF BURROWS	FREQUENCY
0-10	3
11-20	3
21-30	1
31-40	2
41-50	0
51-60	1
61-70	1
71-80	4

FREQUENCY DISTRIBUTION - LIGHTHOUSE COLONY	
NO OF BURROWS	FREQUENCY
0-10	2
11-20	8
21-30	2
31-40	0
41-50	3

SEABIRDS ON THE EASTERN FLANNAN ISLANDS

METHODS

The counts were carried out using the methods described in the Seabird Monitoring Handbook (Walsh et al 1995) and recorded on the Seabird Colony Register data sheets. Counting was confined to the eastern group of the Flannan Islands, dominated by Eilean Mor and Eilean Tighe, and the more westerly island of Roareim. Most of the work was done from the sea, using a small fishing boat. However a number of counts of Eilean Mor and associated stacks were repeated from the land. For convenience in counting the main islands were divided into sectors (see map) and these sectors recorded separately on data sheets.

In addition to the more conventional direct count technique a series of overlapping black and white photographs of the Gannet colony on Roareim were taken. These produced large prints which were used to count the individual birds.

RESULTS

The results presented here are a summary, the full set of data sheets and accompanying map have been deposited with the Society Library for further study.

EILEAN MOR (excluding West End Stack)

SPECIES	NUMBER	1996	1988
Fulmar	1096	936	428
Shag	185	41	64
Lesser Black-Backed Gull	1	3	0
Herring Gull	14	8	4
Great Black-Backed Gull	3	0	15
Kittiwake	1292	873	1014
Guillimot	1646	1738	1734
Razorbill	706	871	625

EILEAN MOR (West End Stack)

SPECIES	NUMBER	1996	1988
Fulmar	62	93	155
Shag	1	0	0
Lesser Black-Backed Gull	1	0	0
Herring Gull	12	0	0
Great Black-Backed Gull	3	0	0
Kittiwake	9	0	0
Guillimot	2331	2666	3073
Razorbill	18	127	104

LAMH A SGEIR MHOR

SPECIES	NUMBER	1996	1988
Fulmar	235	1774	227
Shag	4	7	4
Herring Gull	1	0	0
Great Black-Backed Gull	1	0	1
Lesser Black-Backed Gull	0	1	0
Kittiwake	118	0	0
Guillimot	610	195	880
Razorbill	11	44	192

LAMH A SGEIR BHEAG

SPECIES	NUMBER	1996	1988
Fulmar	422	180	309
Shag	4	0	0
Kittiwake	0	86	171
Herring Gull	1	0	0
Great Black-Backed Gull	2	1	1
Guillimot	139	242	215
Razorbill	6	51	43

EILEAN TIGHE

SPECIES	NUMBER
Fulmar	395
Shag	421
Lesser Black-Backed Gull	7
Herring Gull	5
Great Black-Backed Gull	16
Kittiwake	310
Guillimot	1431
Razorbill	131

HAMASGEIR

SPECIES	NUMBER
Fulmar	5
Lesser Black-Backed Gull	6
Herring Gull	6
Kittiwake	127
Guillimot	71

GEALTAIRE BEAG

Nil

GEALTAIRE MOR

SPECIES	NUMBER
Shag	401
Herring Gull	2
Great Black-Backed Gull	1

ROAREIM

SPECIES	NUMBER
Fulmar	320
Gannet	1513
Shag	42
Kittiwake	39
Guillimot	870
Razorbill	8
Black Guillimot	5

Photographic count of Gannets – 1238.

PETRELS

The survey was too early in the year for a meaningful survey of petrels, however Night Vision Goggles showed the presence of these birds after dark and our ringing team were able to net small numbers of both Leaches and Storm Petrels.

REFERENCES

- Bibby et al 1992: Bird Census Techniques, Academic Press.
Fowler and Cohen: Statistics For Ornithologists 2nd Edition, BTO.
Murray S 1995: Increases in the number of Puffins at Eilean Mor and North Rona, Outer Hebrides. *Seabird*, 17:32-35.
Thompson K 1996: Unpublished results.
Walsh et al 1995: Seabird Monitoring Handbook for Britain and Ireland, JNCC.

ANNEX B

NON-SURVEY SPECIES RECORD

A record was made of the bird species found on Eilean Mor. This involved a comprehensive sweep of the upper vegetated region of the island by a team of observers with every bird recorded on a large scale map. Successive counts were compared to establish the total resident breeding population. We were unfortunately unable to land on Eilean Tighe to conduct similar counts due to adverse weather conditions during our stay. Of particular interest on this island were breeding Eider and Great Skua.

The census results together with casual observations from other islands in the group are summarised in the systematic list below. As can be seen, there was a notable fall of passerines on the 6th June caused by gale force north-easterly winds coupled with poor visibility. Seabirds subject to the main survey are not included and are detailed elsewhere in the report.

SYSTEMATIC LIST All observations refer to Eilean Mor unless otherwise stated.

Manx Shearwater *Puffinus puffinus*

Birds seen most days from the island, particularly in the sounds between Eilean Mor and the western group of Roareim and Eilean a' Ghoba. Groups of up to 12 birds sighted.

European Storm Petrel *Hydrobates pelagicus*

Using tape lures, 9 birds were mist-netted on 11 June and subsequently ringed, including one control. Birds calling from burrows were heard and a single bird was seen to enter a burrow just below the south wall of the Lighthouse. See note at the end of the systematic list.

Leach's Petrel *Oceanodroma leucorhoa*

Using tape lures, 8 birds were mist-netted and subsequently ringed on 7 June in the area just to the west of the old railway track and 7 were mist-netted and subsequently ringed on 11 June from the slopes below the lighthouse and by the helicopter landing site. See note at the end of the systematic list.

Greylag Goose *Anser anser*

5 June. Two birds recorded on Roareim during a seabird census.

Eider *Somateria mollissima*

Observations from Eilean Mor indicated that females were sitting on nests on Eilean Tighe but we were unable to quantify the extent of breeding.

6 June. Six adult males and one female in the sea.

7 June. 11 adult males plus one female with two young in the sea.

Kestrel *Falco tinnunculus*

5 June. One female overflew the island.

Quail *Coturnix coturnix*

6 and 11 June. One bird flushed.

Oystercatcher *Haematopus ostralegus*

Four pairs defended territory throughout the expedition. Two pairs were feeding two juveniles each. The breeding success of the remaining pairs was unknown.

Ringed Plover *Charadrius hiaticula*

Two birds, presumably a breeding pair were present throughout.

Golden Plover *Pluvialis apricaria*

5 June. A group of three birds seen overflying and subsequently landed on the island.

Dunlin *Calidris alpina*

One adult was present throughout with no evidence of breeding activity.

Snipe *Gallinago gallinago*

8 June. One bird was flushed during a census.

Whimbrel *Numenius phaeopus*

4 and 11 June. One bird was recorded on Eilean Tighe and subsequently on Eilean Mor, presumably the same bird.

Turnstone *Arenaria interpres*

Up to seven were observed near the waterline throughout.

Arctic Skua *Stercorarius parasiticus*

Both pale and dark phase birds regularly seen offshore in small numbers. Whilst observed feeding in the vicinity of the Flannan Islands, there was evidence of an evening roost passage from St Kilda to the mainland.

Great Skua *Stercorarius skua*

At least three birds appeared to be sitting on nests on Eilean Tighe based on observations from Eilean Mor. Up to nine birds were present throughout.

Black-headed Gull *Larus ridibundus*

5 June. One bird was recorded.

Collared Dove *Streptopelia decaocto*

6 June. One pair was observed but not seen subsequently. From 8 June one sick bird minus tail was present. This bird was later trapped and released unringed.

Swallow *Hirundo rustica*

One pair were breeding in a lighthouse outbuilding. Up to four birds were present throughout.

House Martin *Delichon urbica*

Possibly cliff nesting, at least two birds were present throughout.

Meadow Pipit *Anthus pratensis*

An estimated 10 - 12 breeding pairs were present. One nest with five eggs was found in a shallow scrape in the grass. A possible hybrid Meadow/Rock Pipit was trapped on 11 June. The specific details are presented in an article below.

Rock Pipit *Anthus petrosus*

An estimated 20 - 25 breeding pairs were present. A possible hybrid Meadow/Rock Pipit was trapped on 11 June. See below.

Yellow Wagtail *Motacilla flava flavissima*

11 June. One male was recorded.

Pied Wagtail *Motacilla alba*

Two birds, a male and female were present throughout although there was no confirmation of breeding.

Northern Wheatear *Oenanthe oenanthe*

An estimated 6 - 7 breeding pairs were present.

Redwing *Turdus iliacus*

6 June. One bird was recorded.

Garden Warbler *Sylvia borin*

6 June. One bird was trapped and ringed.

Blackcap *Sylvia atricapilla*

6 June. One male was recorded.

Willow Warbler *Phylloscopus trochilus*

4 June. One bird was trapped and ringed.

Chiffchaff/Willow Warbler

6 June. One unringed bird was seen.

Spotted Flycatcher *Muscicapa striata*

6 June. One bird was recorded.

Raven *Corvus corax*

One pair were present together with one young on a nest.

Starling *Sturnus vulgaris*

Mainly a cliff nester, nests were found under the concrete stairway from the SW landing stage. On 5 June 27 birds were observed mobbing a Kestrel and on 11 June 54 birds were recorded feeding on Eilean Tighe.

Scarlet Rosefinch *Carpodacus erythrinus*

6 and 11 June. A first summer male was found and attracted to a tape lure but successfully evaded capture.

POSSIBLE ROCK AND MEADOW PIPIT HYBRIDISATION

On 11th June a pipit was mist netted near the lighthouse. A cursory inspection during extraction indicated that the bird was a Rock Pipit *A. petrosus* with its heavy bill and olive green upper surfaces. Closer inspection showed that the bird possessed characteristics of both Rock and Meadow Pipit *A. pratensis*. The hind claws measured 12 mm and the tarsi were pale brown consistent with Meadow Pipit. Rock Pipit has however been recorded with pale red-brown tarsi in summer and early autumn (Svensson 1992). The wing length was 89 mm which is consistent with Rock Pipit, the wing point was at the 2nd, 3rd and 4th primaries and primary wing feathers 3, 4 and 5 were emarginated. The bill length was 17 mm, bill width at the nostrils was 4.6 mm and the depth was 4.2 mm again consistent with Rock Pipit. The outer retrices were extensively off white for the length of the feather ie whiter than *petrosus* but without any pure white typical of *pratensis*. **Overall plumage tone however was not particularly useful as the Hebridian subspecies of *A. pratensis* is a darker bird more closely resembling *A. petrosus* than the mainland subspecies.**

Lack of familiarity prevents attributing plumage colour characteristics to a particular species. The only characteristic undoubtedly belonging to *A. pratensis* was the hind claw length. The remaining characteristics were ambiguous although the head and bill

dimensions rule out vagrant species to our satisfaction. On the balance of probability the bird received ring number 2118335 (size A2) as a Rock Pipit and was photographed. It is not known whether hybridisation has been previously recorded but this appears to be a possibility.

NOTES ON STORM AND LEACH'S PETRELS

Using night vision goggles birds could be seen flying around the area to the west of the old railway track, the lighthouse and its lower slopes and the helicopter landing area. The birds were first seen around midnight and by 0230hrs no further sightings or mist-nettings occurred. On more than one night light scrabbling sounds could be heard on the fly sheet at the base of expedition members' tents. The tents were located just east of the old railway track near the chapel and it is thought that these noises could be attributed to petrels trying to enter burrows covered by tents. It was estimated that the expedition was about 4 weeks too early to allow an accurate estimate of colony sizes to be made or for the ringing of juveniles.

Plenty of birds were seen in the catchment area and there were many indications of bird migration. A single Willow Warbler was caught as it fed along the wall of the lighthouse.

Up to 8 individual Wheatear were observed in the area of the helicopter pad, of which 3 were caught. Puffins were again targeted and techniques established for handling this particularly difficult species.

Ringling total for the day:	Puffin 22	Meadow Pipit 1
	Wheatear 3	Willow Warbler 1
	Rock Pipit 2	

Day 3 – Friday 5 Jun 98

Weather: overcast, temperature 10°C, wind 080°C, 15 kts gusting 20 kts.

Heavy rain and drizzle all day resulted in very little ringing activity, however, at 1720 hrs the weather front passed through and the nets were unfurled when the wind abated. A good number of migrants were seen with a single Swallow being caught. Good numbers of Wheatear, Meadow Pipit and Rock Pipit were seen.

Ringling total for the day:	Puffin 3	Meadow Pipit 3
	Swallow 1	

Day 4 – Saturday 6 Jun 98

Weather: clear skies with visibility 30kms, temperature 10°C, wind calm.

The morning started well with good numbers of migrants on the island. Redwing, Blackcap, Spotted Flycatcher and Garden Warbler were all seen in the vicinity of the lighthouse. In addition, however, was the much more unusual sightings of Common Rosefinch, Quail and Snipe.

Ringling total for the day:	Rock Pipit 2	Meadow Pipit 3 (plus 2 retraps)
	Wheatear 2	Garden Warbler 1
	Pied Wagtail 1	Starling 1

Day 5 – Sunday 7 Jun 98

Weather: heavy rain, temperature 8°C, wind 010° 25 kts gusting 40 kts.

No mist netting carried out during the day but some 'fledging' for Puffins was carried in the early evening and the first attempt to use tape lures for Storm and Leach's Petrels from midnight onwards was undertaken.

Ringling total for the day:	Puffin 3	Leach's Petrel 8
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ANNEX C

WEATHER AND RINGING REPORT FOR PERIOD 3-13 JUN 98

Introduction

One of the main ringing aims of the expedition was to record details of breeding puffins and the 2 species of petrels on the main island, Eilean Mor. The main method used was mist netting for the petrels using tape lures and 'fledging' using a standard coarse fisherman's landing net. Mist nets for other species were set at various locations on the island depending on wind direction and speed. These nets were set throughout the expedition only being furled when bad weather dictated. One set of nets was kept in reserve in case a particular bird was found outside the standard net coverage.

Puffin catching was restricted to the south-facing colony near the railway track leading down to the east landing stage. Petrel mist netting was undertaken in the following areas; just to the east and west of the upper section of the railway track leading up to the lighthouse, around the helicopter landing pad and on the southern slopes near the lighthouse.

It should be noted that information on wind speed and direction were obtained using a hand-held anemometer at the camp site which was situated on the south-facing slopes below the lighthouse. Thus, the readings are well below the true wind speed as the camp was sheltered from the main prevailing northerly winds by the lighthouse and the north-facing cliffs.

Results

The composite details of the birds which were ringed are at the end of this Annex. In summary, a total of 103 birds of 12 species were ringed, of which 3 were later re-trapped and a further 2 were controlled ie, after being mist netted they were found to have been ringed at another location and on a different date. Copies of the control records associated with these 2 birds are attached to this Annex.

Chronological Report on Weather and Ringing Activities

Day 1 – Wednesday 3 Jun 98

Weather: bright and sunny, wind from 010° less than 5 kts.

Due to the requirement to set up base camp and to carry out a detailed reconnaissance around the island it was very late into the afternoon before ringing activities could commence.

Ringing total for the day: Puffin 1

Day 2 – Thursday 4 Jun 98

Weather: bright and sunny.

Day 6 – Monday 8 Jun 98

Weather: temperature 9°C, wind 310° 15 kts.

Weather unsuitable for mist netting, some 'fledging' was carried out during late afternoon.

Ringling total for the day: Razorbill 1 Kittiwake 1

Day 7 – Tuesday 9 Jun 98

Weather: misty with very heavy rain for most of the day, visibility less than 800m, temperature 8°C, wind 360° 10 kts gusting 30 kts.

Probably the worst day's weather for the expedition. One Puffin was caught as a demonstration of ringing techniques for passengers from the MV Caledonian Star.

Ringling total for the day: Puffin 1

Day 8 – Wednesday 10 Jun 98

Weather: heavy rain for most of the day, temperature 8°C, wind 010° 20 kts gusting 42 kts.

No mist netting possible, however, some 'fledging' was undertaken for a short period.

Ringling total for the day: Puffin 1

Day 9 – Thursday 11 Jun 98

Weather: mild and sunny, temperature 10°C, wind 360° 15 kts gusting 20 kts.

The last ringing day for the expedition which provided great interest with the 'controlling' of a Puffin, previously ringed at the same colony site, by the old railway track leading down to the east landing stage, on 16 Jul 87. In addition, during mist netting of petrels that evening, a Storm Petrel was also 'controlled' which had been previously ringed on the 5 Jul 87 on the Hebridean Island of North Rona some 138 km away.

Ringling total for the day:	Storm Petrel 9 (inc 1 control)	Wheatear 2
	Meadow Pipit 2 (inc 1 retrap)	Leach's Petrel 7
	Puffin 26 (inc 1 control)	Rock/Meadow
		Pipit 1

Ringling Totals

Species	Ringed	Retrapped	Controlled	Total
Puffin	53	0	1	54
Willow Warbler	1	0	0	1
Rock Pipit	5	0	0	1
Wheatear	8	0	0	8
Meadow Pipit	8	3	0	11
Starling	1	0	0	1
Pied Wagtail	1	0	0	1
Garden Warbler	1	0	0	1
Leach's Petrel	15	0	0	15
Razorbill	1	0	0	1
Kittiwake	1	0	0	1
Storm Petrel	8	0	1	8
Totals	103	3	2	108

ANNEX D

EILEAN MOR, FLANNAN ISLANDS, PLANT RECORDS

VASCULAR PLANTS

(All names according to Kent: List of Vascular Plants of the British Isles, 1992)

Species

Agrostis stolonifer
Agrostis capillaris
Airia praecox
Armeria maritima
Atriplex sp.
Cerastium diffusum
Cerastium glomeratum
Cerastium fontanum ssp. holosteoides
Cochlearia officinalis
Festuca rubra
Glaux maritima
Holcus lanatus
Plantago coronopus
Plantago maritima
Poa annua
Poa pratensis
Poa trivialis
Ranunculus acris
Ranunculus ficaria
Rumex acetosa
Rumex crispus
Sagina maritima
Sagina procumbens
Silene uniflora
Stellaria media
Tripleurospermum maritimum

Note: 'Classic' plants of *Cochlearia officinalis* were quite common on steep rocky ground and cliffs, however, in the grass which covered the top of the island a much smaller form resembling the '*Cochlearia atlantica*' of older floras was abundant. This dimorphism would merit further study.

BRYOPHYTES

(Names in accordance with: Smith The Moss Flora of Britain and Ireland 1978)

Bryum pallescens
Bryum capillare
Bryum argenteum
Bryum sp
Barbula unguiculata
Barbula convoluta
Eurynchium praelongum
Tortula canescens
Ulota phyllantha

WEST OF SCOTLAND WINTER SURVEY 1999

by Squadron Leader Martin Godfrey

Introduction

The Wildfowl and Wetland Trust have no data for the occurrence of wintering wildfowl on the sea lochs of North West Scotland. RAFOS agreed to carry out a baseline survey, using WeBS methodology, of the area from Skye northward to establish what kind of species and numbers could be expected. This study could then be followed up, if necessary, with a more detailed look. A party of 7 RAFOS members, lead by Sqn Ldr Martin Godfrey, completed a survey of the coastline, from Lochcarron in the south to Scourie in the north, over the period 27 Feb – 6 Mar 99.

Members

Squadron Leader Martin Godfrey	Leader
Squadron Leader Nick Smith	
Warrant Officer Jim Bryden	
Corporal Dave Slater	
Corporal Mick Myers	
Mr Martin Wightman	
Mr Jerry Bilbao	

Purpose

The Wildfowl and Wetland Trust were anxious to get a rapid baseline survey of Ducks, Divers and Grebes wintering on the sea lochs off the North West coast of Scotland to give an indication of what might be present. This could be followed up, if appropriate, by a full WeBS survey. An additional task was to look out for flocks of Barnacle Geese and provide 6 figure grid references for their location. The late winter weather and remote, and often difficult, terrain enabled all expedition members to practice a variety of AT skills.

General

The expedition was based at Aultbea, on Loch Ewe. This is an old RN base and consists of a series of Nissen huts with cooking facilities, toilets and showers. Although basic the camp is warm and dry and an ideal base in adverse conditions as hot meals can be produced and kit dried with ease. Road communications from the camp, which is right on the coast, to the rest of the coastal area is good and it is recommended that RAFOS consider this as a base for future expeditions. Most rations were taken with us with fresh food easily obtained nearby. Distance from base meant that one team spent 2 nights away with a leaky tent (shades of the Flannans!) making life uncomfortable for those who chose not to sleep in the van. Future surveys in this area should carry one or two reliable tents to cover the inevitable nights away.

Given the amount of ground to be covered it was decided to split the party into 2. A team consisting of Jim Bryden, Nick Smith and Martin Wightman would survey

North of Loch Broom as far as Scourie whilst the remainder would survey Loch Broom south as far as Red Point on Gairloch. In the event the “Northern team” also surveyed the area around Loch Torridon.

The weather was variable, with wind, snow and hail, but outside the “weather” visibility was generally good so this did not seriously hamper the survey work. Similarly, despite some deep snow, there were sufficient outstanding features on the ground to make navigation fairly straightforward. In accordance with the WWT brief we confined our formal recording to duck, divers and grebes although members recorded other birds as well on an informal basis. Perhaps the biggest surprise was the small number of birds seen at all locations, with Eider and Merganser having the largest numbers, at 791 and 158 respectively, while there were only 10 Common Scoter.

The close proximity of Gruinard Bay gave us a golden opportunity to look for White Tailed Sea Eagle, a much-desired tick for Nick Smith, which we all saw at least once. The nicest find, however, was a leucistic Great Northern Diver on the loch right outside the camp. Lacking all the normal colour clues this bird gave rise to much discussion, with Dave Slater, who found the bird, initially going for male Smew or Whooper Swan (!) before we had all studied the bird in some detail and agreeing on the species. When it was in convoy with 2 “normal” Great Northerns the size and shape were pretty clear; in fact one of the main benefits of the trip was the substantial improvement in everyone’s Diver identification skills. A description of this bird is published elsewhere in the Journal.

Survey Methods and Results

The teams used the WWT WeBS recording methodology. This involves dividing coastline into easily manageable blocks, up to 5 km long, and counting all target species seen. The data are recorded on a WeBS form, which provides for supplementary data on weather, state of tide, visibility and so on. All sheets, accompanied by maps of the survey areas, have been sent to the WWT for analysis. The Society library will hold duplicate sheets.

Total Counts

<u>Bird</u>	<u>Total Number</u>
Red Throated Diver	21
Great Northern Diver	49
Black Throated Diver	68
Little Grebe	7
Slavonian Grebe	12
Long Tailed Duck	18
Shelduck	9
Wigeon	52
Teal	29
Mallard	104
Eider	791
Common Scoter	10

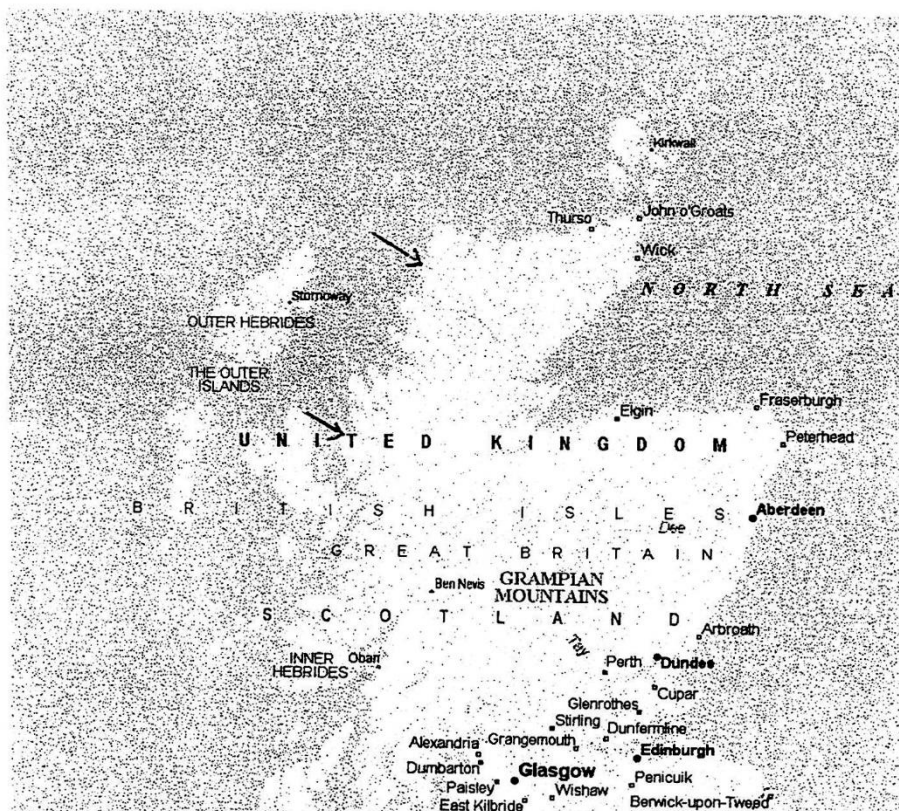
Goldeneye	43
Red Breasted Merganser	158
Gooseander	3

Notes

Barnacle Geese:- 3 flocks were found, one each of 36 and 10 at Upper Badcall and one of 39 at Gruinard Bay.

The salmon fishery at Achintraid attracted a very large number of birds with over 1000 each of Guillemots and Shag.

SURVEY AREA



SIGHTING OF LEUCISTIC GREAT NORTHERN DIVER (*Gavia Immer*)

by Squadron Leader Nick Smith

On 3 Mar 99, during the RAFOS West Coast of Scotland Survey, Dave Slater spotted a glaringly white bird of goose size offshore at the Royal Naval Station at Mellon Charles on the NW coast of Scotland (GRNG844909). It was so strange that a range of unlikely options flashed through his mind before he came to the opinion that it was in fact a pure white diver - but which species? The apparent complete absence of any plumage markings did not help him. After the rest of his party had viewed the bird, which at that time was fishing at distances between 40 and 60 yards offshore, the conclusion was that it was probably a Great northern Diver; this tentative conclusion based its apparently large size, its bill shape and its outline, particularly the head.

It was not until better light conditions prevailed and the rest of the team had had a chance to view it, that the observers realised that the bird's plumage did in fact have the faintest of cream white markings in the same places where darker pigmentation occurs on birds of normal plumage coloration. These clues, through straining and watering eyes, in buffeting conditions, with choppy water and the bird's frequent diving (for up to 30 seconds and often only about 10-20 seconds on the surface), all contributed to the protracted identification of this challenging and unique bird.

After long periods of observation (the bird was in the same sheltered bay for at least 3 - 6 Mar 99) and much discussion, the team eventually agreed that the bird was a leucistic Great northern Diver, for the following reasons:

The faintest hint of marginally darker plumage markings could be seen on the crown, nape, and side of lower neck, with an indented half collar. There was also a chequered pattern on the back. This mirrored the plumage of a sub-adult Great northern Diver. We all tried to focus on the head and the bill and, having looked by this time at many of each of the three diver species in the area, we were content that the bird showed the straight edged upper culmen with a discernible angle to the lower mandible, rather than the more symmetrical dagger-like bill of a Black-throated. The bird also held its bill at a slight upwards tilt, another subtle pointer towards it being a Great northern. On the profile of the well studied head, the noticeable angle between the steep forehead (though not always obvious) and the crown and nape, was distinctive enough to our seasoned eyes and clinched the identification for some of us.

Apart from physical traits, I noticed that when the bird was joined by two Great northern Divers, it appeared perfectly relaxed and circled with them (within only a diameter of less than 5 feet) for several minutes, in what was probably part of a pre-breeding season social activity. In the whole week we never saw any interaction between two species of diver, they were always well apart, but we did see groups of the same species (up to 9 Black throated in one tight feeding flotilla).

This intriguing bird was seen by the 7 team members every day (3 - 6 May 99) after it was first found. We all spent a long time watching it, partly to all satisfy ourselves of what it was, but partly to watch a unique bird, which by its striking plumage stood out to the eye in a way quite different from any other bird which we had seen. Though it took several hours of observation before everyone was completely content with its identification, we ended up in unanimous agreement after interesting debate. I have not been able to find any literature on leucistic divers, so have no idea whether one has ever been seen before in British waters. Unfortunately, because of the strong wind, constant diving and distance, no good pictures were obtained of this bird, only 'record shots' of a small white shape

(just about discernible as a diver), on a choppy sea. The bird was notified to the regional bird recorder shortly after the expedition.

FIELD OBSERVATIONS OF FEMALE-LIKE, MALE PIED FLYCATCHER

by John N Wells

Introduction

During my last tour in RAF Germany, 1991 - 1993, I was posted to Gutersloh near Bielefeld, in Germany. My married quarter was located in the Stadtle (town area) of Avenwedde - Gutersloh. The married quarters were located amongst German private dwellings forming an estate of the main town. These houses lay adjacent to outlying countryside comprising mainly arable farmland interspersed with deciduous woodland and some mixed deciduous and coniferous woodland.

Study Area and Methods

My local 'patch' consisted of a small private wood, located ½ a mile from the housing estate situated either side of a sign posted drive named 'Auf-am-Erley'. The wood contained a variety of large trees including beech, oak and many pine and fir with an understorey of dense hazel, small silver birch, bramble and bracken. The wood therefore provided a suitable nesting habitat for many small passerines. In addition to the Flycatchers my observations also included many other species, such as raptors and woodpeckers. The wood albeit private, was used by the locals for Sunday walks and was also subject to a local ornithological club nest box scheme, although I was never able to communicate sufficiently to ever find out who had placed the nest boxes in the wood.

During the spring of 1993, I began to make observations of the numbered nest boxes to monitor the breeding species using the boxes. Nuthatches and the familiar tit families were the predominate species using the boxes, as was to be expected, although **Common Redstart** (*Phoenicurus phoenicurus*) and **Pied Flycatcher** (*Ficedula hypoleuca*), were also seen. It is observations of the last species which make up the content of this paper.

Observations

One morning in May 1993, whilst checking a 'woodcrete' hole-type nest box, some 8-10 feet from the path, I observed what I initially thought was a female **Pied Flycatcher** (*Ficedula hypoleuca*) approaching the box. It was wary of me, but as nest building had commenced it needed to get on with its task, and it became accustomed to me as it went about its business, as I sat quietly on the far side of the grassed path. The birds' confidence increased as it came and went bringing nest material to the box. I sat and observed the bird on numerous occasions before it dawned on me that the bird was making rather a lot of regular appearances and perhaps there was more than one female attending the nest. I initially concluded that perhaps there were two females attending this one site, perhaps a close family female or an unmated female was assisting with the chore of nest building.

My bird watching experience or rather the lack of it, must be noted at this juncture, as I had only just recently taken up the hobby again since childhood, after being made aware of RAFOS by a work colleague. My limited knowledge was now being put to the test. My even more limited library, of suitable literature was now proving to be of little use, as it consisted of the one publication: The venerable "A Field Guide to the Birds of Britain and Europe" by *Peterson Mountford and Hollom - Collins*.

I returned on numerous occasions, making basic field notes, which with hindsight should have been more thorough. This particular encounter led me through the vagaries of identification, and a lesson which I shall never forget, and forms a topic for discussion herewith.

Field Notes on the observed birds

As I made my observations it became apparent that the male **Pied Flycatcher** which we are all familiar with was not going to show. The two individuals using the nest were 'brownish' and completely lacked any black elements, being brownish/grey or pure brown in overall appearance with various and differing amounts of white in the greater coverts and primary patches observed on both individuals. The 2 birds together at the nest site left me somewhat perplexed. They both appeared to be females in coloration and typical female identification features.

Field identification of female **Pied**, **Collared** (*Ficedula albicollis*) and **Semi-collared Flycatcher** (*Ficedula semitorquata*) is extremely difficult and there has been surprisingly little written about separation of these 3 species. Therefore my observation became an unsolved mystery. Females of this group provide one of the most difficult challenges to European birders. A previously un-noticed problem is that some male **Pied Flycatchers** are coloured like females, and these are not just difficult to sex but are also easily mistaken for **Collared Flycatcher**.

During 1994, RAFOS had sent a team to Cyprus, to observe breeding density and migratory species through an area of the Akamas Peninsula. By pure chance, during discussions with a fellow RAFOS member, my puzzle was perhaps going to be solved. Bob Frost had informed me that Krister Mild and Hadoram Shirihihi were currently publishing 3 papers in *Birding World* on the Field Identification of **Pied**, **Collared** and **Semi-collared Flycatchers**.

Bob recounted **Pied**, **Collared** and **Semi-collared Flycatchers** being ringed on the Akamas peninsula during the 1994 expedition to Cyprus. This led me to describing the two 'brownish' **Pied Flycatchers** I had seen in Germany. It was possible that my puzzle could be solved, but not without some more study! Bob stated how useful the 3 Part-articles had been to the success of the expedition. Accordingly, I have used those papers to research data for this article.

Female-Like Male Pied Flycatcher

A few male **Pied Flycatchers** completely lack any black elements above, being pure brown or brownish grey on the mantle, back, scapulars and head. Such males (which are usually, but not always first –summers) are very rare. The males can be separated by their white forehead patch, larger amount of white on the greater coverts and different tertial pattern (which are white in the outer most webs). These facts were unknown to me at the time of my find. Such males as the one I had seen, could easily be mistaken for female **Collared Flycatcher**, especially as such males would be readily apparent as being ‘different’ from ordinary female **Pied**. Who knows, perhaps it was a pair of **Collared Flycatcher** ?

Distribution

Distribution of **Pied**, **Collared** and **Semi-collared Flycatcher** should at this point be discussed. The ranges of **Pied** and **Collared Flycatcher**, at their western most edge of their range in Europe cover parts of Germany, but more southerly to my location. **Semi-collared Flycatcher** distribution, is more southern - to Eastern Europe in its range, with its most western fringe being Greece and the Former Republic of Yugoslavia. All three species breed in the Western Palearctic region and all three are migrants, which winter in Africa, south of the Sahara desert. Thus all 3 may be prone to some vagrancy. **Collared Flycatcher** has been seen in the UK on 18 separate occasions. A plate of a female **Collared Flycatcher** shown in (Part 2, plate 4) within my source documents shows a bird not dissimilar to the 2 seen at Auf-am-Erley, and this bird was located in The Netherlands, not far from my location. **Semi-collared** is also a partial vagrant to central and northern Europe, so a record of a vagrant **Collared Flycatcher** will need scrupulous field descriptions.

Discussion

Another train of thought at the time was, I remember reading Peterson Mountford and Hollom and contemplated **Brown Flycatcher** (*Muscicapa latrostris*), but this was quickly discounted due to the white in the wing patches of both individuals and the distribution of what is a Siberian race.

So what were the 2 individuals I located in Auf-am-Erley? Without concise field notes, which I do not have, we will never know. But it goes without saying, it was definitely not a usual adult male **Pied Flycatcher**, thus the 2 birds were very interesting. Perhaps if I had taken photographs this may have aided later identification. Another idea, which I did not consider at the time, was trying to contact the locals who erected the nest boxes, their experience may have helped. This last suggestion may well have registered the find to a wider and more knowledgeable group of ornithologists. It's rather easy to look back with hindsight.

Hybridisation cannot be discounted and this topic is set out in detail in the references below. The majorities are so close to one or other of the parent species that they are

impossible to separate. Some females of all three species are so difficult to positively identify that most features are only possible to judge in the hand (measurements, wing formula, and certain further details) are necessary.

I personally feel the most likely answer was the male was an extremely female like male **Pied Flycatcher** in its first summer. The jury remains out forever and a day.

MILD, K. 1994 Field Identification of Pied, Collared and Semi-collared Flycatchers. Part 1: males in breeding plumage. **Birding World** Vol. 7 Number 4: 139-151.

MILD, K. SHIRIHAI H 1994 Field Identification of Pied, Collared and Semi-collared Flycatchers. Part 2: females in breeding plumage. **Birding World** Vol. 7 Number 6: 231-240.

MILD, K. 1994 Field Identification of Pied, Collared and Semi-collared Flycatchers. Part 3: first winters and non-breeding adults. **Birding World** Vol. 7 Number 8.: 325-334.

PETERSON, R. MOUNFFORT, G. HOLLOM, P.A.D 1954 © Forth Edition. A Field Guide to the Birds of Britain and Europe. Collins. Glasgow.

AVES AND AVIATORS

by George Candelin

Introduction

Fatal accidents to aviators caused by birds are fortunately rare, many bird-strikes cause very little damage to the aircraft and some go unreported. All incidents tend to be fatal for the bird or birds involved.

The first recorded bird-strike occurred on 3 April 1912 when a Wright Flyer struck a gull, *Larus sp.*, resulting in jammed controls. This caused the aircraft to crash and the pilot to drown. It was, however, the development of high-speed propeller aircraft during the Second World War that led to increasing conflict and collision between aircraft and avifauna.

Public interest in aircraft bird hazards was stimulated when an incident occurred in 1962 in America. On 4 Oct 62 an American passenger aircraft taking off, struck a flock of Starling; three engines failed when they ingested remains, the aircraft then stalled causing the death of 62 of the 72 occupants

During the late 1950's, MOD (Air) had initiated a requirement for the Ministry of Aviation (MOA) to devise methods of keeping airfields clear of birds during aircraft operating hours. The investigators decided in favour of using recordings of birds' distress calls, a technique that was being developed to overcome problems with birds as agricultural pests. Development of this technique by MOA commenced in 1962.

A committee was set up in 1965 with a mandate to review bird-strike statistics, determine avenues of research and monitor development of new techniques. This UKBIRDC (United Kingdom Bird Impact Research and Development Committee) consisted of representatives from Civil Aviation Authority (CAA) and Ministry of Defence (MOD) plus Ministry of Agriculture (MAFF) and Trade officials. Re-alignment of this Committee in 1970 brought the Aviation Bird Unit (ABU) of MAFF into existence. The ABU consisted of four biologists and was funded jointly by MOD and CAA who set up a management committee to supervise the activities of the unit.

Costs

Civilian aviation bird-strike data indicates an average of 3 to 5 incidents per 10,000 aircraft movements. This is encouraging from a safety viewpoint, but financial implications must also be borne in mind. Typical of this type of financial incident is a report on a Boeing 747 Jumbo-Jet; this aircraft hit a flock of Oystercatcher, over Denmark in 1980. The repair costs for the two damaged engines was £180,000.00. A bird-strike has even been recorded at high altitude; this involved a Griffin Vulture hit at 37,000 ft over Abidjan, Ivory Coast.

Military aircraft are required to fly low and fast which increases the statistical probability of incurring a bird-strike. Costs are not normally published, but there is the example of a Nimrod which struck a flock of birds comprising Black-headed Gulls and Common Gulls in 1980 whilst taking-off from RAF Kinloss. This accident resulted in the deaths of two of the twenty-four crew members and the loss of an aircraft costing £20 million.

Action Plan

In 1976, Blokpoel reviewed the bird-strike hazard and concluded that three possible solutions existed to the problem but that none of these were completely definitive:-

1. Early warning of hazardous bird concentrations to allow pilots to choose routes or altitudes to avoid the hazard or to reduce speed to minimize damage.
2. Attempt to remove birds from places which aircraft cannot avoid, this includes airports, airfields and weapons ranges.
3. Development of bird-proof aircraft

Airfield Ecology

The typical airfield habitat consists of grassland containing paved areas and buildings. There may also be trees, shrubs and water features in the surrounding areas. Few people roam this area and disturbance is generally intermittent from noisy machines.

Birds' needs are few and simple; they have immediate need for food and fresh water. They also need sites suitable for loafing, roosting or breeding with security from predators.

- **GRASSLAND** Loafing and roosting areas with little disturbance from people.
 Food - Grazing for Swans & Waterfowl.
 Seeds for Pigeons, Finches and Buntings.
 Insects & Invertebrates for Gulls, Waders, Gamebirds,
 Hirundines, Thrushes, Warblers, Corvids, Starlings, and
 Finches.
 Breeding Habitat for Skylark and Partridge.
- **PAVED AREAS** Roosting and Loafing areas for Waders & Gulls
 Food - Earthworms, slugs and snails after rain
- **BUILDINGS** Perching, roosting & breeding sites
 Food - Refuse, waste and intentional feeding by humans

Breeding habitat in Hangers and other buildings

- **TREES / SHRUBS** Natural breeding and roosting habitat with the added attraction of berries as a winter food source.
- **SURROUNDINGS** Estuary, lake and river habitat can encourage Waterfowl, Waders and Gulls.

Sewage Farms, Landfill sites, Reservoirs, Woods, Hillsides and Cliffs all provide specialist habitats for individual species.

Farmland agriculture during Harvest, Seeding and Ploughing will prove attractive to birds. Stubble fields attract winter Finch flocks.

Methods

It will be seen from the above that airfields are attractive habitats for birds. They offer excellent opportunities for roosting, feeding and breeding activity in relative security.

Deterrents to birds must fulfil four requirements:-

1. They must not interfere with aircraft or equipment.
2. They must be effective over a wide area.
3. They must be effective for a long period.
4. They must require little maintenance attention.

Aims

- Physically remove birds from the area by trapping or killing
- Make local environment unattractive to birds

Options

There are 2 potential groups of options for controlling birds:-

1. Removing birds. Usually a temporary option as vacant territories are soon re-populated.

(NB. Most bird species are protected by Act of Parliament so killing is not a viable option).

2. Habitat management. Options are:-

- Repellants
- Psychological interference
- Physical interference
- Habitat modification
- Close the airfield

Repellants

- Visual - Birds have exceptionally keen eyesight for predator detection. Farmers and Gamekeepers have used Scarecrows, Twinkle Devices and corpses for many years with varying success. There is no known colour or pattern effecting deterrence. Birds become accustomed to visual devices in time.
- Taste - Many birds have little taste sensation because they have few taste buds. Food needs to be consumed before this deterrent can be effective. Encouraging birds into the area to feed would be defeating the object of the exercise.
- Smell - There is little evidence of smell avoidance in most birds. Some of the carrion feeders have olfactory organs for food detection but no known smell deterrents exist.
- Tactile - Success has been achieved in keeping Feral Pigeons from roosting & nesting on buildings using Netting, Scare-web and Jelly strips. This obviously has its uses in the airfield environment but will require development to see how successful it is with species other than Pigeons.
- Sound - Birds have keen hearing and are very susceptible to noise and disturbance. Noise must not be constant however, as acclimatisation will result.

Psychological

- Danger- Radio control models of predatory birds have been used in some circumstances. This is inadvisable on a busy airfield where radio interference must be minimised. Imitations of a natural predator by airfield staff. The Royal Navy and USAF have used falconry. There exists a possibility of causing a bird-strike with the Falcon. Training and exercising these Raptors is a full-time job.

Physical

- Light - Strobe lights and lasers do not prove effective.
- Sonic - Distress calls broadcast from a mobile speaker system have proved effective against certain species. Birds tend to become accustomed to this method unless it is associated with danger.
- Fear - Flares, Gas Cannons and gunfire are all effective methods of scaring birds and are especially useful for backing up the threat from the distress calls.

Habitat

- Grass - Short grass is attractive as a feeding site and affords good visual security by enabling detection of danger at a distance. Long grass is less favoured unless there are many seed-heads to provide food for Finches.
- Buildings - Deny access to nesting and roosting birds by good building maintenance and passive deterrents.

Close the Airfield

- Temporary - Stop flying during peak roost gathering and dispersal hours.
- Permanent - Risk is too high to continue using site when safer sites may be available.

Species data

Wading birds are the most numerous hazards on airfields, especially Lapwing *Vanellus vanellus* and Oystercatcher *Haematopus ostralegus*. Both of these species favour flat, open areas for roosting. Lapwing feed extensively on soil invertebrates.

Based on a survey of 7 military airfields, the abundance statistics are tabulated below

SPECIES	BIRD COUNT	LONG GRASS	SHORT GRASS
GULLS <i>Larids</i>	5775	2%	98%
WADERS <i>Charids</i>	13323	6%	94%
GAMEBIRDS	518	16%	84%
THRUSHES <i>Turdids</i>	4527	15%	85%
CROWS <i>Corvids</i>	3209	13%	87%
STARLINGS <i>Sturnids</i>	13227	32%	68%
FINCHES	1475	32%	68%

This table clearly shows the efficiency of long grass, when properly maintained, as opposed to short grass in deterring problem species. Enhancing the deterrent by playing distress calls from a mobile platform such as a Landrover fitted with speakers helps to

deny the birds security and peace. The element of danger can be introduced by using firecracker flares occasionally in order to disperse flocks and reinforce the distress call message.

Discussion

All methods must be used with due care and consideration of local habitat, species and conditions. Using the Falklands as an example, The planting of long grass in the mid 1980's not only failed to deter the local Penguin and seabird populations; it provided a food bonanza for Geese which soon came flocking in from all over the South Atlantic Ocean!

REFERENCE MATERIAL & SUGGESTED FURTHER READING

Airfield Bird Control	Anon	DFS (RAF) July 1977
Bird Control on Aerodromes	Houghton N, Milsom T & Rochard J B	
	MAFF ABU Course Notes 1984	
Bird Control on Aerodromes	Anon	CAP 384 Civil Aviation
	Authority 1976	
Bird Habitats in Britain	Fuller R J	T & A D Poyser 1982
Bird Hazards to Aircraft	Blokpoel H	Irvine, Clarke & Co., Toronto
1976		
Wildlife & Countryside Act 1982		HMSO

ROYAL AIR FORCE BAMPTON CASTLE
SET-ASIDE SURVEY 1996 & 1997

by George Candelin

Introduction

During December 1995, Peter Abbott, the Oxfordshire representative for the British Trust for Ornithology (BTO), approached me to ask if I would undertake a project involving intensive recording of an area of approximately 120 acres of farmland over a 2-year period. This was part of a national survey, funded by the Ministry of Agriculture, Fisheries & Food (MAFF).

Background

The Set-aside project was a joint venture by the BTO, working with the Agricultural Development Advisory Service (ADAS) and the Institute for Terrestrial Ecology, to investigate the effect of Set-aside areas of farmland and how this habitat affects the wildlife population. During the second year of fieldwork, data was also recorded for Skylark as part of a BTO investigation into populations of farmland birds.

Survey Aims

The principle objective of this part of the survey was to map the distribution and density of bird populations within selected farms containing areas of set-aside. This research will allow the value of set-aside to be assessed as a habitat for breeding farmland birds. The project was designed to run over a 2-year period between the months of April & July each year and was similar in method to the established CBC Common Bird Census.

Study Site

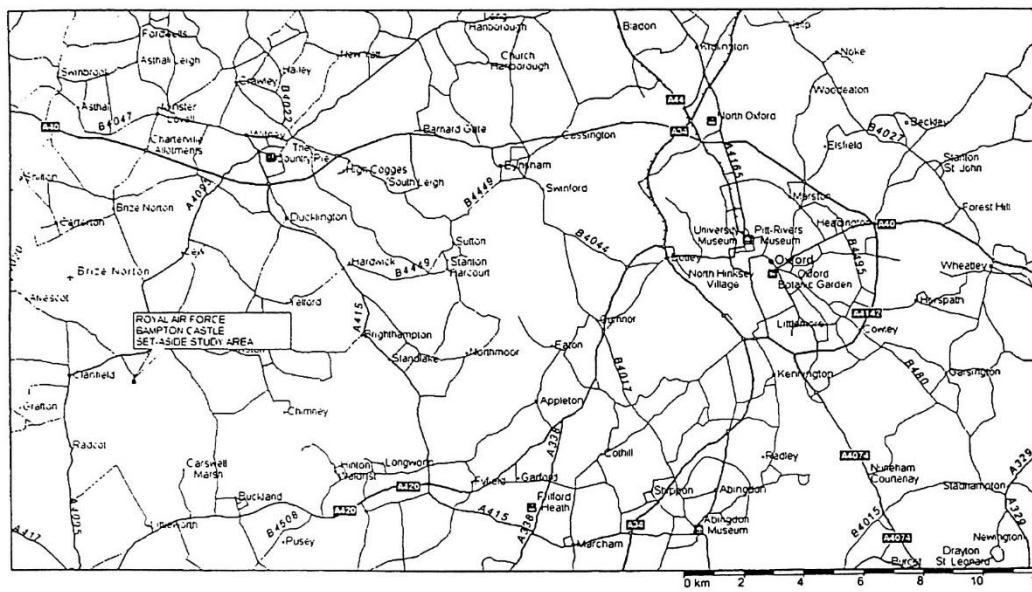
(MAP 1 REFERS)

Permissions were sought for access to both Glebe Farm and to the Military areas. Entry having been granted, the period from January to March 1996 was used for reconnaissance work to determine the best study area and to conduct the boundary recording phase of the survey.

An area of approximately 130 acres was selected as the study site. This block of land comprised 5 Crop fields, 5 Set-aside areas and 2 Woods. Each of the individual areas (excepting the woods) was allocated a letter and the habitat was described with respect to vegetation and area. All boundaries to these fields, areas and woods were numbered, mapped and described.

81SU at location SP311011 and 2SU at SP312012 have masts and aials on the study site. These were not mapped or described for security reasons but were noted to provide safe roosting and perching for a number of species.

MAP 1 – LOCATION OF STUDY AREA



Field Descriptions

FIELD A *'Over the Brook'* 2.3 Hectares

Consists of rough pasture grassland maintained as cover by the Rough Shooting Club. The 'Brook' is the Radcott Cut, which was excavated by Italian Prisoners of War as a flood relief channel. The boundaries consist of Blackthorn, Hawthorn and Willow with some mature Oak trees. Sharney Brook forms the southern bound; this is an almost stagnant channel of *Phragmites* Reed-bed. Pheasant rearing pens occupy the eastern end of the area.

FIELD B *'22 Acre Field'* 10.8 Hectares

Split into 2.6 Hectares of rough grass set-aside and 8.2 Hectares of crops, the set-aside area is designated as 'Field J' for recording purposes. Crop in 1996 was Oil Seed Rape; this was followed by Spring Wheat in 1997. A pair of Skylark bred in this field in 1997.

FIELD C *'Claire's Field'* 17.9 Hectares

Crops cover 15.3 Hectares; the balance of 2.6 Hectares of set-aside was designated as 'Field I'. Crop rotation was Oil Seed Rape in 1996 followed by Spring Wheat in 1997. Skylark also bred in this field, as did Sedge Warbler.

FIELD D *'Grahams Field'* 8.2 Hectares

2.6 Hectares of set-aside surround 5.6 Hectares of crops. A large Haystack occupied much of the Northeast boundary of the field in both study years. Oil Seed Rape in 1996 was supplanted by Spring Wheat in 1997.

FIELD E *'Bakers Field'* 9 Hectares

8.1 Hectares of crops edged with 0.8 Hectares of set-aside strip and headland, separated from Field F by a mature hedgerow containing trees. The 1996 crop was Maize; this crop was also planted in 1997. Lapwing took advantage of this late sown crop to breed on this field.

FIELD F *'Ferris's Field'* 8.1 Hectares

Set-aside grass headland area of 0.8 Hectares edging 7.3 Hectares of damp, heavy soil planted with Maize during both years of the survey. Lapwing used this field for feeding; some bred here.

FIELD G *'Smiths Wood Plantation'* 2 Hectares

Saplings, not yet up to waist height, of Ash, Alder, Willow and Blackthorn. Flourishing amongst the rows are Burdock and Teasel.

FIELD H *'Set-aside pasture'* 1.6 Hectares

'Cover' area of grassland between fields E & F bounded by Radcott Cut. The Rough Shooting Club maintains grain bins for Game bird feeding here during the winter months. This grain assists the Farmland bird populations by providing winter-feed for seed-eating species.

FIELD I
'Set-aside areas'

FIELD J

Rough grass set-aside areas within Fields B & C, see map 2 for details.

Distribution of Species

Most birds were found, as expected, in the Hawthorn & Blackthorn hedgerows, especially double rows and those containing mature Oak trees and Elder shrubs. Species breeding in this habitat included Little Owl, Wren, Dunnock, Robin, Blackbird, Whitethroat, Chaffinch and Linnet. Yellowhammer nested in the long-grass fringing the hedges and ditches.

Wooded areas of Oak and Beech held breeding Woodpigeon, Chiffchaff, Chaffinch and Greenfinch.

Sedge Warbler and Reed Bunting were recorded as breeding among the Willow Scrub & Common Reed fringed watercourses and could be seen feeding in the Oil Seed Rape crop. Cuckoos were seen but no parasitised nests were found.

Human sites, for example: buildings, gateposts, pipes and the Haystack, provided breeding opportunities for Yellow Wagtail, Pied Wagtail, Wren, Blue Tit and Great Tit.

Skylark bred in 2 fields (B & C), Lapwing bred in Fields E & F and Red-Legged Partridge also bred in the study area although no nests were found. Pheasant were bred in the special holding pens between Field A and the Wood.

Some birds, Wheatear for example, were noted to be passing through the site on migration. Raptors seen included Buzzard, soaring over the water meadows; plus Sparrowhawk, Hobby and Kestrel hunting the fields and hedgerows. Little Owl bred on the site in an old Willow stump.

Water meadows to the south of the study site contain ditches and narrow reed-beds of *Phragmites* and Reedmace; here could be observed Grey Heron, Mute Swan, Canada Goose, Teal, Curlew and Redshank. Other waterfowl seen in the area included Coot, Mallard and Shoveller.

In the winter months the site contains good population levels of seed-eating passerine species; these include Tree Sparrow, Chaffinch, Linnet, Greenfinch, Bullfinch, Yellowhammer and Corn Bunting. Some of these species are on the 'Red List' published by the Royal Society for the Protection of Birds (RSPB); this document lists bird species of national and international

conservation concern due to population decline. Many farmland birds have suffered a decline of over 50% of the population level during the last 25 to 30 years.

One reason for the relatively high population level of these species on this site appears to be the presence of grain hoppers. The Rough Shooting Club maintains these hoppers for feeding Pheasant and Red-Legged Partridge stocks during the winter months. In addition there are extensive hedgerows and rough cover areas which are also maintained for the benefit of Game Birds.

Statistics

TABLE 1

VISIT	FIELD LETTER CODE									
YEAR	A	B	C	D	E	F	G	H	I	J
1996 APRIL	2	3	5	2	43	10	2	3	3	3
1996 MAY	.	7	8	.	16	9	.	1	6	2
1996 JUNE	2	4	7	3	11	8	6	2	2	1
1996 JULY	1	12	27	4	3	1	3	1	2	3
1997 APRIL	.	6	17	6	5	7	1	.	.	.
1997 MAY	.	6	.	.	5	2	.	.	.	2
1997 JUNE	1	3	1	2	3	3	1	1	2	2
1997 JULY	.	2	8	4	3	4	3	1	2	3

Table 1 depicts the number of pairs of birds of any species, which were recorded in any particular field during a visit.

Twenty different species were recorded inside the field areas; this figure excludes birds recorded in the boundary hedgerows, ditches and vegetation. Long grass was not an attractive habitat for passerines; only Game Birds and Corvids favoured these areas.

TABLE 2

FIELD	1996		1997	
LETTER	CROP	DENSITY	CROP	DENSITY
A	Pasture/Cover	2.6	Pasture/Cover	2.6
B	Oil Seed Rape	2.6	Spring Wheat	1.7
C	Oil Seed Rape	2.6	Spring Wheat	1.7
D	Oil Seed Rape	2.6	Spring Wheat	1.7
E	Maize	8.8	Maize	8.8
F	Maize	8.8	Maize	8.8
G	Saplings/Cover	6.6	Saplings/Cover	6.6
H	Long Grass	1.8	Long Grass	1.8
I	Non-Rotational	1.3	Non-Rotational	1.3

J	Rotational	3.0	Rotational	3.0
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Table 2 shows crop type related to pairs of birds per Hectare

Density figures were calculated by dividing the total number of pairs observed, by the field area in which they were counted. Species was not taken into consideration other than to ensure that the species was in its normal habitat and not an aberrant record.

Conclusions

National trends indicate that farmland bird species are in decline. However, the set-aside scheme, which was initially introduced for purely economic reasons; removing land from production to help control crop surpluses; has provided beneficial habitat for wildlife in the agricultural environment.

On a national scale, results from surveys indicate that a set-aside containing annual weed is favoured over crops or cover grassland by most bird species. Higher densities of Skylarks are found in Rotational Set-aside containing annual weeds.

Crops such as Oil Seed Rape and Maize are favoured over Winter Wheat and non-cereal crops. Bird density was noticeably lower on Long Grass, Spring Wheat and Non-rotational Set-aside grassland. Finches and reed-bed species fed and bred in Oil Seed Rape.

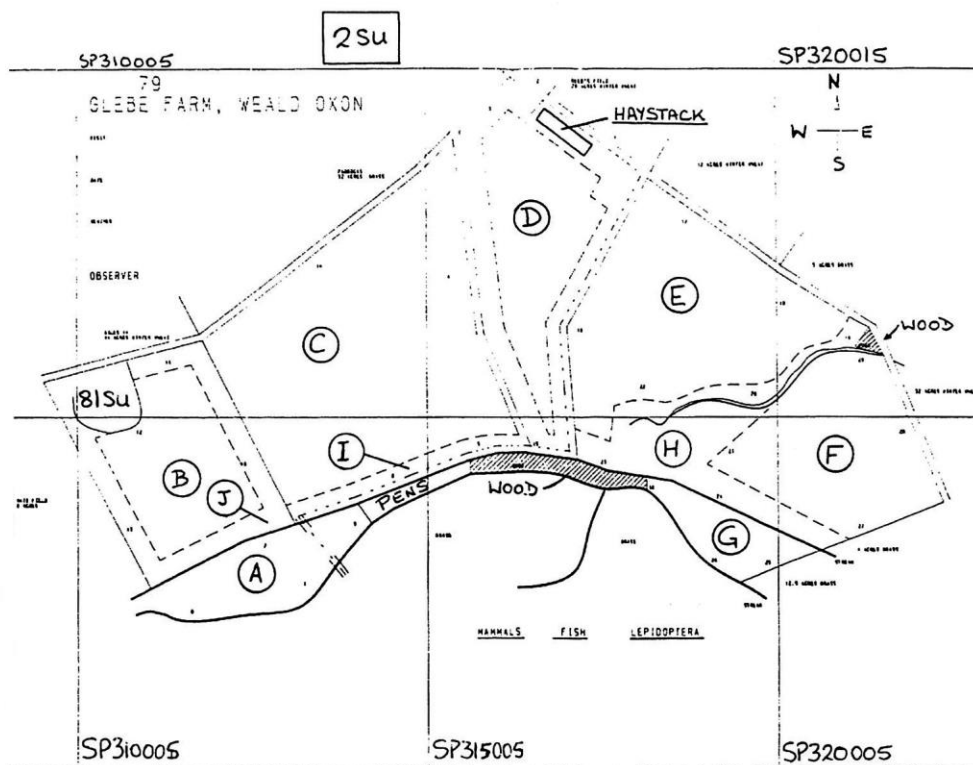
Hedgerows are important for providing safe habitat for breeding, feeding and roosting birds. The greatest density was found in this habitat, especially where diverse vegetation existed. The ideal mix for most farmland birds consisted of double rows of Hawthorn / Blackthorn near water, interspersed with occasional standard or mature trees that could be used for song-posts.

The project proved that birds respond quickly to habitat change when new set-aside areas are established. Set-aside is not a specific habitat; there are vast differences between soil types and natural vegetation types on farms in the various regions of the United Kingdom. The most favoured habitat is young growth that is sparse, varied and growing as clumps, preferably in an area containing some bare ground. This is typical of rotational set-aside.

ADAS staff concentrated on botanical surveys and the possibility of trans-migration of plant diseases between set-aside and crops. Their report also discusses recommendations for incorporating low-intensity farming into the arable countryside.

Using the information gained by this survey in conjunction with information from other studies by the BTO, RSPB and Game Conservancy it will be possible to make recommendations for incorporating beneficial habitat into the countryside at minimal cost. The knowledge gained from all these sources will be made available for the planning of the proposed Arable Incentive Scheme. There will also be a paper published in the Summer issue of BTO news which will relate the findings of this and other surveys in the context of the Common Agricultural Policy of the EU.

STUDY AREA



SEABIRD MOVEMENTS OFF CAPE ST VINCENT, PORTUGAL
(NOVEMBER-DECEMBER 1992, JANUARY-JUNE AND
AUGUST-NOVEMBER 1993, JANUARY-MARCH 1994)

by Frank Walker

Cape St Vincent (37°07'N, 09°W) is the most south-westerly point of Europe. This makes it an ideal place to observe movements of seabirds. In late autumn 1992 seawatches were made on 40 occasions between 1st November and 12th December with a mean daily watch length of 60 minutes. In 1993, observations totalling 146 hours 5 minutes were made on 118 days between 5th January and 29th June with a mean daily watch length of 74 minutes and on 99 days between 1st August and 20th November with a mean daily watch length of 63 minutes. In the period January-March 1994 observations totalling 106 hours 50 minutes took place on 85 days with an average watch length of 76 minutes.

Most watches took place in the morning in the 60-90 minutes after sunrise, with occasional watches in the afternoon. Observations were made from the cliffs at the lighthouse at the Cape which is high enough to watch birds close to the coast, as well as those flying well out to sea. Height and distance often precludes specific identification of many smaller seabirds, such as terns and auks.

The November and early December 1992 observations probably represent the end of autumn migration. Observations in the period mid December 1992 to the end of January 1993 and January 1994 represent mainly wintering birds, including those which have been moved southwards by weather conditions further north. From early February 1993 until the end of observations in June and also in February-March 1994 the majority of records refer to birds involved in northerly migration to the breeding grounds, including a component of immature/nonbreeding birds such as Northern Gannet *Morus bassanus*, as well as species such as Cory's Shearwater *Calonectris diomedea* which breed in the Mediterranean and islands of Macronesia and which may have been involved in feeding movements only.

CORY'S SHEARWATER *Calonectris diomedea*

Birds were recorded almost daily in late 1992 between 1st November and the last record on 5th December. In this period over 7,000 were counted in both north and south movements. Rafts or day roosts of 200-400 birds 2.5 km SE of the Cape were regular features, the last one being seen on 5th December. Maximum counts over one hour periods were 900/h on 5th November, 943/h on 10th November and 680/h on 16th November. It is not known if these movements were part of a circular feeding movement involving adjacent pelagic areas, or part of the dispersal pattern of birds from Atlantic and/or Mediterranean colonies en route to wintering areas.

No birds were recorded in January 1993. Birds were recorded on three days in February (129 birds), the first record (1) being on 10th, with 126 N on 26th February. In March a total of 88 birds was recorded on eight days (max 46 on 9th). In April, when watching took place on only six days at the end of the month, only 3 birds were recorded. Only 6 birds were recorded in May, all on 6th. Birds were recorded in each watch in June (max 40 on 21st and 29th).

There was a greater presence of *Calonectris* when watches were renewed in August 1993 and between then and the end of observations on 20th November a total of 9,929 was observed. In August a total of 1,528 was seen (max 200+ on 1st and 3rd), 1,058 in September (max 168 on

24th and 200+ on 26th), 5,760 were observed in October (max 450 on 14th, 700+ in three rafts on 26th and 420 on 28th) and 1,583 in November (max 170 on 16th and 17th, 350 in a raft on 18th). In 1994 no birds were recorded until 15th February and between then and the end of February 35 birds were recorded on three dates with 15 seen on 15th. In March 24 were counted on four dates (max 17 on 5th).

However, it is considered that the totals given above are misleading, as rafts of 300-700 birds are often present off Cape St Vincent in the autumn months, presumably as roosting or resting areas for migrant birds, and it seems possible that many of the birds counted were moving between rafts. These rafts also offer some degree of mutual protection against predation or kleptoparasitism by skuas and gulls.

SOOTY SHEARWATER *Puffinus griseus*

Surprisingly lacking in records; single birds on 1st December 1992 and 7th January 1994.

MANX SHEARWATER *Puffinus puffinus*

MEDITERRANEAN SHEARWATER *Puffinus yelkouan*

These two species were not generally separated although specific identification of Manx was carried out on several occasions although Mediterranean Shearwater was much more common. All records in 1994 refer to this species.

Manx Shearwaters were recorded on eleven days in late 1992, all moving south (max 7 on 16th November, 10 on 4th December, 14 on 8th December). There were 16 records of Mediterranean Shearwater between 7th November and 9th December involving 93 birds, all moving south (max 25 on 8th November, 16 on 22nd November).

A total of 15 birds was recorded on seven days in January; 42 birds on eleven days in February (max 11 on 12th) and 14 birds on nine days in March. At the end of April there were 9 birds during the six days. In May there were 3 on 13th, and after 22nd May 34 birds were recorded during the five days that observation took place, including 2 Manx. Birds were also recorded every day but one in June, a total of 211 being seen (max 83 N on 8th). The increase in records in this period is attributable to the migration of *mauretanicus* to the moulting grounds off western France.

In the period August-November 1993 no attempt was made to separate the two species. A total of 1,205 birds was recorded with maximum numbers moving SE between 10th-19th October when birds are normally moving south to the Strait of Gibraltar and entering the Mediterranean. Monthly totals were 77 in August (max 33 on 8th), 166 in September (max 86 on 26th), 887 in October (max 276 on 10th and 105 on 13th), and 75 in November (max 14 on 18th).

There were relatively few records in the period January-March 1994, 19 birds were recorded on 10 days in January (max 4 on 12th). Numbers increased sharply in February when no less than 255 were recorded on 16 days (max 64 on 13th and 55 on 15th). Records fell sharply in March and only 9 were recorded on 3 days (max 5 on 6th). It is possible that the birds which were recorded in February were either birds which had wintered in the Atlantic returning late to the Mediterranean or perhaps immatures effecting a late, possibly partial, return towards the breeding grounds.

Puffinus assimilis LITTLE SHEARWATER

There were 11 records of what is considered to have been this species on 3rd November 1992 (1), 10th November 1992 (3), 13th November 1992 (1), 14th November 1992 (1), 22 November 1992 (4) and 28th November 1992 (1). These records have been submitted to the IRC.

Morus bassanus NORTHERN GANNET

Table 1: Monthly Gannet numbers and hourly mean, 1993 and January-March 1994
Cifras mensuales y número medio por hora de Alcatraces en 1993 y enero-marzo 1994

	1993		1994	
	total	average/hour	total	average/hour
January	16,812	540.6	24,357	649.5
February	16,906	474.1	19,209	656.7
March	8,889	250.1	6,558	160.6
April	2,126	183.3		
May	1,248	65.5		
June	127	11.3		
July	n/c	-		
August	100	-		
September	2,488	205.5		
October	21,912	433.0		
November	13,625	437.0		
December	n/c	-		

An estimated 12,400 Gannets were recorded moving south in November-December 1992 with average numbers in the range 120-780/h. An average of 500 birds/h was observed on 6 days, including a mass feeding movement of c.500 on 8th. In January 1993 the monthly mean was 540.6/h with maxima of 852/h on 5th, 770/h on 6th, 724/h on 14th and 1,582/h on 30th when there were 2,109 in 80 minutes. In February the monthly mean was somewhat less, 474/h, there being a massive movement of 3,230 in 105 minutes on 1st (1,845/h), with other days of heavy movement on 12th (1,431 in 100 mins, 858/h), 17th (1,225 in 100 mins, 735/h), 22nd (1,350 in 30 mins) and 23rd (1,874 in 80 mins, 1,405/h). There were no days of very heavy movement in March, the monthly mean falling to 250/h, max 1,174 birds in 120 mins (587/h) on 15th. It was not possible to continue counts until late April, by which time passage had diminished considerably to a mean of just over 180/h. During May the monthly mean fell even further to 69.7/h, there were only three days at the beginning of the month when over 100/h were recorded. As was to be expected, the mean in June fell even further to 9.5/h (max 29/h on 8th and 33/h on 10th).

Between August and November 1993 an estimated total of 38,125 Gannets passed observation points at Cape St Vincent or Punto do Sagres. The first juveniles were seen in the first week of August. Movements were random in August (total 100 birds, max 19 on 1st) and it was not until 17th September when southerly passage commenced in earnest. The September total was 2,487 birds (mean 205.5/h) of which 53% were adults and 5.6% juveniles (max 536 on 26th, including 237 juveniles). In October out of the total 21,912 birds recorded (mean 433.0/h) 75.3% were adults and 13.4% juveniles, whilst in November the percentages were 92.7% adults and 2.9% juveniles out of total of 13,625 birds (mean 437.0/h).

An unusual feature after 17th September was a small but regular movement of birds out of the west from the direction of the Gulf of Cádiz, these totalling 3,287, against the main flow of migration to the SE. It was also noted that numbers often dropped suddenly between 1 and 2 hours after dawn and it seems that in some cases at least the vacating of dormitory or roost rafts from further up the coast was being seen. Rafts were observed on several occasions, usually 300-400 birds but exceptionally 1,300+.

In January-March 1994 a total of 50,124 birds were censused. Movement to the north commenced in mid to late January and continued throughout the period. A total of 24,357 birds (mean 649.7/h) was recorded in January of which no less than 98.1% were adults. Rates of over 1,000/h were recorded on four days after 25th January (max 2,918/h on 27th). A total of 19,209 birds was recorded in February (mean 656.7/h) of which 92.3% was adult. There were five days in the first half of February when over 1,000 birds/h were recorded, max 1,600+/h on 1st and 2nd. The March total was 6,558 birds observed (mean 160/h), 500+/h were recorded on only two days (max 884/h on 12th and 524/h on 14th). The percentage of adults fell to 59.7% whilst that of immatures and 1st year birds rose to 17.8% and 4.5% respectively.

Table 2: Gannet age groups, 17th August-20th November 1993
Alcatrazes según edad, 17 agosto-20 noviembre 1993

	17-31 August		1-30 September		1-31 October		1-20 November		Mean %
Adult	9	13.0%	645	53.0%	15,597	75.3%	12,157	92.2%	55.7%
Immature	13	18.9%	505	41.5%	2,341	11.3%	630	5.0%	16.6%
Juvenile	47	68.1%	68	5.5%	2,774	13.4%	388	2.8%	27.6%

GREAT CORMORANT *Phalacrocorax carbo*

Small numbers (maximum 32) were recorded moving SE in November-December 1992. In autumn 1993, maximum 9 on 8th November.

SHAG *Phalacrocorax aristotelis*

Up to 5 birds daily in November and December 1992, August-November 1993 and January-March 1994 were considered to be local residents.

EIDER *Somateria mollissima*

One record from Cape St Vincent, 3 males and 1 female on 19th November 1993.

COMMON SCOTER *Melanitta nigra*

Only two records in 1992, 3 on 13th November and 14 on 4th December. Birds were recorded on three days in January 1993 (max 7) and four days (max 3) in February. There was some evidence of northerly passage in March 1993 with a total of 94 birds on eight days between 13th and 25th, max 58 N on 13th. In April 4 were seen on 28th and 6 on 6th May, these being the last spring records.

Not common in autumn 1993, first recorded on 1st July at Punto do Sagres, 112 in small flocks between 19th September and 19th November, there being only 3 birds in September, 40 in October (max 21 on 14th) and 69 in November (max 30 on 11th).

In 1994 32 were recorded on five days in January (max 12 S on 21st) and in February 21 on three days (max 17 SE on 19th). There was some evidence of northerly movement in March when 231 were seen on six days (max 144 N on 25th).

GREY PHALAROPE *Phalaropus fulicarius*

Not recorded in autumn 1992. In autumn 1993 240+ recorded moving S between 24th September and 24th October (max 174+ on 16th October).

**POMARINE SKUA *Stercorarius pomarinus*
ARCTIC SKUA *Stercorarius parasiticus***

Separation of Pomarine and Arctic Skuas was often impossible because of distance on many occasions. A total of 55 smaller skuas was recorded on twelve days in November and December 1992, with maxima on 1st December (12) and 4th December (13).

In 1993 birds of one or other of these species were seen in January (4 in three days), none were recorded in February and 5 in four days in March. In late April passage was under way, and in four days 8 Pomarine and 18 Arctic Skuas were recorded (max 4 Pomarine on 29th and 9 Arctic on 28th). This movement finished in early May, the last spring records of Arctic being on 1st and last Pomarine on 2nd. In autumn 1993 a total of 41 Pomarine Skuas flew S off Cape St Vincent between 9th October and 20th November (max 4 on 10th October and 1st November). Arctic Skuas were much less frequent and only 10 birds were recorded between 19th August and 20th November. On 1st October a total of 19 skua sp. were recorded.

Neither species was recorded in January 1994, 2 of uncertain identification were seen on 14th February and a definite Pomarine on 19th February. In March a single Arctic Skua was seen on 12th and a Pomarine on 30th.

GREAT SKUA *Stercorarius skua*

Recorded nearly daily between 4th November and 4th December 1992. Possible wintering of 2-3 was suspected in the area Cape St Vincent/Punto do Sagres, there being 1-3 birds on several days in January-March 1993. The only evidence of spring movement was 18 N in 90 minutes on 30th April. There was a single bird on 2nd May and other single birds on 1st, 8th and 29th June. In autumn 1993, 38 flew SE between 25th September and 18th November from Cabo St Vincent and Punto do Sagres.

In 1994 a total of 11 birds was seen on nine days in January and in February 15 over eight days (max 4 on 12th and 5 on 14th). A total of 14 birds was recorded during 8 days in March (max 5 N on 30th).

MEDITERRANEAN GULL *Larus melanocephalus*

One immature on 10th December 1992. 2 S on 18th August 1993 at Punto do Sagres and up to 5 1st W and adults in Sagres harbour 8th-20th November.

SABINE'S GULL *Larus sabinii*

Two immatures recorded off Cape St Vincent in autumn 1993, 1 on 13th October and 1 on 2nd November.

BLACK-HEADED GULL *Larus ridibundus*

Small coastal movements only in November-December 1992. Return passage S had started by 1 August 1993.

AUDOUIN'S GULL *Larus audouinii*

Recorded from Sagres harbour, 1 juv/1st W on 6th and 7th September and 28th October.
(Note: This was a particularly productive autumn in the Algarve for Audouin's Gull and many others were recorded in the region: *AMP*).

COMMON GULL *Larus canus*

A small passage off Cape St Vincent in autumn 1993 between 23rd October and 15th November, total 1 1st W, 5 imms and 5 adults.

LESSER BLACK-BACKED GULL *Larus fuscus*

YELLOW-LEGGED GULL *Larus cachinnans*

It is worthwhile noting that counting large gull movements off Cape St Vincent and Ponto do Sagres are complicated by the tendency of birds to take short cuts across Sagres peninsula. Local movements probably refer to feeding and roosting movements. There are two large colonies of cachinnans on the cliffs of Cape St Vincent.

No significant numbers were observed on migration in November-December 1992. Return autumn migration in 1993 started on 2nd August but the major movement took place between 28th August and 28th September when c 23,000 large larids were counted either in active migration or resting on the sea; maxima were c 400 adults and 600+ immatures on 31st August and c 200 adults and 300 immatures on 1st September. On 4th October there was a SE movement of 400/hour. On 12th October 460 *cachinnans* and 3,720 *fuscus* moved SE in 2 hours 10 minutes.

Large roosts or rafts were recorded on several occasions in 1993, with 1m500 *fuscus* at Martinhal on 19th October, a raft of 2,000 *fuscus* at Faria de Beliche on 24th October and 1,000 *fuscus* SE off Cape St Vincent on 4th November.

BLACK-LEGGED KITTIWAKE *Rissa tridactyla*

A total of 104 recorded over 3 days in November (max 83 on 29th); 140 birds were recorded on 5 days in December (max 84 on 2nd). In spring 1993, 2 were seen off Ponto do Sagres on 29th April. In autumn 1993, 2 flew SE on 7th November and 1 feeding off Cape St Vincent were the only records.

SANDWICH TERN *Sterna sandvicensis*

There were no records in November-December 1992. The first record was of 2 on 8th February 1993 then 2 more on 11th March. Spring passage was evident between 18th and 31st March with 133 birds recorded (max 28 on 28th March). Passage was still continuing between 25th April and 6th May when the last 7 were seen, a total of 105 birds being recorded (max 28 on 27th April). There were no further records until 1 bird was seen on 29th June.

Return passage was first noted at Cape St Vincent on 10th August 1993 and between then and 20th November c 587 were recorded. Passage took place in August (total 166, max 31 on 19th and 34 on 20th), with peak passage in September (total 335, max 42+ on 20th, 76 on 24th and 46 on 25th), with a fall in October (total 58, max 10+ on 17th) and only scattered birds in November. Up to 40 were recorded daily in Sagres harbour in the same period.

In January 1994 a total of 19 was recorded (max 7 on 14th and 6 on 17th). A similar number, 19, was recorded in February (max 3 on 4th) whilst in March only 4 birds were recorded on 4 days.

COMMON/ARCTIC TERN *Sterna hirundo/paradisaea*

Normally not separated because of distance. There were no records in late 1992. The first spring record was on 13th March 1993 and 34 were recorded in the month (total 34, max 26 on 19th). In late April there were 38 present on 29th and 30th April. A total of 69 birds were recorded on four dates in May between 3rd and 26th May (max 31 on 12th). A total of 29 birds were recorded on four days between 1st and 22nd June (max 13 on 10th).

In autumn 1993 123 moved S off Cape St Vincent between 18th August and 6th November. Numbers in Sagres harbour were often high; maxima of 95 on 3rd September, 150 on 7th September and 55 on 17th September, thereafter small numbers until the last recorded bird on 5th November. The only certain records of Arctic Tern were 2 adults in Sagres harbour on 4th September, a juvenile in the harbour on 16th-17th October and 1 flying SE off Cape St Vincent on 2nd November.

In 1994 the first Common/Arctic was recorded on 6th March and during the rest of the month a total of 292 was recorded, northerly passage being recorded daily after 25th with maxima 56 N on 27th and 55 N on 31st.

BLACK TERN *Chlidonias niger*

Single birds moved north on 25th and 30th April 1993. Recorded on 14 dates between 3rd September and 16 October in autumn 1993; max 10+ on 16th October.

AUKS *Alcidae* spp.

Unidentified auks were recorded on 19 days in autumn 1992. Most were too far out to be specifically identified. Maxima recorded were 62 on 16th November, 56+ on 4th December, 125 on 8th December and 62 on 9th December. Guillemots *Uria aalge* were specifically identified moving south in small numbers between 4th November and 9th December (max 43 on 18th November and 27 on 9th December).

In 1993, single *Alcidae spp.* were recorded on three days in January, 43 on eight days in February and in March a total of 184 during twelve days (max 89 on 10th and 54 on 26th). Movement was still in progress in late April and 84 were seen during 3 days (max 38 on 29th and 30th). In May 69 were recorded on four days (max 31 on 12th and 20 on 26th). In June 7 were recorded on two days, the last record being 2 on 3rd.

In autumn 1993 a total of 98 auks was recorded between 19th September and 27th November when the maximum of 20 flew SE. No specific identification of Guillemot or Razorbill was carried out in 1994 but it is believed that the majority of records pertain to Razorbill. Numbers recorded were greater in January 1994 than in the same month of 1993 with a total of 337 over eighteen days (max 62 S on 5th and 161 N on 29th). Numbers were also high in February when 359 were recorded over sixteen days (max 151 N on 13th). Numbers fell in March when only 43 were recorded over eight days (max 12 on 19th).

Little Auks *Alle alle* were recorded twice in autumn 1993, 2 flew SE off Cape St Vincent on 10th October and 2 were present at the Cape on 20th November. In 1994, 4 were recorded on 8th January.

ACKNOWLEDGEMENTS: I am grateful to A M Paterson for his advice and help with the summaries.

OBSERVATIONS FROM THE ALGARVE – F J WALKER

In 2 volumes, compiled by Peter Montgomery.

Volume 1

1. Seabird movements off Cape St Vincent, Portugal – Autumn 1992
2. Ramblings of a Vagrant – Part Ten or More
3. A summary of seabird movements off Cape St Vincent, Portugal – Nov-Dec 1992, Jan-Jun 1993, Aug-Nov 1993
4. GIAM: Seabird movements off Cape St Vincent, Portugal – Nov-Dec 1992, Jan-Jun 1993, Aug-Nov 1993, Jan-Mar 1994
5. Algarve, Portugal, Sightings – 14 Sep 1992 – 4 Apr 1993
6. Observations on birds from Sagres, Algarve, Portugal – 24 Apr – 2 Jul 1993, 1 Aug – 20 Nov 1993

Volume 2

1. Diurnal Migration in Southwest Portugal
2. Observations of North Atlantic Gannets, *Morus bassanus*, from Cape St Vincent, Portugal.
3. Observations on numbers, species and migration on the Algarve coast – 1986, 1993-'95
4. Observations on numbers and species recorded from the Southwest Algarve – 18 Sep 1995 – 3 Mar 1996
5. Sightings of a Right Whale (*Eubalaena glacialis*) and calf off Southwest Portugal – 1995
6. Selected sightings – Algarve, Portugal, Sagres and Quarteira – 10 Oct 1996 – 16 Apr 1997

Separate

Seabird Counts – Cape St Vincent – 8 Sep 97 – 31 Mar 98

REPLACEMENT PAGE

Attached is a replacement final page for "Observations of Steller's Eider on Varangerfjord" by Bob Frost published in Journal No 27 1998.

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

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

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

Summary

During a holiday to the Varangerfjord area of Norway, 1 - 17 June 1997 a count was taken of the number of **Steller's Eider** seen. The total of 236 counted was thought to be an underestimate of the actual number present in the area, and this was substantiated after conversation with Swedish birdwatchers who were also surveying this region. From their information, it would seem that future studies of the population of **Steller's Eider** at Varanger Peninsula should investigate the seashore adjacent to the roads to Berlevag and Svartnes to Hamningberg. A total of five **King Eider** were also counted, which similarly, was thought to be an underestimate of the number of this species present around the peninsula.

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