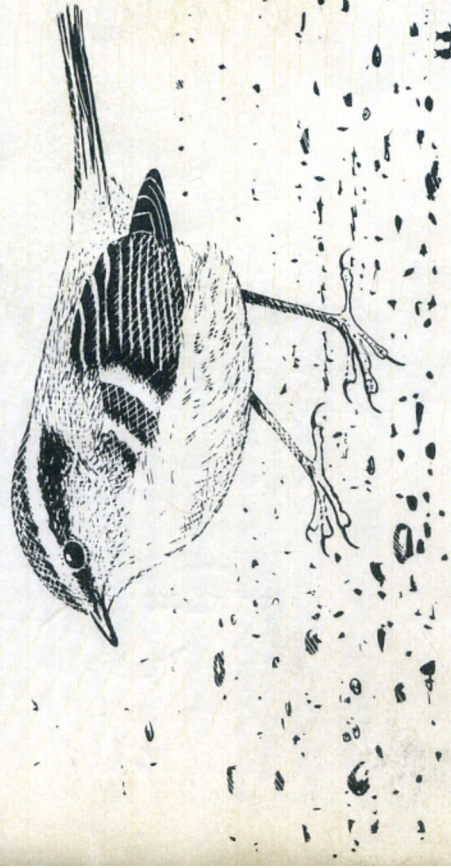


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THE SUSSEX BIRD REPORT

NUMBER THIRTY-NINE, 1986

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CONTENTS

	Page
Contributors and Acknowledgements.....	2
Classified Records.....	5
Ringing in Sussex in 1986.....	59
A survey of breeding Sand Martins in Sussex, 1985-1986.....	62
A survey of wintering Cormorants in Sussex, 1985/86.....	65
Changes in the breeding status and habitat of the Great Crested Grebe in Sussex.....	69
Note: Feral mink raiding Sand Martin colony.....	80
Movements of Fulmars, Gannets and auks observed from the Sussex coast, with particular reference to the spring of 1986.....	81
The timing of Siskin migration through north Sussex, spring 1986.....	88
Feral Greylag Geese in Sussex.....	91

Cover drawing of Pallas's Warbler by John Reaney: see p.4.

Published October, 1987

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mo = many observers

Society Surveys:

Sand Martin Survey: During 1986 all known breeding colonies in the county were visited. The organiser was R. D. M. Edgar and the results are summarised on pages 62-65. Many thanks go to the observers who are acknowledged in the paper.

National Surveys:

Cormorant Survey: The BTO survey organised by Miss J. Watson was completed and the results are summarised on pages 65-68. Thanks are due to all who helped with the survey.

Heronry Census: This long-standing census is organised in Sussex by Dr A. B. Watson, 83 Buckingham Road, Shoreham-by-Sea, West Sussex. All but one known heronries were visited and the observers are shown in the systematic list account.

Reed and Sedge Warbler Survey: This 2-year survey, carried out on behalf of the BTO and organised by A. J. Prater, commenced in 1986. Coverage was very good, particularly in West Sussex, and all participants are thanked for their help.

Wildfowl Counts: The counts in Sussex are organised for the Wildfowl Trust by D. W. Codd, 12 Broome Close, Horsham, West Sussex, who has made them available to the Society for this Report.

Estuary Counts: The BTO/RSPB/NCC 'Birds of Estuaries Enquiry' was carried out between September 1986 and March 1987. These counts were organised by A. J. Prater and Mrs M. Millner, 4 Church Street, Shoreham-by-Sea, West Sussex. Counters were:

J. Bacon, C. Barwood, K. Blackman, P. F. Bonham, K. F. Burn, P. F. Burns, Miss A. de Pottier, R. D. M. Edgar, Mrs J. H. M. Edom, P. Edwards, B. Haddon, S. G. Hamilton, R. C. Holman, Miss S. Keen, D. Kennard, L. Lacey-Johnson, O. and P. Laugharne, C. Lowmass, Mrs G. D. Marriott, C. and L. Mayhead, C. E. Messer, Mrs M. H. Millner, K. Noble, D. A. and T. W. Parmenter, P. Philpot, A. J. Prater, J. Reaney, R. J. Sandison, B. Savage, G. Smith, Miss C. Taylor, C. Walker, J. Weston, R. Williamson, P. J. Wilson and Dr B. J. Yates.

Thanks are due to all the above observers and organisers who have contributed to these national surveys in the county.

We are grateful for summaries of detailed observations at Selsey Bill from P. James, at Worthing from Dr J. A. Newham, at Brighton Marina from N. A. G. Lord, at Beachy Head from R. D. M. Edgar and M. Kenefick, and at Rye Harbour from Dr B. J. Yates. Thanks also go to R. Leverton for his continued work in maintaining detailed records of ringing in the county and to Mrs M. Millner for her invaluable help with secretarial work and in maintaining the Society's files.

The Systematic List was compiled by P. James with much help from the following, to whom go Paul's grateful thanks: J. E. S. Cooper (tits and Treecreeper); R. D. M. Edgar (marshland birds, inland sawbills); R. J. Fairbank (divers, scarcer migrants); S. W. M. Hughes (inland wildfowl, woodpeckers); C. R. Janman (skuas, terns); M. Kenefick (scarce raptors, Willow Warbler); R. Leverton (*Sylvia* warblers, Goldcrest); Dr J. A. Newham (gulls, Nightingale); K. Noble (wagtails, larks, buntings); A. J. Prater (estuarine waders); R. J. Sandison (common raptors, owls); M. Scott-Ham (heathland species); P. C. Turner (finches); and Dr A. B. Watson (Heron).

Illustrations:

Apart from Jane Watson's Cormorants (page 68), all the text drawings of birds were kindly provided by Bob Greenhalf.

John Reaney's Pallas's Warbler shows the Baisdean bird (found by Gerald Sutton) which spent much of its time hopping about on a flat roof!

CLASSIFIED RECORDS FOR 1986

by P. James

This list covers all species in Categories A and C of the British Ornithologists' Union check list. Records of birds ringed have not been cross-referenced to the bird-ringing summary. The breeding count table (page 40) should be read in conjunction with the summaries for individual species in the following list. Records of national rarities have only been included if the Society has been informed of their acceptance by *British Birds*, at the time of going to press. Observers are reminded that all records of unusual species (see list on inside back cover) are considered by the Records Committee and only those fully authenticated will be published.

The following abbreviations are used in the Systematic List as standard practice: E, W, N, S, etc., cardinal points of the compass; GP, gravel pit(s); GC, golf course; LNR, Local Nature Reserve; NR, Nature Reserve; NNR National Nature Reserve; Res., Reservoir; SSSI, a declared Site of Special Scientific Interest; SF, sewage farm or works; WFT, Wildfowl Trust; Hbr, Harbour; NC, no count; ha, hectares; km, kilometres. (Note that 1 sq. km = 100 ha = 247 acres). Amberley is used to cover the whole of Amberley Wild Brooks. The reference to the latest standard account of Sussex birds is abbreviated: Shrubbs 1979 (Shrubbs, M., 1979, *The Birds of Sussex, their present status*, Phillimore, Chichester).

The following species occurred commonly in Sussex in 1986 but the information has not been incorporated into the List: Pheasant (*Phasianus colchicus*) and House Sparrow (*Passer domesticus*). Details of these species are still required. **ESCAPES:**—The usual range of escapes were recorded. Full details of these are retained in the county files and records of all species are required.

NOTE. SWANS, GEESE, DUCKS and WADERS. Readers should remember that the tables presented for all the main species have been compiled from the monthly 'Wildfowl Counts' for the Wildfowl Trust and the 'Birds of Estuaries Enquiry' for the British Trust for Ornithology. The counts were made once per month and therefore the tables do not show the peak monthly figure but present a more meaningful coordinated count. The 'Birds of Estuaries Enquiry' counts were made on 11 Jan., 8 Feb., 8 Mar., 20 Sept., 18 Oct., 15 Nov. and 13 Dec. 1986, and 17 Jan., 14 Feb. and 14 Mar. 1987. The 'Wildfowl Counts' were made on 12 Jan., 16 Feb., 16 Mar., 14 Sept., 12 Oct., 16 Nov. and 16 Dec. 1986, and 18 Jan., 15 Feb. and 15 Mar. 1987.

1. **RED-THROATED DIVER** (*Gavia stellata*):—An unexceptional year most notable for the scarcity of records at the end of the year, the approximate monthly totals including sea passage (but see also Diver sp.) being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
180	70	12	31	35	—	—	—	—	3	15	10

Between 50-150 were reported off Rye Hbr from 11-15 Jan. while records of 30 off Pett and 15 off Langney Point on 12th may refer to some of those. Subsequently, apart from 13 off Bulverhythe on 22 Feb. and birds moving past Worthing (for which see Diver sp.), no more than 3 were recorded together at any one location. More unusual records included singles at Bewl Water on 13 Feb., Chichester GP on 18th and Arundel on 23rd. Birds were found dead at Pagham Hbr on 8 Mar. and at Newhaven on 26 Apr. The strangest record for many years was that of a slightly oiled immature found walking the streets in Shoreham on 15 Apr. One flew W off Worthing on 17 Sept., with 2 seen there and 1 at Rye Hbr in Oct. All Nov. and Dec. records were coastal, and mostly in the west of the county, with 15 seen off Worthing, 5 off Church Norton/Selsey Bill, 3 off Brighton and 2 off Cuckmere Haven.

2. **BLACK-THROATED DIVER** (*G. arctica*):—Reported in good numbers in spring, but only 2 seen after May, the approximate monthly totals including sea passage (but see also Diver sp.) being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23	9	2	29	121	—	—	—	—	—	—	—

The individual at Bewl Water from 30 Dec. 1985 (SxBR 38:6) remained until 19 Jan. Elsewhere in Jan. and Feb. birds were reported from Selsey Bill (4), Pagham Hbr, West Kingston, Worthing (15), Widewater (2), Brighton Marina (3), Langney Point (2) and Rye Hbr (3). Just 2 were identified in Mar., both off Brighton Marina, on 2nd and 9th. All Apr. records were coastal with 11 recorded passing E both at Selsey Bill and off Worthing. A large diver movement was noted in early May, with 9 E off Worthing and 32 E at Beachy Head on 4th identified as this species. The May total comprised 24 birds at Selsey Bill, 20 off Worthing, 8 past Brighton Marina and 69 at Beachy Head, all flying E. At the end of the year singles were seen off Church Norton on 22 Nov. and 31 Dec.

3. GREAT NORTHERN DIVER (*G. immer*):—Another good year with sightings of at least 12 individuals. One W at Selsey Bill on 15 Jan. (BJ, CMJ) may have been that seen in Chichester Hbr on 18th (CBC). In Feb. reports were received of birds off Brighton on 15th and 25th and one on Pagham Lagoon on 28th (JRH). One was seen at Selsey Bill on 3 occasions between 16-24 Apr. (mo). Other spring passage birds were reported as follows: 2 E at Selsey Bill on 1 May; 1 E off Worthing and Beachy Head on 25 Apr. and 1 E off Seaford on 4 May. On 21 May one flew W off Worthing (JAN).

All records at the end of the year came from the west of the county and probably include considerable duplication. One was seen off Church Norton from 26 Oct. into Nov. when 1-2 were then regularly reported to 9 Dec. and one on 20th (mo). One flew E past Selsey on 1 Dec. (ASC) and in Chichester Hbr 2 were reported irregularly from 23 Nov. to the end of the year, with 3 on 10 and 16 Dec. (mo).

DIVER SPECIES (*Gavia sp.*):—Movements of divers, almost certainly mostly *G. stellata*, were noted from several coastal sites from mid-Jan. to mid-Feb. Peak counts were 6 E 21 W at Brighton Marina on 19 Jan., 20 E 35 W off Worthing on 25th, 15 E 11 W off West Kingston on 26th, 7 E 12 W at Selsey Bill on 29th, and 47 E 11 W off Newhaven in 30 min. on 8 Feb. Passage totals at regular sea-watching sites from Mar. to May (where *G. species* includes identified birds) were:

	Coverage	<i>G. stellata</i>	<i>G. arctica</i>	<i>G. immer</i>	<i>G. species</i>
Selsey Bill	233 hrs	16	35	3	203
Worthing	389 hrs	29	31	2	311
Brighton Marina	? hrs	—	13	—	127
Seaford	98 hrs	—	—	1	102
Beachy Head	88 hrs	—	69	1	200

The breakdown between species identified in the above table gives little indication of the total numbers of each species passing. It is highly probable that most 'unidentified' birds are *G. stellata*, particularly those early in the season.

The monthly distribution of passage divers passing E is shown below, with monthly minimum totals of 23, 204 and 245:

	March	April	May	4 May	Total
Selsey Bill	17	97	91	42	203
Worthing	11	159	141	49	311
Brighton Marina	7	82	38	8	127
Seaford	2	53	57	43	102
Beachy Head	4	36	160	84	200

Peak numbers were recorded on 4 May, as shown, while on 15 Apr. 30 flew E at Worthing and 47 at Brighton Marina.

One early diver flew E past Splash Point, Seaford on 13 Sept., with one W off Worthing on 17th. Most subsequent records were from Worthing, 33 being recorded there in Nov. and 20 in Dec., with 21 W at Langney Point on 14 Dec. A diver was present on Warmham Mill Pond from 3-5 Feb., its identity as yet unresolved.

6. LITTLE GREBE (*Tachybaptus ruficollis*):—Monthly maxima at the principal wintering sites were:

	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
Chichester Hbr	50	29	18	17	27	30	42
Lower Cuckmere	30	15	27	14	16	23	21
Pagham Hbr	8	15	12	5	10	8	11
Rye Hbr	5	6	18	13	11	18	16

Elsewhere, in Jan. and Feb., there were c.22 at the coast and larger inland waters and c.15 on the lower reaches of the Rivers Arun, Adur and Ouse. In spring one was still at Bewl Water on 6 Apr. and the last one left the Lower Cuckmere on 19 Apr. One on the Arun at Greatham Bridge on 30 Apr. was rather exceptional.

Early in the breeding season 3 pairs took up territories on flood waters at Combe Haven but deserted as the water receded. At Rye Hbr 3 pairs raised 8 young, the first being seen on 30 June, whereas at Gravetye Manor 3 pairs raised only 4 young. Elsewhere, 15-17 pairs were reported from 10 sites. Breeding success was often unknown but a pair at Copthorne reared two broods of 4 and a pair at Woolbeding reared broods of 3 and 6.

Post-breeding dispersal appeared early with singles at the Crumbles GP on 14 July, at Bewl Water on 17 July and on the Ouse near Lewes on 21 July. Aug.-Sept. maxima for Chichester GP and Weir Wood Res. were 12 and 15 respectively. The numbers on the Ouse had risen to 11 by 26 Oct. and, in addition to those listed above at the principal localities, a further c.50 were reported from 18 inland, coastal and river sites during Nov. and Dec.

7. GREAT CRESTED GREBE (*Podiceps cristatus*):—Monthly maxima at the principal wintering sites were:

	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
Weir Wood Res.	36	12	35	55	59	81	60
Bewl Water	23	35	68	27	31	25	28
Darwell Res.	10	1	10	39	25	28	28
Chichester Hbr	34	16	18	4	5	30	19
Chichester GP	19	5	22	19	14	22	24
Ardingly Res.	13	22	17	22	21	9	7
Pagham Hbr	9	1	9	2	7	10	6

At the beginning of the year, there were 20 at sea off Rye Hbr from 11-15 Jan., 15 and 16 off Pett and Bracklesham on 25 and 26 Jan. respectively and 13 W at West Kingston on 26 Jan. Up to 5 were reported wintering on Southwick canal in Feb. and these had increased to 8 by 6 Mar. One was at Brooklands from 2-5 Mar. and one appeared briefly at Widewater on 7th. Other unusual records included 3 on the Ouse between Newhaven and Lewes on 1 Mar. and 2 on the river at Arundel on 4th. At Brighton Marina numbers increased from 7 to 21 between early Feb. and 21 Feb. and reached 28 on 2 Mar. prior to declining steadily to 15 on 15 Mar. Few were reported from the coast in Apr. and May but 3 were seen off Church Norton on 2 June.

In the breeding season 84 pairs were reported from 24 sites. Productivity was slightly above average (0.86 young per breeding pair) with 41 pairs known to have reared c.74 young. Productivity on the traditional lake habitat (0.82) and at the gravel pits (0.44) was well below average but for the second successive year the figure for the reservoirs (1.06) was well above average. For example, at Bewl Water 14 pairs raised 24 young and at Darwell Res. 9 pairs reared 20; however, 20 pairs at Weir Wood produced only 3 young. Detailed information is required on the breeding season status and breeding success at Ardingly Res. and Chichester GP. In May single birds were reported on both the Rivers Arun and Ouse.

In early July 2 returned to Chichester Hbr and one was seen on Thorney Deepes from 13 July until the end of the month. Autumn numbers were slow to build up at the coast with only 10 off Church Norton by 28 Aug. but these had increased to 34 by 21 Sept. One at Hoove Level was a rather unusual locality for this species.

8. RED-NECKED GREBE (*P. grisegena*):—Fewer were seen than in recent years, the approximate monthly totals being:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	2	2	2	2	—	—	—	—	3	7	2	4

On 11 Jan. singles were reported from Rye Hbr and the Crumbles, the latter also present on 12th (WBM *et al.*). Two were seen on 16 Feb., one in Chichester Hbr (CBC) and another at Bewl Water remaining to 21st (AHL *et al.*). In March one was found off Brighton Marina on 2nd (TJW), while reports of one at Bracklesham Bay on 3rd probably related to that recorded at West Wittering on 8th (PJ). Passage birds were present off Widewater on 6 Apr. (BFF, RAI) and Biring Gap on 20th (RDME *et al.*).

First of the autumn was one at Pagham Hbr on 27 Sept. (PEB), and 2 were recorded off

Newhaven on 30th (LM). On 23 Oct. 3 were seen off Church Norton, increasing to 5 on 26th but with only 2 remaining in the area to the end of the month and one, irregularly, until 16 Nov. (mo). Elsewhere in late Oct. singles were recorded from Southwick on 28th (PW) and in Chichester Hbr on 31st (CBC). One was seen at the Crumbles on 3 dates between 2-15 Nov. (AW *et al.*). In Dec. one was seen in Chichester Hbr on 11th and 14th (RSK *et al.*) with 2 remaining at Bewl Water from 13th to the end of the year (AJG *et al.*).

9. **SLAVONIAN GREBE** (*P. auritus*):—Winter numbers were unexceptional, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
25	17	23	11	2	—	—	2	3	5	17	13

In Jan. up to 7 were present in Chichester Hbr while at Church Norton the peak count was of 17 on 26th. One at Bewl Water on 1 Jan. had also been seen on 30 Dec. 1985 (SxBR 38:8). Feb. records were more widespread, including singles off Worthing, on the R. Ouse at Lewes on 3rd, at Brooklands from 8-15th and at Ardingly Res. on 22nd. The 22nd also produced the highest counts in Chichester Hbr and off Church Norton, but only 4 and 7 respectively. In Mar. one was present on the Crumbles from 2-25th, one at Southwick from 4-6th, a peak of 9 at Church Norton on 8th, one on Sidlesham Ferry on 15-16th and one at Rye Hbr from 21 Mar.-12 Apr. Up to 6 remained off Church Norton and 2 in Chichester Hbr until 12 Apr., but none were recorded at either site subsequently. Between 10-13th singles were reported from Angmering, Newhaven and the Cuckmere. Two off Birling Gap on 2 May was the only other spring record.

Two Aug. records were most unusual, but may have referred to the same individual, off Worthing on 5th (RJS) and off Church Norton on 7th (JT). One was seen on the Crumbles on 11 Sept. with 2 off Church Norton on 26th increasing to 5 on 26 Oct. and 13 on 6 Nov. One was reported from Rye Hbr on 15 Nov. while 3 were present in Chichester Hbr on 20th. Throughout Dec. 6-8 were seen off Church Norton, while one was present at Rye Hbr from 6-10th and a maximum of 4 was seen in Chichester Hbr on 16th.

10. **BLACK-NECKED GREBE** (*P. nigricollis*):—A slightly above average showing due to those seen in Apr. but this is still the least common of the regular grebes, the monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	—	—	7	1	—	—	1	2	2	—	—

The Weir Wood Res. individual from 8 Dec. 1985 (SxBR 38:8) was last seen on 5 Jan. (NAD *et al.*), while one was reported from Chichester Hbr on 26th. In mid-Apr. 2 in summer plumage were seen off Seaford on 13th (AW, PJW) and 5 off Worthing on 14th (DIS, RJS) with another there on 14 May (RJS). In autumn singles were seen in Pagham Hbr on 27-28 Aug. (TJE), at Scotney Court GP on 10 Sept. (GB), at Darwell Res. on 5 and 12 Oct. (RGH) and off Church Norton on 19 and 23 Oct. (CBC). The most unusual record for many years was that of an adult stranded on a wet road near Heathfield, in fog, on 29 Sept. It was released onto a small farm pond and had gone the following day.

12. **FULMAR** (*Fulmarus glacialis*):—No reports were received of counts made during the breeding season (cf. SxBR 1985). Observations at the main sea-watching localities were as follows:

Direction of movement	Jan.-Feb.		Mar.-May		June-July		Aug.-Sept.	
	E	W	E	W	E	W	E	W
Selsey Bill	—	—	65	484	8	15	—	—
Worthing	—	—	4	382	601	—	29	12

The peak movement occurred on 4 May when there were 9 E and 69 W at Selsey Bill, 82 E and 48 W at Worthing and 52 E at Brighton Marina. One was seen prospecting cliffs at Lewes on 7 June and other inland records were of single birds at Washington on 9 June and at Stoughton on 8 Dec.

17. **SOOTY SHEARWATER** (*Puffinus griseus*):—One flying W off Worthing on 9 Nov. was the only record (JAN). 1977 was the last blank year, but 5 of the last 9 years have produced just one record.

18. **MANX SHEARWATER** (*Puffinus puffinus*):—One was found long dead at Brighton Marina on 11 Jan. (CBr). Only 14 were recorded during a quiet spring. Birds were recorded passing W off Worthing on 22 Apr., 12th, 18th (3) and 21 May (2) and 1 E on 10 June (JAN *et al.*). At Brighton Marina singles flew E on 1 May and 21 June (CBr) while on 4 May 2 flew E past Beachy Head, with 2 E at Shoreham later that day.

Autumn records were very scarce. Singles flew E off Worthing and Brighton Marina on 26 Aug. and Worthing had a Nov. record for the third year running with 2 passing W on 13th (RJS).

23. **LEACH'S PETREL** (*Oceanodroma leucorhoa*):—One was found dead on 10 Sept., having hit a window of the De La Warr Pavilion, Bexhill (ARH). This is the first record since 1982 and only the seventh since 1960.

25. **GANNET** (*Sula bassana*):—Recorded in every month of the year. Observations at the main sea-watching localities were as follows:

Direction of movement	Jan.-Feb.		Mar.-May		June-July		Aug.-Oct.		Nov.-Dec.	
	E	W	E	W	E	W	E	W	E	W
Selsey Bill	2	2	152	493	12	6	—	8	—	—
Worthing	7	3	430	439	22	35	99	21	7	98
Brighton Marina	—	—	84	55	134	23	—	—	—	—

The peak spring movements occurred on 4 May when there were 173 E 5 W at Worthing, 34 E at Brighton Marina and 121 E at Seaford; and on 10 May when there were 95 W at Selsey Bill and 4 E 120 W at Worthing. In autumn at Worthing there were 54 E 10 W on 16 Sept. and 4 E 73 W on 9 Nov.

26. **CORMORANT** (*Phalacrocorax carbo*):—Monthly maxima at known nocturnal roosting sites were as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Adur Levels	—	—	27	—	—	—	—	—	—	34	—	47
Chichester GP	44	20	—	—	—	—	—	—	—	—	—	—
Lewes Brooks	23	14	20	7	4	2	3	9	15	18	22	28
Pevensley Levels	—	7	8	—	—	—	—	2	3	6	—	8
South Stoke	—	4	166	160	—	—	—	—	56	91	110	112

Roosting flights to and from the cliffs at Peacehaven and Saltdean were regularly recorded at Brighton Marina with maximum counts of 91 W on 19 Feb. and 79 W on 25 Jan.

Counts at inland reservoirs included maxima of 32 at Ardingly, 6 at Arlington, 14 at Bewl Water, 12 at Barcombe, 11 at Darwell and 3 at Weir Wood. On the coast, up to 43 were seen at Rye Hbr, 17 at Pagham Hbr and 81 at Chichester Hbr.

The colony at Fairlight continues to grow: 4 pairs nested raising 3 young.

27. **SHAG** (*P. aristotelis*):—A poor year compared with 1984 and 1985. The approximate monthly totals were as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	6	5	2	5	1	—	—	—	—	—	2

As usual, the majority of records were from Brighton Marina with peaks of 6 on 15 Feb. and 5 on 3 Jan. and 4 Mar.

30. **BITTERN** (*Botaurus stellaris*):—The birds present at Arundel WFT and Warnham Mill Pond in Dec. 1985 remained until 25 and 8 Mar. respectively. Single birds were also seen at Combe Haven on 12 and 25 Jan., Herstmonceux for about a week from 24 Feb. and Rye Hbr on 11 Jan.

There were no reports for the latter part of the year.

32. **LITTLE BITTERN** (*Isobrychus minutus*):—A female at Shoreham on 1-2 June (JAN *et al.*) has been accepted by British Birds.

34. **CATTLE EGRET** (*Bubulcus ibis*):—One at Pagham from 30 Apr. to 14 May (PFBu, RD, DS *et al.*) has been accepted by *British Birds* and is the first for the county since 1974.

37. **LITTLE EGRET** (*Egretta garzetta*):—1985:—One at St Leonards on 15 May (KMJ) has been accepted by *British Birds*.

1986:—One at Chichester GP (MKA, DWH, PASP) and later at Sidlesham Ferry on 23 Aug. has been accepted by *British Birds*.

39. **HERON** (*Ardea cinerea*):—All but one heronries were counted, and nests certainly and probably occupied totalled 177 (210 in 1985) as follows: Fishbourne 15 (ETR), Pagham 3 (PFBu), Parham 30 (AI), Henfield 13 (ABW), Firle 28 (ABW), Knepp 14 (AS, IMS), Eridge 16 (MJS-H), Priesthaves 2 (MJS-H), Westham 2 (MJS-H), Warling (one site not counted) 2 (MJS-H), Pevensey 2 (MJS-H), Pett Level 2 (SJRR), Leasam 47 (CFG, EMC, BJY), Rye Hbr LNR 1 (BJY). Herons were seen at a possible site near Rodmell, but there was no evidence of breeding at Wadhurst and no breeding reports from the Bewl Water area.

Out of the breeding season herons were recorded in suitable habitat throughout the county with maxima of 55 at Rye Hbr in Feb. and 24 at Thorney Deepes in Sept.

40. **PURPLE HERON** (*A. purpurea*):—1980:—Up to 3 were seen at St Leonards between 11-15 Apr. as follows: one from 11-15th, 3 on 11th and 2 on 12-13th (SCR *et al.*). An adult was recorded at this locality on 18 May (SCR). These records have been accepted by *British Birds*.

1986:—An imm. was seen at Church Norton on 10 Aug. (RAI, RWCI, SAI).

42. **WHITE STORK** (*Ciconia ciconia*):—Single birds were seen at Beachy Head on 24 May (RHC, RJF, MK, NAGL), at Cottenden from 25-28 May (AHL, MJF) and at Herstmonceux on 26 May (JAN). There were 2 SE over Etchingham on 6 June (RJHO).

44. **SPOONBILL** (*Platalea leucorodia*):—An adult and a juv. were seen in Chichester Hbr on 5 Oct. (CBC, MAC). On 12 Oct. a colour-ringed juv. was reported from Waltham Brooks (BM, EHM) and later from Arundel WFT (DHD, JD *et al.*).

GLOSSY IBIS (*Plegadis falcinellus*):—Single birds at Shoreham on 18 Sept. (JAN) and at Rye Hbr the following day (BJY) have been accepted by *British Birds* and are the first for the county since 1962. The possibility that only one bird was involved cannot be excluded.

46. **MUTE SWAN** (*Cygnus olor*):—In the early months the highest counts reported from the principal localities included 127 in the Arun Valley, between Stopham and Arundel on 15 Mar., 90 in Chichester Hbr on 15 Jan., 85 on Lewes Brooks on 7 Mar., 63 in the Brede Valley on 23 Mar., 45 on Pevensey Levels on 13 Jan. and 32 on the Adur Levels on 16 Feb. Smaller gatherings in mid-Jan. were 24 at Widewater, 25 at Rye and 20 at Chichester GP.

In the breeding season 24 successful pairs raised 92 young, including a pair at Widewater with one all-white cygnet, of the so-called 'Polish' variety, in a brood of 5. Counts in May and June of non-breeders (and possibly early failed breeders) included 68 on Lewes Brooks, 52 at Scotney Court GP, 64 on the Lower Arun at Littlehampton, 53 at Amberley and 32 in the Cuckmere Valley. (Information on breeding successes and failures and April counts of non-breeding herds are required annually.)

At the Crumles GP numbers increased from 15 in early July to 32 during Aug. Later, Sept.-Oct. numbers at Pett reached 39 at a time when there were still 44 at Rye Hbr. At Chichester GP 35-40 were present from mid-Sept. to mid-Nov., 42 were in the Lower Cuckmere in Nov., and 74 in Chichester Hbr in Sept. increased gradually to the high figure of c.135, which was then maintained throughout Nov. and Dec. Other Dec. counts included 113 in the Arun Valley and 67 in the Ouse Valley. Power cables are a major cause of fatalities in this species, one of the worst sites in Sussex being Thorney Deepes where 14 birds have been killed in the last 2 years.

47. **BEWICK'S SWAN** (*C. columbianus*):—Numbers built up rapidly in early Jan. In the Ouse Valley 4-5, first reported on 2 Jan., overwintered and were last seen on 23 Mar. Other records were of 10 W at Barcombe on 12 Jan., 1 NNE over Ringmer on 15 Jan. and 1 W off Worthing on 30 Jan. In the Adur Valley 5 were present on 4 Jan. and numbers there had increased to 24 during 11-18 Jan. prior to decreasing to 3 on 19 Jan. The major flock in the Arun Valley had increased to 180 by 12 Jan. and then reached an all-time maximum of 212 on 26 Jan. Roosting at Arundel WFT was first noted on 19 Jan. when a family party of 5 arrived at dusk; a maximum of 29 were present later in the month. In Feb. and Mar. the numbers in the Arun Valley stabilised at 156-159 and up to 153 roosted in the Arundel WFT in March. A party was heard flying NE over West Chiltington on the night of 21 Mar. and 149 roosted at Waltham Brooks on 25 Mar. prior to leaving NE early the next morning. The last report was of 5 still using the Arundel reserve on 30 Mar.

At the end of the year the first records were of 6 on the shore at Rye on 2 Nov. and 3 in the Arun Valley at Bury on 15 Nov. Elsewhere, 4 and 3 were seen on Pevensey Levels on 3 and 9 Dec. respectively, 2 flew W over Arlington Res. on 12 Dec., 5 were on the Adur Levels on 20 Dec., and 2 on the Ouse Levels on 21 Dec. had increased to 14 by 29 Dec. In the Arun Valley numbers increased steadily and reached a maximum of c.128 on 28 Dec.

48. **WHOOPER SWAN** (*C. cygnus*):—An adult, first seen with Mute Swans at Warthing on 6 Mar. and present in the Ouse Valley between 7 May and 8 July, was almost certainly an escape.

On 23 Oct. an adult and an immature were seen at Weir Wood Res. (NAD) and on 8 Nov. 2 adults landed on the river at Newhaven and stayed for 10 min. prior to flying up river (PK). Two, possibly the same birds, were recorded on Lewes Brooks on 20 Dec. (GG, AW), where a third (possibly the escape) was associating with Mute Swans. Whereas the 2 only stayed 4 days the single bird was still present in Jan. 1987. On 22 Dec. there were 4 N over Seaford (LJW, PJW) and on 23rd a herd of 13 (9 adults and 4 immatures) was seen resting in Pagham Hbr (TJE, BJ, CMJ).

49. **BEAN GOOSE** (*Anser fabalis*):—A party of 8 were seen at Waltham Brooks on 13 Dec. (SWMH *et al.*).

50. **PINK-FOOTED GOOSE** (*A. brachyrhynchus*):—Single feral birds were recorded at Cuckmere Haven on 19 Feb., at Arlington Res. on 2 Mar. and at Arundel WFT on 12 Apr. One at Bewl Water remained throughout the year.

51. **WHITE-FRONTED GOOSE** (*A. albifrons*):—A small influx occurred during January as the weather deteriorated. Up to 41 were seen at Arlington Res. and there were reports of 16 at Barcombe Res. on 1st, 14 SE over Langney Point on 1st, 9 at Henfield on 11th, 7 at Waltham Brooks on 19th and 18 S at Bewl Water on 26th. In Feb. there were 24 at Arlington Res. on 2nd, 3 at Lancing on 5th and 60 NE at Bewl Water on 19th. The 2 feeding with Brent Geese at Pagham Hbr since Jan. remained until 8 Mar. There were 300 NE over Hurst Green on 11 Mar. and 22 were seen at Weir Wood Res. from 14-19th. A juv. recorded at Arundel from 3-8 Apr. was possibly that seen with Canada Geese at Storrington on 12th and at Wiston on 13th.

The only record for the latter part of the year was of 6 at Pagham Hbr on 24 Dec.

53. **GREYLAG GOOSE** (*A. anser*):—Monthly maxima of feral birds at the principal localities were:

	Jan.	Feb.	Mar.	June	Sept.	Oct.	Nov.	Dec.
Arun Valley	18	20	12	11	23	14	31	22
Weir Wood Res.	11	16	7	10	7	2	8	2
Bewl Water	2	7	9	10	5	1	1	1
Rye/Scotney GP	—	—	57	2+	73	—	—	35

In addition to the above there were several records of single birds or small parties from other areas. Somewhat exceptional were birds reported in Jan. and Feb. from Ardingly Res.,

Gatwick and Swanbourne Lake, also one at Combe Haven and Glyne Gap in Mar. and Apr. Very little information was received for the breeding season; however, 2 pairs were seen at Waltham Brooks and one reared 8 young. Elsewhere 1-3 were reported from Rye Hbr and 4 were in Pagham Hbr in May. Later in the year a single bird consorted with Canada Geese in the Cuckmere Valley throughout Sept.-Nov. but more noteworthy was a party of 14, of unknown origin, at Sidlesham on 30 Sept.

55. **CANADA GOOSE (*Branta canadensis*)**.—Monthly maxima at the principal autumn and winter sites were:

	Jan.	Feb.	Mar.	Aug.	Sept.	Oct.	Nov.	Dec.
Bewl Water	250	520	500	1426	1500	743	679	378
Weir Wood Res.	271	224	60	111	252	250	160	125
Amberley/Pulborough	650	160	250	500+	500+	500+	670	500+
Arundel WFT	243	264	92	400	400	350	200	222
Arlington Res.	105	200	—	385	36	4	45	72
Barcombe Res.	205	111	—	264	6	6	2	350
Chichester GP	33	30	23	2	2	0	0	0
Rye Hbr	108	90	144	230	300	350	200	222

The Aug. and Sept. counts at Bewl Water were new records for a single site in Sussex. Elsewhere large flocks included 114 and 149 at Darwell Res. on 12 Jan. and 31 Aug. respectively, 140 at Stedham sand pit on 17 Aug. and c.160 in the Lower Cuckmere from 24 Sept. to 3 Oct.

In the breeding season 63 pairs were reported from 34 sites. A total of 225 young were seen including 39 at Rye, 25 at Weir Wood, 23 at Plashett Park, 20 at Bewl Water, 15 at Warnham, 11 at Chalvington, 9 at Darwell and only 8 at Petworth Park, where breeding was controlled. The most common brood size was 4, though a pair at Plashett Park was seen with 11 goslings. For those sites where sufficient information was available, breeding success was low at 3.5 young per nesting pair and fledging success was just below average at 4.13 per pair.

56. **BARNACLE GOOSE (*B. leucopsis*)**.—Once again numerous reports were received of 1-8 birds associating with flocks of Canada Geese. A feral pair hatched 3 young at Plashett Park.

The origin of a flock of up to 17 seen in the area bounded by Bracklesham Bay, Chichester Hbr and Pagham Hbr between 21 Mar. and 23 May is uncertain, although the late date of departure suggests that these too were feral.

57. **BRENT GOOSE (*B. bernicla*)**.—The estuary counts were:

	1986			1987			1988			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	12118	12917	11923	169	4129	8047	11084	5904	12261	7467
Chichester Hbr	10361	9966	8879	166	3980	7043	9229	5379	9998	7005
Pagham Hbr	1735	2907	2797	1	138	1002	1830	424	2251	340

The spring passage totals at the main localities were: Selsey Bill 1187, Worthing 3765 (peak 629 on 13 Mar.) and Beachy Head 1253 (peak 388 on 13 Apr.). There were 918 E at Seaford on 16 Mar. Analysis of these records indicates that a minimum of 4951 birds were involved. Of these 3263 were in Mar., 1262 in Apr. and 426 in May.

Up to 24 summered in Chichester Hbr. The first returning birds were seen at Worthing on 13 Sept. and at Chichester Hbr and Pagham Hbr on 18th. On 2 Nov. there was a large coastal movement with 2566 W at Worthing, 791 W at Littlehampton and 1500 W at Pagham Hbr. A total of 62 passed S over Bewl Water between 24 Sept. and 21 Nov. and there were 150 SW at Robertsbridge on the first date.

Single birds of the pale-bellied race *hrota* were seen in Chichester Hbr on 23 Feb. and 14 Dec. and at Church Norton on 21 Oct. There were 2 at Pagham Hbr from 19 Jan. to 8 Mar. and 6 at Cuckmere Haven on 25 Feb.

Birds showing the characteristics of the race *nigricans* or Black Brant were seen at Pagham Hbr from 26 Jan. to 8 Mar. (ARK, AJP *et al.*), at Bosham on 31 Jan. (AJH, RSW) and at Thorney Island between 2-23 Nov. and 24-31 Dec. (CBC, MAC *et al.*). These records,

which have been accepted by *British Birds*, are the first for the county although it is considered that the Pagham and Bosham birds relate to the same individual.

58. **RED-BREADED GOOSE (*B. ruficollis*)**.—An adult was seen with Brent Geese at Pagham Hbr from 30 Jan. to 3 Mar. (BJ, CMJ *et al.*). It has been accepted by *British Birds* and is the second for the county, the first having occurred as long ago as 1958.

Cat. C. **EGYPTIAN GOOSE (*Alopochen aegyptiaca*)**.—One was seen regularly in the Arun Valley throughout the year. A single bird was seen at Weir Wood Res. on 17 Aug.

61. **SHELDUCK (*Tadorna tadorna*)**.—The estuary counts were:

	1986			1987			1988			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	3569	3061	3076	130	298	849	1250	4280	4361	3174
Chichester Hbr	2556	2225	2489	104	195	640	953	2959	3772	2607
Pagham Hbr	887	624	473	10	91	195	258	1048	527	437
Rye Hbr	92	170	79	13	9	10	32	132	22	63
Newhaven	12	31	3	3	—	1	—	110	2	—

Small numbers were seen on spring passage, with counts of 76 E 9 W at Selsey Bill and 151 E 136 W at Worthing.

During the breeding season, a total of 94 young were counted in Chichester Hbr. At Rye Hbr LNR at least 2 pairs nested and broods of 5 and 13 young were recorded. Single pairs bred at Cuckmere Haven, Newhaven Tidemills, Pevensey Levels and Piddinghoe and broods of 7, 5, 4 and 7 respectively were hatched. Inland there were reports of single pairs at 4 localities. Breeding was proved at Chichester GP and Lurgashall Mill Pond and 6 and 8 young respectively were counted.

There were 51 W during cold weather at Climping on 23 Dec.

63. **MANDARIN (*Aix galericulata*)**.—At the beginning of the year only small numbers were reported from 10 localities. In the breeding season c.25 pairs were reported from c.20 sites, and of these 13 pairs were known to have had broods totalling 56 young. Slightly more widespread at the end of the year with a post-breeding flock of 43 in the NW at Lurgashall in Sept., up to 12 roosting at Maynards Green from Oct. to Dec. and c.50 at Arundel WFT on 31 Dec.

64. **WIGEON (*Anas penelope*)**.—The monthly wildfowl counts at the principal localities were:

	1986			1987			1988			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	5417	3108	2341	206	1165	1887	2600	11974	2496	1708
Pagham Hbr	1377	304	55	8	47	95	264	4528	57	30
Chichester Hbr	1085	525	580	103	728	860	1013	2485	367	354
Arlington Res.	1000	150	0	0	0	9	57	650	21	42
Bewl Water	272	569	339	28	200	453	374	1170	308	303
Amberley	532	500	400	22	40	200+	500+	1000+	600+	400+

The Jan. 1986 count was above average for recent years but only just over a third of the exceptional count in Jan. 1985. Other records included 750 on the Adur Levels and 270 on Lewes Brooks on 11 Jan., 250 on Pulborough Brooks on 13 Jan., c.1000 at Waltham Brooks and 200+ at Combe Haven on 19 Jan., c.300 off Rye on 9 Feb. and 210 on Pett Level on 10 Feb. Smaller numbers were reported from other regular sites in Jan.-Mar. but 2 at Brooklands from 15-19 Feb. and a drake at Ifield from 8-23 Mar. were exceptional. Small numbers were still being reported from the main areas during Apr. but thereafter the only records were of a drake at Waltham Brooks on 14 May, a pair at Barcombe Res. on 1 May and 2 June, a duck at Dell Quay on 8 June, and 2 drakes at Rye on 21st.

A single duck was at Waltham Brooks on 6 Aug. and by the third week of the month small numbers were reported from Rye, Bewl Water and Pagham Hbr. By 9 Sept. 150 were at Thorney Deep and regular movements were noted off Worthing and Church Norton after 13 Sept. At the end of the year additional counts in the Lower Cuckmere included 283 on 30 Nov., 445 on 21 Dec. and 584 on 27-29 Dec.

67. **GADWALL** (*A. strepera*):—The monthly wildfowl counts at the principal localities were:

	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	154	214	141	48	124	226	220	459	176	104
Bewl Water	61	62	40	15	61	123	104	230	28	12
Arundel WFT	42	61	44	13	24	70	55	28	52	40
Swanbourne Lake	0	5	3	6	0	2	0	149	16	11
Chichester GP	24	63	28	0	4	2	5	12	24	4
Amberley	6	12	6	12	14	17	43	20	32	12

The Jan. 1986 count was below recent average figures but the count for Feb. equalled the county record for any month. Other counts included 36 at Chichester GP on 9 Mar. and much higher figures than listed above for Swanbourne Lake, e.g. c.40 on 26 Jan., 133 on 9 Feb. and 61 on 2 Mar. Counts at the Crumbles GP were 19 on 12 Jan. and 19 Feb. and 24 on 2 Mar. Smaller numbers were reported from several other waters, too numerous to list, throughout the east and west of the county.

In the breeding season there were records for several sites in the Arun Valley and a few in the Lower Adur Valley, also for Burton Pond, Lurgashall and Pond Lye, but there was no evidence of confirmed breeding.

At Bewl Water 3 had returned by 10 Aug.; thereafter numbers built up gradually across the county to reach new record totals in Nov. and Dec. Other counts included 19 at Rye in mid-Oct., c.40 at Waltham Brooks on 9 Nov., 17 at the Crumbles on 22 Nov. and 105 at Arundel WFT on 24 Nov.

69. **TEAL** (*A. crecca*):—The monthly wildfowl counts at the principal localities were:

	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	450	1902	1191	801	1541	2539	2878	1473	1462	1442
Chichester Hbr	609	588	573	576	1072	1834	1526	902	913	947
Amberley	600	300	245	60	100+	250+	500+	200+	200+	150+
Pagham Hbr	239	384	79	4	47	173	398	134	154	46
Darwell Res.	509	227	12	0	23	1	120	33	5	22

The Jan. 1986 count was the highest for many years and numbers remained high in Feb. and Mar. Most birds were found at the coast although numbers at Darwell Res. were also unusually high. Other counts included 300 at Combe Haven on 19 Jan. and 150 on 4 Feb., 100+ on the Adur Levels on 11 Jan. and 150 in the Ouse Valley on 16 Feb.

As usual there were several records of small numbers scattered inland in Apr. but May and June records at possible breeding sites were restricted to Forest Mere, Sidlesham, Arundel WFT, Waltham Brooks and Rye.

Later in the year c.300 were on Thorney Deepes on 9 Sept., 216 at Arundel WFT in Oct., c.500 at Waltham Brooks on 22 Nov. and numbers generally built up to above average levels by mid-Dec.

70. **MALLARD** (*A. platyrhynchos*):—The monthly wildfowl counts at the principal localities were:

	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	4366	4203	1966	3635	3716	4903	3601	5286	2927	2196
Arundel WFT	353	558	243	530	455	653	459	862	628	397
Bewl Water	645	515	176	589	549	618	344	490	337	240
Chichester Hbr	520	486	388	260	436	640	549	500	532	289
Pagham Hbr	233	422	123	190	462	303	210	462	175	173
Rye Hbr	390	462	97	330	158	260	154	460	85	193
Arlington Res.	320	50	50	8	205	368	180	248	95	42
Darwell Res.	319	307	122	19	51	185	323	373	128	55
Weir Wood Res.	113	220	50	52	60	135	100	NC	50	50
Alexandra Park	122	214	178	132	159	158	177	260	126	105

The Jan. 1986 count was about average for recent years. Other counts received included 370 at Barcombe Res. on 4 Jan., 210 at Hampden Park on 13 Feb. and c.500, being fed on grain, at Bewl Water on 1 Mar. Very little breeding information was received, but the

breeding population at Rye Hbr was estimated at c.30 prs and that at Bewl Water at c.51 prs. Post-breeding counts included 775 at Bewl Water on 22 Aug., c.500 at Rye on 1 Sept. and 260 at Weir Wood Res. on 28 Sept. At the end of the year there were 340 at Arlington Res. on 22 Dec. and c.400 at Bewl Water on 29 Dec.

72. **PINTAIL** (*A. acuta*):—The monthly wildfowl counts at the principal localities were:

	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	883	568	308	4	23	202	310	471	280	282
Pagham Hbr	718	455	129	0	1	126	172	181	150	137
Chichester Hbr	132	64	137	2	15	65	88	251	85	110
Amberley	31	17	42	1	3	7	47	28	34	30

The Jan. 1986 count was probably the highest count ever recorded in the county and was more than double the average in recent years; numbers remained high in Feb. and Mar. Parties of 15 or less were reported from 14 other coastal and inland waters. The last seen were a pair at Waltham Brooks on 20 Apr.

One had returned to Rye Hbr on 18 Aug. and thereafter small numbers were reported during Aug. and Sept. from Rye, Bewl Water and Sidlesham. At the end of the year c.40 were at Pagham on 3 and 22 Oct., 20 at Waltham Brooks on 22 Nov. and 120 and 214 at Thorney Deepes on 8 Nov. and 3 Dec. respectively. Elsewhere parties of 5 or less were reported from 7 localities.

73. **GARGANEY** (*A. querquedula*):—Another poor year with only 4 spring records: a duck at Bewl Water on 13 Mar., a drake at Barcombe Res. on 14 Mar. and single pairs at Combe Haven and Rye on 5 and 9 Apr. respectively.

A drake was seen on 3 dates in early June at Sidlesham. At Rye 1-3 birds were reported regularly from 9 July, increasing to 6 in Aug. Other Aug. records included 3 ducks at Pett Pools on 2 Aug. and 3 at Icklesham on 23 Aug., also a drake at Waltham Brooks on 6 Aug. and a drake and 2 ducks there on 19 Aug. A pair was at Bewl Water on 6 Sept. and singles at Rye Hbr on 6 days in the month. A further single was recorded at Rye on 3 Oct. and the last seen were 2 there on 2 Nov. and one on 15th.

75. **SHOVELER** (*A. clypeata*):—The monthly wildfowl counts at the principal localities were:

	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	131	93	112	121	78	95	223	110	147	94
Amberley	26	22	41	7	23	34	100+	14	8	31
Rye Hbr	—	—	3	95	23	1	—	13	3	15
Chichester GP	5	28	22	—	—	3	6	30	9	17
Arundel WFT	16	19	19	15	21	21	21	21	24	20
Chichester Hbr	9	—	14	4	4	10	6	15	72	2

The Jan. 1986 count was above that for Jan. 1985 but still the second lowest count for many years. Other counts included 50 at Combe Haven on 16 Jan. and 25 there on 24 Mar., 35 at the Crumbles GP in mid-Jan. and 21 in the Lower Cuckmere on 22 Feb. Otherwise numbers less than 20 were reported from Barcombe Res., Pett Level, the Upper Adur Valley, Gatwick and Pagham Hbr. April numbers included a pair at Ifield Pond on 10th, 3 pairs on Pevensey Levels on 15th and a drake at Waltham Brooks. In May single pairs were seen at Rye Hbr and Barcombe Res., 2 drakes at Hampden Park, 4 drakes at Sidlesham and 6 birds at Combe Haven, but there was no evidence of breeding at any of these sites.

Small numbers were present in the Rye area in the last week of June and the species became more general across the county during Aug. The Sept. wildfowl count looked very promising but numbers failed to build up until mid-Dec. Other counts included 25 at Arlington Res. on 21 Dec., 36 at Crumbles GP on 28 Dec. and 50 at Pett Level in mid-Dec. Parties of less than 25 were also reported from Barcombe Res., Bewl Water, Burton Pond, Knepp Lake, Lower Cuckmere Valley, Pagham Hbr, Petworth Park and Rye Hbr.

77. **POCHARD** (*Aythya ferina*):—The monthly wildfowl counts at the principal localities were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Arundel WFT	1057	1046	605	244	389	878	805	957	1065	625
Chichester GP	272	357	214	42	62	230	202	381	463	256
Rye Hbr.	190	181	87	152	163	155	197	98	157	68
Bewl Water	66	88	32	5	18	86	55	211	119	77
Weir Wood Res.	83	50	32	0	2	85	78	NC	53	49
Knepp Lake	38	54	30	12	14	106	20	0	30	29
Barcombe Res.	18	55	5	0	0	6	16	43	63	18

The Jan. 1986 count was the highest for 3 years but still only about average. Counts at the Crumbles GP were c.80 in mid-Jan. and c.50 in mid-Feb. and Mar. Elsewhere there were c.60 at Arlington Res. on 22 Feb., 55 at Bewl Water on 8 Mar., 90 at Barcombe on 9 Mar. and 160 at Rye on 18 Mar.

In the spring a pair was at Rye on 16 Apr., 9 on 30 May and 1-3 in June. Other May-June records included a drake at Bewl Water on 18 May, a drake and 2 ducks at Swanbourne Lake on 12 June and a drake at the Crumbles GP on 23 June. The only proven breeding was at Church Norton where a duck was seen with 3 young on 14 June. Numbers began to build up again at Rye Hbr and Chichester GP in early July. At the Crumbles GP there were 52 on 15 Sept., 74 on 11 Nov. and 79 on 11 Dec. and by the end of the year there were c.100 at Bewl Water.

80. **TUFTED DUCK** (*A. fuligula*):—The monthly wildfowl counts at the principal localities were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Arundel WFT	1070	1179	845	483	583	933	929	1255	1150	1169
Chichester GP	319	386	237	132	135	242	444	334	252	252
Weir Wood Res.	31	122	48	4	3	11	15	NC	27	15
Bewl Water	105	117	66	63	55	83	150	288	126	174
Rye Hbr.	104	82	80	15	33	55	34	55	45	83
Barcombe Res.	74	66	13	6	5	27	41	67	34	31
Ardingly Res.	0	12	7	14	5	50	38	33	6	51
Chichester Hbr.	18	6	4	1	17	25	16	41	71	36
Swanbourne Lake	15	12	13	13	0	4	6	39	13	43
Burton Ponds	30	39	29	23	15	22	26	0	21	31

The Jan. 1986 count was just below the average in recent years. Other counts included c.50 at the Crumbles from mid-Jan. to mid-Mar., 36 at Cuckmere Haven on 15 Feb., 74 at Barcombe Res. on 22 Feb. and 102 at Bewl Water, feeding on grain on 8 Mar.

Breeding season coverage was very poor but 9 of the 13 pairs at Bewl Water raised 54 young and 6 broods totalling 23 young were seen at Chichester GP. At Rye there were 9 pairs, but breeding success was poor, and none bred at Weir Wood Res. Other records included 2 pairs with 9 young at Gravetye, one pair with 3 young at Cophorne and one pair with 8 young at Chingford. (Counts are required of pairs in suitable breeding localities, particularly in June and July.)

At the end of the year counts at the Crumbles GP were 35 on 17 Sept., 58 on 11 Nov. and 87 on 11 Dec.

81. **SCAUP** (*A. marina*):—In the first half of Jan. a total of c.25 were reported from Rye (where there were 11 on 1st), the Lower Cuckmere, Newhaven and Thorney Channel. In early Feb. numbers were low with 3 on the Adur Estuary from 9-16th and then 3 at Widewater from 19 Feb. to 19 Mar. A single female was seen at Brooklands on 9 Feb. and a drake first reported at Paghham Hbr on 18 Feb. was still there on 1 Mar. In the second half of Feb. 60+ were seen off Rye Hbr on 23rd and these increased to 76 on 7 Mar. and 90 on 9th, prior to decreasing to 3 on 19th. There were 2 females at Brooklands from 9-16 Mar. and 2 at Paghham Hbr. and Chichester GP on 15 and 23 Mar. respectively. There were no April or May records.

In the second half of the year the first was a single bird which flew into the Lower Cuckmere on 27 Aug. after storms at sea. Thereafter, one was off Church Norton from 3-6 Nov., 4 at Chichester Hbr on 17 Nov. and 6 Dec. with one staying until 21st. At the Crumbles GP one was present from 22 Nov. until 28 Dec.



82. **EIDER** (*Somateria mollissima*):—Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
81	24	32	143	50	17	4	7	34	16	33	74

The regular winter flock at Selsey Bill was smaller than usual with counts of only 16 in Jan., 10 in Feb., 12 in Mar. and 40 in Apr. There were 35 off Lancing on 1 Jan.

Spring movements at the main sea-watching localities totalled 162 E of which 18 were in Mar., 99 in Apr. and 45 in May. There were no reports of over-summering birds.

Few autumn or winter records were received, the maximum counts reported being 15 at Selsey Bill on 19 Oct. and 32 at Bracklesham Bay and 23 in Chichester Hbr on 27 Dec.

86. **LONG-TAILED DUCK** (*Clangula hyemalis*):—Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
8	2	3	3	1	—	—	—	—	—	—	—

In Jan. single birds were seen at the Crumbles, Rye Hbr and Worthing. There were 2 at Paghham Hbr from 4-12th and up to 3 remained in Chichester Hbr into March. A male was seen at Chichester GP on 29-30 Mar. and a pair was recorded at Church Norton on 12 Apr. Single birds flew E at Selsey Bill on 15 Apr. and 4 May. The latter bird was also seen at Worthing.

87. **COMMON SCOTER** (*Melanitta nigra*):—The regular winter flock at Rye Bay totalled 200 in Jan. and 50 in Feb.

Observations at the main sea-watching localities were as follows:

Direction of movement	Jan-Feb.		Mar-May		June-July		Aug-Sept.		Oct-Dec.	
	E	W	E	W	E	W	E	W	E	W
Selsey Bill	—	—	1623	—	28	—	3	—	11	—
Worthing	18	33	3411	71	120	16	32	28	13	18
Brighton Marina	—	—	1033	—	128	12	—	—	—	—
Beachy Head	—	—	2329	—	—	—	—	—	—	—

Analysis of the Mar-May data indicates that E spring passage involved a minimum total of 4606 birds. Of these 303 were in Mar., 2184 in Apr. and 2119 in May. The peak movement was on 15 Apr. when there were 563 at Worthing.

Inland there were 7 at Weir Wood Res. on 27 Apr. and 11 on 24 Aug. A female was seen at Bewl Water on 12 Apr. and a pair on 27th.

89. **VELVET SCOTER** (*M. fusca*):—Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4	3	42	44	—	—	—	—	—	—	—

Spring passage occurred from 25 Mar. with birds recorded flying E as follows: Selsey Bill 24, Worthing 48, Brighton Marina 13, Seaford 14 and Beachy Head 31. Analysis of these records indicates that a minimum of 89 birds were involved. The peak movement occurred on 23 Apr. when there were 13 E at Worthing.

Inland, there was a male on the R. Adur at Henfield from 28-31 Dec. (SLo).

91. **GOLDENEYE** (*Bucephala clangula*):—The approximate monthly totals were:

	Jan.	Feb.	Mar.	Apr.	Oct.	Nov.	Dec.
<i>County totals*</i>	67	75	160	8	2	32	39
Adur	1	2	5	—	—	—	—
Arun	1	2	4	1	—	—	—
Barcombe Res.	1	1	2	—	—	—	—
Bewl Water	2	6	4	3	1	4	2
Brighton Marina	—	—	—	—	—	—	—
Chichester GP	1	4	3	—	—	—	23
Chichester Hbr	42	46	100	—	—	23	—
Combe Haven	2	—	—	—	—	—	2
Crumbles	3	2	11	—	—	1	—
Cuckmere	2	2	2	—	—	—	—
Ifield Mill Pond	2	—	1	—	—	—	—
Newhaven	—	2	—	—	—	—	—
Ouse	—	—	7	—	—	—	—
Pagham Hbr	1	1	6	—	—	—	1
Rye Hbr	2	7	5	—	1	3	6
Wey Wood Res.	10	—	8	4	—	1	5

* excluding birds seen migrating along the coast.

There were no significant records of birds on passage at coastal localities.

93. **SMEW** (*Mergus albellus*):—Fewer were seen than in 1985 but the number of records was still very high.

In early Jan. there were 4 (including a male) at Northpoint GP but the only other reports for the month were of single birds at Bewl Water, Combe Haven, Pagham Lagoon and Thorney Island. The species was much more widespread in Feb. with a total of 27 reported from 9 localities. At Northpoint GP the numbers built up slowly through the month to 11 (1 male) and further increased in Mar. to 27 (7 males), of which 10 (3 males) remained until 9th. A further 16 birds were reported from 6 other localities in Mar. including 5 (1 male) on the R. Ouse, 3 (1 male) at Widewater and 3 at the Crumbles.

There were no records for the latter part of the year.

94. **RED-BREADED MERGANSER** (*M. serrator*):—The estuary counts in Jan., Feb. and Mar. were 43, 28 and 50 respectively (cf. 61, 40 and 44 in 1985). At Worthing up to 39 were seen in Jan., 30 in Feb. and 48 in Mar.

Spring movements at the main sea-watching localities totalled 726 E, of which 230 were in Mar., 450 in Apr. and 46 in May. The peak movement occurred on 30 Mar. when there were 82 E at Selsey Bill.

Up to 2 were seen in Chichester Hbr between 6 June and 6 July and there were single birds at Pagham Hbr on 23 June and at Rye Hbr on 5 July.

The first returning birds were seen at Worthing on 2 Sept. but few were recorded thereafter until Nov. The estuary counts for Nov. and Dec. were 73 and 149 respectively (cf. 54 and 108 in 1985).

There were no inland records.

95. **GOOSANDER** (*M. merganser*):—In Jan. there were 5 redheads at Barcombe Res. on 1st, 4 (3 males) on the R. Cuckmere on 4th, a redhead on the sea off Southwick on 20th and a male W at Worthing on 25th. The redhead recorded at Pagham Lagoon in Dec. 1985 remained until 1 Mar. At Arlington Res. birds were reported regularly between 24 Jan. and 9 Mar. with a maximum of 11 on 16 and 22 Feb. and 2 Mar. The Feb. and Mar. totals for the remainder of the county were 15 and 28 respectively. In Apr. there was a male off Pett on 15th and at Worthing a redhead flew E on 15th. There were 2 males E at Beachy Head on the late date of 7 May.

In the second winter period single birds were recorded at Arlington Res., Barcombe Res., R. Ouse and Rye Hbr in late Dec.

Cat. C. RUDDY DUCK (*Oxyura jamaicensis*):—Present for much of the year at Chichester GP and Arundel WFT. At Chichester the monthly maxima were:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10	—	—	—	2	1	2	2	—	—	19	3	3

At the Crumbles GP up to 4 were recorded in Jan. and 3 in Feb. The last seen there were 2 on 2 Mar. Elsewhere there were singles at Barcombe Res. from 1-12 Jan., Darwell Res. on 16 Feb. and Seaford on 18 Feb.

In the breeding season one pair was displaying at Ivy Lake, Chichester GP in Apr. but there was no evidence of subsequent breeding. Two broods were seen at Swanbourne Lake, neither of which survived.

At Rye a single was present from 25-27 Sept. and there were 1-3 in Oct. Two were recorded at Church Norton on 23 Oct. At the end of the year one was seen at Barcombe Res. on 6 Dec., 8-9 regularly at Arundel WFT in Dec., 2 at Bewl Water on 28-29 Dec. and up to 3 at Crumbles GP from 23 Nov. to 23 Dec.

97. **HONEY BUZZARD** (*Perms apivorus*):—1985:—One WNW over Worthing on 8 June (DIS).

1986:—Single migrants were seen at Beachy Head on 24 May (R.J.F., M.K., NAGL *et al.*) and over Worthing on 18 June (CEM).

98. **BLACK KITE** (*Milvus migrans*):—Single birds at Pagham Hbr (PFBu, PR, RWh *et al.*) and Fairlight (CHD) on 26 Apr. and at Beachy Head on 29th (BMM, DCM) have been accepted by *British Birds*. A further record remains under consideration.

99. **RED KITE** (*M. milvus*):—1985:—One was seen at West Grinstead on an unspecified date in Oct. (PM).

1986:—Single birds were recorded at Pett Level on 27 Apr. (CHD) and at Southeast on 20 Aug. (EF, B.J.G.).

103. **MARSH HARRIER** (*Circus aeruginosus*):—There were 2 winter records, a female or immature at Cuckmere Haven on 15 Feb. (GG) and a male at Pevensey Levels on 7 Mar. (PEB).

Spring passage was recorded between 27 Apr. and 27 May with a minimum of 12 individuals reported from the coast. Of these, 7 were in the Rye/Hastings area.

In autumn, a total of 6 were reported from coastal localities between 1-21 Sept. The only inland record for the year was one at Lullington Heath in mid-Sept.

104. **HEN HARRIER** (*C. cyaneus*):—A total of 45-50 birds was recorded, a similar figure to that of 1985. Monthly totals were:

	Jan.	Feb.	Mar.	Apr.	May	Aug.	Sept.	Oct.	Nov.	Dec.
Adult males	6	4	5	1	—	—	—	—	—	4
Others	6	10	6	2	1	1	1	—	7	5

The traditional wintering areas were again frequented and the vast bulk of the records can be grouped and summarised as follows:

Midhurst Area. A total of 2 males and 3 ring-tails were recorded at 3 roosts in the early months. At the end of the year a male and a ring-tail roosted at one site.

Chichester Harbour. A ring-tail on 12 and 16 Feb. In the latter part of the year up to 2 ring-tails between 6-9 Nov. and a male on 27 Dec.

Selsey Peninsula. A male and a ring-tail from 28 Feb. to 6 Mar. and a single bird on 15 Jan. A ring-tail on 1 Nov. and 9 Dec.

Chichester Downs. A male at Goodwood on 24 Jan. and a ring-tail at Kingley Vale from 9 Mar. to 12 Apr. and on 8 Dec.

Amberley. Two ring-tails from 10 Jan. to 8 Mar.

Ouse Valley and Downs. Up to 2 males and a ring-tail between 12 Jan. and 5 Apr. The only other sightings were of ring-tails on 25 Aug. and 4 Nov. and a male on 10 Dec.

Cuckmere Valley and Downs. 1-2 ring-tails between 11 Feb. and 21 Mar. Single ring-tails on 14 Nov. and 4 Dec.

Ashdown Forest. Probably 2 different males between 12 Jan. and 25 Apr. and a ring-tail on 2 Mar. A male on 22 Nov. and 14 Dec.



Pevensy Levels. Two ring-tails from 13 Feb. to 15 Mar. and a male on 13 Feb. and 7 Mar. A ring-tail on 14 Nov. and 4 Dec.

Combe Haven/Pett/Rye. At least 2 ring-tails from 5 Jan. to 16 Apr. and a male between 5-26 Jan. and from 2-7 Mar. In autumn, single ring-tails between 22 Sept. and 3 Oct. and from 6 Nov. to end of year.

In addition there were single ring-tails at Ripe on 26 Jan. and at Chalvington on 6 Apr. Migrant birds were recorded arriving from the sea at Beachy Head on 12 May and 15 Nov.

A ring-tail at Pevensy Levels on 27 May was either this species or *pygargus*.

105. **MONTAGU'S HARRIER** (*C. pygargus*):—An adult male was recorded at Sidlesham Ferry on 6 Aug. (BJ, CMJ) and single immatures were seen at Church Norton on 28 Aug. (TJE) and at Climping on 20 Sept. (OM).

107. **GOSHAWK** (*Accipiter gentilis*):—An immature female at Amberley Wild Brooks on 15 Feb. (RJF) and a juv. at Littlehampton Golf Course on 2 Sept. (RJLK) were the only acceptable records received.

108. **SPARROWHAWK** (*A. nisus*):—In the breeding season 114 sites were identified. Of these, 54 were considered to be occupied territories and 16 further sites probably held pairs, while singles were reported from the remaining 44 localities. Records of successful breeding were minimal (4 young raised from 3 nests) and must be considered unrealistic in the continued widespread reporting of the species. This may be reflected in the almost complete absence of coverage from such areas as Goodwood, Charlton Forest, and the NW and NE sectors of the county, albeit established sites continued to be used. The prolonged cold spell at the start of the year may also have left birds in poor breeding condition. In winter, 55% of the breeding season localities were found occupied and birds were noted at 40 other sites. A migrant was recorded at Littlehampton on 9 Sept., 3 at Birling Gap on 27th, and singles at Selsey on 14 and 18 Oct. and 27 Nov. There were 22 urban sightings throughout the year.

109. **BUZZARD** (*Buteo buteo*):—The continued presence of a feral population in Ashdown Forest makes the evaluation of records very difficult.

In Jan.-Mar. a total of 10 birds were reported from 8 widely scattered localities. In Apr. there was 1 N at Combe Haven on 13th and there were reports of single birds from 2 inland sites. There were no May records.

During the breeding season, pairs bred successfully at 2 localities, the first records of confirmed breeding in the county (excluding feral birds) since 1976.

Single birds over Worthing on 17 June and 10 July and at Hurst Green on 21 July were probably migrants. In Aug.-Sept. a total of 9 birds were reported from 6 coastal and 2 inland localities. These too were probably passage birds. The last for the year was 1 S over Cissbury on 11 Oct.

113. **OSPREY** (*Pandion haliaetus*):—An excellent year for this species with a probable total of 14 individuals recorded in the county. In spring, single birds were seen over Portslade on 14 Apr. (DSA, LS), at Weir Wood Res. on 6 May and from 30 May to 4 June (NAD, DCM, BMM *et al.*) and at Bewl Water on 25 May and 6 June (mo). There were 2 at the latter locality on 5 June. One was seen at Pett Level on the unusual date of 25 June (AJH, BJH).

In autumn, single birds were recorded at Bewl Water on 27 July and from 15-27 Aug. (PCB, AHL, MJP). An adult and an immature were present at Weir Wood Res. from 11-23 Aug. (NAD *et al.*) with, perhaps, a different individual on 30th (AJG, RFS). One at Ardingly Res. on 28 Aug. (KB, DBN) was possibly one of the Weir Wood birds. The last for the year was one at Darwell Res. on 14 Sept. (RGH).

115. **KESTREL** (*Falco tinnunculus*):—Although the acceptable criteria indicated 55 occupied territories, only 15 pairs were proved to have bred, raising 40 young as against 24 pairs producing 43 young in 1985. The brood size of 2.7 was thus well above the recent average of 2. A further 30 pairs probably bred, and with 34 singles also reported, the number of breeding season sites totalled 119. In addition, 36 winter-only areas were identified. Six of the 7 urban sites (4 in Brighton) probably held breeding birds; there were 5 pairs at Bewl Water; and density improved on the Downs behind Worthing with 8 pairs raising at least 9 young in the Findon area. In autumn there was a group of 10 over Castle Hill on 20 Sept. No positive instances of migration were recorded.

118. **MERLIN** (*F. columbarius*):—Recorded until 29 Apr. and from 30 Aug. Monthly totals were:

Jan.	Feb.	Mar.	Apr.	Aug.	Sept.	Oct.	Nov.	Dec.
9	4	5	4	1	5	11	11	11

In the early months single birds were recorded hunting at the usual downland and coastal localities. One was seen at Gatwick on 16 Jan.

Numbers in autumn were above average although most sightings were from those localities occupied in the early part of the year. Single birds (possibly the same) were recorded at Hurst Green on 7 Oct. and at Bewl Water on 9 Nov. and 28 Dec.

119. **HOBBY** (*F. subbuteo*):—In contrast to previous years, successful breeding was recorded at only 3 sites, a minimum of 6 young being raised. There was strong evidence that breeding may have taken place at 8 other sites and at least 3 juveniles were reported near the coast in autumn in these areas. Twelve of the September records were from Rye and 6 from the Selsey peninsula. First reported on 21 Apr. at Worthing and last seen on 12 Oct. at Woodingdean. Monthly totals of migrants were as follows:

Apr.	May	June	Aug.	Sept.	Oct.
5	16	4	10	28	2

123. **PEREGRINE** (*F. peregrinus*):—Another encouraging year following that of 1985. An adult male was seen in the Pagham/Chichester Hbr area between 20 Jan. and 9 Mar. but the only other records for the first part of the year were of single birds at Rye Hbr. on 11 Apr. and Beachy Head on 19th.

At least 2 individuals frequented the area between Beachy Head and the Cuckmere Valley in autumn with sightings recorded between 15 Aug. and 30 Nov. An immature at Denton on 20 Aug. was possibly one of the Beachy Head birds. Elsewhere, there were single adults at Portslade on 9 Oct. and at Shoreham on 6 Nov.

129. **RED-LEGGED PARTRIDGE** (*Alectoris rufa*):—Widely released for shooting, the largest coveys reported were 25 at Goodwood on 13 Oct. and 18 at Arundel and Midhurst on 15 Feb. and 27 Nov. respectively.

130. **GREY PARTRIDGE** (*Perdix perdix*):—Few records were received. The largest coveys reported were 40 at Rye Hbr in Dec., 30 at Clayton in Dec. and 25 at Lurgashall on 5 Nov.

131. **QUAIL** (*Coturnix coturnix*):—A total of 10 were reported calling as follows: 2 at Plumpton on 4 May, 1 at Balsdon 11 June-13 July, up to 4 at a downland locality 18 June-28 July, 1 at Lewes Racecourse 2-13 July, 1 at Balmer Down 6-9 July and 1 at Beachy Head 10 July-10 Aug. Single birds were seen at leksham on 6-7 Sept. and at Brighton on 12th.

Cat. C. GOLDEN PHEASANT (*Chrysolophus pictus*):—During the breeding season 3 territories were recorded in 12.1 ha of West Dean Woods and 14 territories in 117.9 ha of Kingley Vale.

136. **WATER RAIL** (*Rallus aquaticus*):—Approximate monthly totals of non-breeding birds were:

	Jan.	Feb.	Mar.	Apr.	May	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of sites	8	15	12	5	1	1	1	5	7	7	13
Number of birds	35	44	16	44	1	1	1	7	11	14	58

During the early part of the year up to 25 were seen at one locality. A further influx occurred at this site in Apr. with 40-50 from 13th.

In the breeding season there were reports from 4 localities with single pairs at 3 sites and 10 occupied territories at the remainder. A juv. was trapped at a further locality on 17 July.

The first returning birds were seen at Chichester Hbr on 20 July and at Pagham Hbr on 21 Aug. In Dec. up to 40 were seen at one locality but numbers elsewhere were small.

141. **CORNCRAKE** (*Crex crex*):—One was flushed at Ifield on 17 Sept. (PASP).

142. **MOORHEN** (*Gallinula chloropus*):—Once again few records were received. The largest numbers recorded early in the year were 64 at Rye Hbr and 20 at Chalvington and Hastings. Only 9 breeding pairs were reported. In the latter part of the year the maxima recorded were 81 at Rye Hbr, 64 at Weir Wood Res. and 30 at Lurgashall Mill Pond.

145. **COOT** (*Fulica atra*):—The monthly wildfowl counts at the principal localities were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester GP	4620	3921	2880	1903	2563	3455	3262	5146	4346	2743
Bewl Water	1543	1210	762	842	1166	1227	1168	885	820	407
Rye Hbr	1068	1012	584	596	950	1677	1500	2013	1351	750
Chichester Hbr	771	881	804	53	100	87	236	931	1057	784
Ardingly Res.	413	68	228	56	97	61	72	319	177	135
Arundel WFT	120	160	110	97	112	143	75	417	324	184
Pagham Hbr	225	215	97	56	0	107	66	174	161	102
Weir Wood Res.	39	23	52	14	13	15	22	114	100	101
Barcombe Res.	47	72	35	20	4	9	5	0	45	20
Pett Level	32	0	0	0	0	1	7	59	0	31
	55	11	15	1	1	0	0	0	27	25

The Jan. 1986 count was about average for recent years. Other counts included 200 at the Crumbles GP in Jan. and 100 and 80 in Feb. and Mar., 45 at Barcombe Res. in Jan. and Feb. and 75 there in Mar. Numbers at Brooklands rose from 45 in Jan. to 65 in Feb. and Mar.

In the breeding season 31 pairs were recorded at Bewl Water, 22 nests were found but only 6 broods were seen. At Combe Haven 4 pairs nested on temporary flood water and one pair was successful. In Sept. numbers at the Crumbles had increased to 178 and these rose to 231 by mid-Dec. Similarly at Widewater there were 24 in Oct. and the numbers rose to 38 by the end of the year.

146. **CRANE** (*Grus grus*):—1984:—Two were seen at St Leonards on 10 Apr. (SCR) and an imm. was recorded from this locality between 15-24 May (KMJ). The latter bird was probably that seen at Small Dole from 29 Apr. to 9 May (SxBR 1984). These records have been accepted by *British Birds*.

151. **OYSTERCATCHER** (*Haematopus ostralegus*):—The estuary counts were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	1888	1914	1429	1563	1391	1886	1441	1229	1606	1072
Rye Hbr	813	1132	703	707	375	1065	698	657	842	615
Pagham Hbr	450	220	216	380	230	242	30	66	122	
Climping	384	340	244	306	330	308	302	191	309	170
Pett Level	170	200	200	166	170	165	90	250	220	130
	41	—	47	166	6	102	95	35	139	13

After a typical year with a distinct peak in autumn, the numbers dropped to a low level in Dec., almost entirely due to low winter numbers in Chichester Hbr. The summering flock in Chichester Hbr peaked at 400 on 8 June but decreased to 237 on 13 July, returning birds swelled it to 515 by 22nd. At Rye Hbr 80-120 non-breeders were present in summer. During the autumn up to 16 were regular on the R. Adur, far more than usual.

The regular feeding and roosting movements E and W along the coast in spring were again obvious. All inland records were at Bewl Water, involving 7 birds, 3 in Mar., 3 in May and 2 in Aug. The only breeding records submitted were of 8 nests on Stakes Island (5 young fledged), single pairs in potato and pea fields at Chidham and 23 pairs on Rye Hbr SSSI, although no young were known to have been raised there; at least 7 pairs bred at Pagham Hbr and one pair held territory on East Guldeford Level.

152. **BLACK-WINGED STILT** (*Himantopus himantopus*):—1984:—Two at St. Leonards on 13 May (KMJ) have been accepted by *British Birds*.

1986:—An adult E at Beachy Head on 2 May (RKH *et al.*) has been accepted by *British Birds*.

153. **AVOCET** (*Recurvirostra avosetta*):—The monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	3	6	30	20	12	—	—	—	7	2	1

Up to two wintered at Pagham Hbr and Pilsley Island. Spring passage commenced mid-Mar. with 1 at Widewater on 13th. During Apr. 6 were noted in Pagham Hbr and 16 at Rye Hbr, including 14 on 21st, and there was an unusual flock of 6 at Bewl Water on 8th. In May few were seen except a flock of 13 which flew past Worthing on 20th and later were on Rye Hbr LNR. The last spring migrants were 6 at Rye Hbr on 22 June.

Autumn movements were poor although 4 were on Pett Pools on 15 Sept. Apart from wintering birds in Pagham and Chichester Hbrs, 6 flew S from Waltham Brooks on 11 Dec.

154. **STONE CURLEW** (*Burhinus oedienemus*):—1976:—One was seen at Wepham Down on 27 Mar. (ASC). Two others were seen on passage that year and 3 pairs bred.

1986:—One was seen at Langney Point on 11 Sept. (PEB). This species has now been recorded on just 4 occasions in the last 5 years.

158. **LITTLE RINGED PLOVER** (*Charadrius dubius*):—An average year, the approximate monthly totals away from breeding sites being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	—	14	8	3	38	40	5	—	—	—

First recorded near Ifield on 2 Apr., followed by 2 at Bewl Water on 4th and 1 at Gatwick on 5th. Singles were seen at Brighton Marina on 12th, Arundel WFT on 18th, Combe Haven on 25th, Birling Gap and Cuckmere Haven on 26th and Seaford on 27th when 3 were present at Gatwick. In May 2 were reported from Rye Hbr on 4th, 2 at Bewl Water on 5th and singles at Birling Gap on 6th, Chichester GP on 10th, Combe Haven on 16th and Amberley on 19th.

During the breeding season at least 5 pairs were reported from 5 sites, with a total of 11 young seen; birds were also regularly present at Chichester GP and Waltham Brooks.

Autumn passage was noted from 9 July when one was seen at Cuckmere Haven, with 2 at Sidlesham Ferry from 11th. On 17th 2 were seen at Lurgashall Mill Pond, while 3 were present at Rye Hbr. on 18th and birds at Sidlesham increased to 6 on 24th. At Pett Pools 6

were seen on 27 July with 3 remaining to 11 Aug. In mid-Aug. 1-3 were seen at Barcombe Res., Arlington Res. and Darwell Res. Three were reported from the Crumbles and 2 at Rye Hbr on 23 Aug. Sept. records were of singles at Thorney Island on 6th and Bewl Water on 6-7th, 2 at Arlington Res. on 14th and one at Pett Pools on 26th and 28th.

159. **RINGED PLOVER** (*C. hiaticula*):—The estuary counts were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	807	380	287	450	879	987	951	179	613	283
Pagham Hbr	203	93	77	192	507	624	585	49	255	84
R. Adur	217	15	106	36	156	168	150	23	210	74
Pett Level	56	2	30	42	29	26	20	4	15	55

Early in the year the severe Feb. weather reduced numbers dramatically except on R. Adur. On the coast other Jan. peaks included 64 at Cuckmere Haven and 30 at Brighton Marina. Spring passage was poor, just 64 flew E at Worthing with 18 on 2 May.

Breeding records were incomplete but 70 pairs were reported. At Rye Hbr 43 pairs had a very poor breeding season, others were 16 pairs at Pagham Hbr, 4 pairs at Widewater (no young reared), 2 pairs on Stakes Island (3 young) and Cuckmere (2 young) and single pairs at Chidham (2 young) and Brighton Marina. Unusually, a pair held territory in a pea field on Sumping Brooks.

Autumn migration was at its peak in late Aug. with peaks of 600 at Chichester Hbr, 330 on R. Adur, 50 on the Cuckmere, and 88 on Worthing Beach. On 21 Aug. 102 flew W past Worthing. Unusually, very few were seen inland, just singles at Bewl Water and Gatwick and 3 at Arlington Res.

161. **KENTISH PLOVER** (*C. alexandrinus*):—Two were recorded during the year, a male at Rye Hbr on 6 May (CB, BJJ) and one at Pilsey on 4 Oct. (CBC, MAC). An average showing.

163. **DOTTEREL** (*Eudromias morinellus*):—After the record 19 in autumn 1985, even more were seen in the county in 1986, but again none were in spring. One was found near Balsdean on 13 Aug. with 2 there on 20th and 22nd and singles nearby to 28th when 8 were seen at Balsdean. This had risen to 11 on 30-31st, but only 2 were found on 1 Sept. and none subsequently (GAS *et al.*). Of these only 2 were adults. Elsewhere 3 (2 ad., 1 juv.) were seen at Wick Bottom, East Brighton on 19-20 Aug. (NAGL *et al.*) and 12 adults were present at Jury's Gap from 23-25 Aug. (AD *et al.*).

165. **GOLDEN PLOVER** (*Pluvialis apricaria*):—The estuary counts were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	2441	742	—	43	71	239	1971	—	161	93
Pagham Hbr	247	303	—	154	239	258	423	—	64	525
Rye Hbr	2	1	38	—	12	385	8	—	—	93
Pevensy Levels	40	200	180	—	—	—	—	—	—	—

In Jan. elsewhere the main flocks reported were peaks of 250 at Ringmer, 212 on Pevensy Levels, and c.1000 on Broomhill Level. Numbers dropped sharply in most areas after 1 Feb. when the severe weather set in; apart from estuary counts above only 12 were noted in the rest of Sussex in Feb. Fairly small numbers were noted in Mar. although 210 trickled N over Combe Haven. A poor spring passage involved peaks of 116 in Chichester Hbr on 12 Apr. and 20 on Selsey West Fields on 27th; May brought one to Ifield Mill Pond on 8th and the last was at Pagham Hbr on 30th.

Returning birds were first seen on 26 July with 6 on Thorney and up to 5 at Pagham, where at least 2 were definitely of the Northern race (*altilifrons*). A very early newly-arrived flock of c.400 on Broomhill Level on 12 Aug. included many in breeding plumage. Early winter concentrations were 405 on Thorney on 31 Oct. and 464 there on 14 Nov. and at least 245 on Pevensy Levels in Nov. At Ringmer 20 on 22 Nov. built up rapidly to 435 by 28 Dec. when there were 450 at Nyetimber.

166. **GREY PLOVER** (*P. squatarola*):—The estuary counts were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	1727	1735	1598	2551	4180	2428	1699	1411	2177	1050
Pagham Hbr	807	1065	814	2044	3168	1283	1258	492	1631	349
Goring	75	406	727	499	1006	967	312	775	422	566
Pett Level	31	NC	2	NC	NC	NC	NC	NC	NC	NC
Climping	20	65	16	—	4	1	54	71	93	91

Early in the year numbers were only slightly below the average figure, despite the severe weather. Spring passage was poor, the three principal seawatching sites noting a total of just 138, of which 107 were in May.

Quite large numbers summered at Chichester Hbr where there were 200 on 24 May, 250 on 20 June and 300 on 6 July. Here numbers built up to 700 by 24 Aug. but elsewhere few autumn migrants were noted until Oct. when record numbers were in both Chichester and Pagham Hbrs. Inland, there were singles at Bewl Water on 6 Jan. and 14 Sept. and at Arlington Res. on 27 Apr.

167. **SOCIABLE PLOVER** (*Chettusia gregaria*):—The bird at Shoreham Airport (SxBR 1985) was last seen on 3 Jan. (MR).

169. **LAPWING** (*Vanellus vanellus*):—Prior to the cold weather in Feb., 7 sites noted 1000+ birds: Pevensy Levels 6000, Lower Adur Levels and Amberley Wild Brooks 3000, Chichester Hbr 2327, Newhaven Tidemills 2000, Climping 1270 and Chalvington 1000. Then between 6-12 Feb. there was a massive exodus but, unusually, no major diurnal movements were seen — several sites across the county saw 100-200 birds but no more. The departure was almost complete at many sites, e.g. Adur Levels; however, the regular estuary count was made on 8 Feb. before the main effect was visible, but even so the 16,073 seen in Jan. were down to 4360 by Feb. The return was noticed throughout the county on 6-10 Mar. with, for example 300 N over Combe Haven on 6th and many thousands N over Lewes Brooks on 7th.

Breeding records tumbled again showing how hard it is for the species to overcome farming intensification and severe winter and appalling summer weather. In the Chantonbury area just 5 pairs bred (28 in 1984, 9 in 1985), while on the Amberley Wild Brooks SSSI 23 bred (38 in 1984, 25 in 1985) and at Rye Hbr there were 22 pairs (60 in 1984 and 1985). At Rye it was thought no young survived to fledging.

Returning birds were seen on Lewes Brooks, Rye Hbr, Thorney and Adur Levels on 12-14 June with another increase at the end of the month. Numbers slowly increased and by the year end flocks were smaller than usual, e.g. 2700+ on Pevensy Levels, 2000 at Newhaven, 1584 at Chichester Hbr, 1330 at Ringmer, 1164 on Adur Levels and 1000 in the Arun Valley.

170. **KNOT** (*Calidris canutus*):—The estuary counts were:

County totals	1986			1987						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	200	81	267	20	23	189	2	223	277	98
Pagham Hbr	184	25	222	6	8	189	—	180	180	65
Pevensy Levels	16	55	40	—	10	—	2	40	90	30

The whole year was very poor, resulting in counts far below any since 1970, although about 650 and 700 were on Thorney briefly on 15 Jan. and 20 Nov. respectively. The peak count in Pagham Hbr was 115 on 26 Jan. Very few were seen elsewhere in the first winter period, with 10 on R. Adur on 12 Jan. the maximum reported. The spring passage E was very poor with only 113 in Apr. and May, the peak day being 65 E on 6 May. The last were 8 in Chichester Hbr on 24 May.

The return was slow from 29 July, with the first juvenile at Rye Hbr on 17 Aug. At Pett Pools the maximum was 15 on 17-18 Sept., but numbers were generally very low, as they were at the end of the year. Inland, there were singles at Chichester GP on 8 and 17 Mar. and at Bewl Water on 14 Sept.

171. SANDERLING (*C. alba*):—The estuary counts were:

County totals	1986											
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1987	1988
Chichester Hbr	752	232	415	166	420	268	273	158	154	152	154	152
Rye Hbr	291	1	165	161	364	206	113	8	34	24	24	24
Climping	100	68	150	3	55	140	2	38	24	24	24	24
Goring	150	70	30	NC	NC	NC	NC	NC	NC	NC	NC	NC

Again this was a disappointing year with a further decline in the numbers wintering after the good early 1980s. The large numbers which were formerly found between Bognor and Worthing appear to be falling and are not being detected by counts in Chichester Hbr as used to happen; the situation is complicated by the absence of counts from Goring, but irregular observations there late in the year revealed very few birds.

Spring passage revealed 270 E in Apr. and May with peaks of 44 on 2 May and 33 on 7th at Worthing. Inland, 1 was at Chichester GP on 18 May. Movements continued late with 15 at Rye Hbr on 4th and 50 in Chichester Hbr on 8 June. At Rye up to 8 hung on to 21st. Return was noted here and at Chichester Hbr on 12 July. Autumn peaks included 120 at Rye Hbr on 21 Aug and 374 at Chichester Hbr on 22 Sept.

175. LITTLE STINT (*C. minuta*):—Another quiet year, although the June records are unusual, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	—	—	2	4	7	23	37	15	—	—

Two were reported from Rye Hbr on 29 May, with singles there on 16-21st and 19 June. Also in June, one was seen at Waltham Brooks on 13-14th and another at Chichester GP on 14th. Up to 4 were present at Rye Hbr between 17-24 July with 2 at Sidlesham Ferry from 29th to 2 Aug. and one at Pett Pools from 30th to 3 Aug. In early Aug. singles were also seen at Shoreham on 1st and Pilsey on 9th, but none were then reported until 5 arrived at Sidlesham Ferry on 18th, with 2 there from 20-30th and 5 on 31st. Singles were seen at Rye Hbr on 23rd and Arlington Res. from 24-27th. At Pett Pools 6 on 31 Aug. had risen to 8 on 1 Sept. with up to 6 recorded there in early and late Sept. Elsewhere in Sept. a peak of 11 was counted at Pilsey and 1 at Arlington Res. on 7th, 3 in the Cuckmere on 10th and one was seen at Gatwick on 11th. 4 were recorded at Sidlesham Ferry on 17th and one on 27-28th, while 4 at Scotney Court GP on 28th may have come from Pett. In Oct. 4 were seen at Pilsey, 1 near Newhaven and 2 at Pett Pools on 5th, with 4 at Pett from 8-10th. Singles were seen at Sidlesham Ferry and Rye Hbr on 11 Oct. and lastly 2 at Pett Pools on 19th.

179. TEMMINCK'S STINT (*C. temminckii*):—1984:—The bird recorded at Sidlesham Ferry was present from 22 May, not 20 May as stated.

1986:—Two birds, both adults, were recorded during the year, one in spring and one in autumn. These were at Rye Hbr on 2 May (CB, PP, BJY) and Chichester GP from 3-9 Sept. (CRJ *et al.*), the latter being appreciated by many observers during its stay.

180. PECTORAL SANDPIPER (*C. melanotos*):—A juvenile was present at Rye Hbr very briefly on 18 Sept. (PP, BJY). This species has now been recorded in the county in all but 2 of the last 15 years.

182. CURLEW SANDPIPER (*C. ferruginea*):—A poor year, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	—	—	1	1	5	14	13	3	—	—

One was seen at the Crumbles on 23 May, with one at Rye Hbr from 23-25 June. In July singles were present at Rye Hbr on 12th, 16th and 19-20th, with one at Ferring on 20th and one at Pett Pools on 26-27th. Few were seen in Aug., records being at Rye Hbr from 2-14th, with 1-3 between 25-30th, singles at Pett Pools on 1st, 2nd, 10th and 30th and at Shoreham on 27th and 6 at Sidlesham Ferry on 28th. Between 5-7 Sept. singles were seen at Church

Norton and in Chichester Hbr with 2 at Pett Pools. On 10th 2 were present at Sidlesham Ferry, one remaining to 17th, with singles at Rye Hbr on 12th and Pett Pools on 15th. At the end of the month up to 3 were seen at Shoreham, one remaining to 1 Oct. and 2 at Cuckmere Haven. The last recorded was one in Chichester Hbr on 6-7 and 11 Oct.

183. PURPLE SANDPIPER (*C. maritima*):—The monthly peak counts were:

County totals	Jan.	Feb.	Mar.	Apr.	May	Aug.	Oct.	Nov.	Dec.
Glyne Gap	66	59	60	73	32	7	19	48	62
Newhaven	32	21	20	43	30	—	3	32	11
Littlehampton	28	27	28	27	—	—	12	2	32
Brighton Marina	3	7	6	—	—	—	3	4	4
Others	1	1	3	1	2	1	1	7	9

High wintering numbers were maintained with a distinct peak in Apr. when 43+ were at Glyne Gap on 6th. Here there were 30 on 4 May and still 7 on 16th, the last of the spring. One was on Langney Point in a gale on 26 Aug. but the earliest wintering birds were at Glyne Gap on 7 Oct. First arrivals at other sites were between 28 Oct. and 3 Nov. Late in the year, up to 3 were at Langney Point and Pagham Hbr and 4 at Pilsey when, unusually, birds were recorded regularly from Selsey Bill and Church Norton.

184. DUNLIN (*C. alpina*):—The estuary counts were:

County totals	1986												1987												1988											
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.															
Chichester Hbr	35666	16753	13314	372	23147	15622	24151	13807	20104	9052	—	—	—	—	—	—	—	—	—	—	—															
Pagham Hbr	26997	11478	8392	160	22680	12537	19361	10671	16121	4513	—	—	—	—	—	—	—	—	—	—	—															
Adur	4775	2529	3900	111	411	2282	4031	1251	2601	3362	—	—	—	—	—	—	—	—	—	—	—															
Rye Hbr	1400	1250	820	31	14	378	497	982	1147	928	—	—	—	—	—	—	—	—	—	—	—															
Others	189	785	35	52	33	115	24	700	40	92	—	—	—	—	—	—	—	—	—	—	—															

Early in both 1986 (Feb.) and 1987 (Jan.) severe weather resulted in sharp decreases in numbers in the county, especially in Chichester and Pagham Hbrs. Rye Hbr continues to be favoured by a small influx under such conditions. Early in the year numbers were high, but relatively low late in the year. Up to 20 fed on the Willingdon Levels at Eastbourne and 40 on the Lewes Brooks.

Spring passage was light, just 364 E, mostly at Worthing with a peak of 156 on 2 May; few were seen after mid-May. Returning migrants were noted at Rye Hbr and Waltham Brooks on 3 July, Barcombe Res. on 5th and in Chichester Hbr on 6th. At Rye the first juvenile was seen on 8th. A rapid build-up took place in the fourth week of July when 1800 were in Chichester Hbr, 190 in Pagham Hbr and 120 in Rye Hbr. On 9 July one with a white head was at Sidlesham Ferry.

188. RUFF (*Philomachus pugnax*):—The approximate monthly totals were:

County totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pagham Hbr	50	23	47	15	6	14	39	64	122	89	37	30
Rye Hbr	12	23	42	15	4	10	21	48	120	71	—	—
Others	6	—	1	—	1	3	10	11	1	—	—	—

Numbers were generally low apart from a single count of 120 at Pagham Hbr on 31 Oct. In Jan. 30 were near Houghton Bridge but no other counts were received which might refer to the usual mid-Arun Valley flock. There was an unusual number of records in June, all of males — 4 at Pagham Hbr (20-29th) and singles at Lurgashall Mill Pond (21st) and Rye Hbr (19th).

189. JACK SNIFE (*Lymnocyrtes minimus*):—Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	Sept.	Oct.	Nov.	Dec.
7	8	12	8	1	7	7	7

Despite severe weather in Feb. few were reported. Early in the year only Combe Haven with up to 7 had more than 2 birds. The last were noted in Apr., on Adur Levels on 4th, Bewl Water on 12th and Combe Haven on 27th. Only 1 returned in Sept., to Combe Haven on 25th, where up to 5 were seen in subsequent months. One appeared at Gatwick on 12 Oct. and remained to the end of the year.

190. **SNIFE** (*Gallinago gallinago*):—Despite severe weather in most of Feb. and early Mar., only small numbers were seen in gardens and other unusual locations. Numbers were generally moderate, although birds were widespread. Peak counts included 400+ on Adur Levels, 320 in Combe Haven, 250+ on Pevensy Levels, 240 around Chichester Hbr and 200 at Newhaven Tidemills. There were few signs of migration, but one was on the Downs near Lewes on 6 Apr.

Very few breeding birds were reported: 4-5 in Combe Haven where almost no drumming or 'chipping' was heard and success was believed to be nil. A pair laid eggs at Bewl Water but no display was noted. Otherwise single pairs were at Pulborough Brooks and Horse Eye Level. Late in the year few birds were recorded with maxima of 153 at Rye Hbr, 150 on Pevensy Levels, 130 at Combe Haven and 120 at Pulborough Brooks. A small movement was seen at Pett Pools and Weir Wood Res. in the second half of Sept.

194. **WOODCOCK** (*Scolopax rusticicola*):—Only 13 birds were reported in Jan., but as the cold spell took hold from mid-Feb. many more were seen. Then 49 were seen at 26 sites, while 57 were at 27 sites in the first half of Mar. On 1 Mar. they were widespread in towns and gardens, e.g. Hastings, Eastbourne, Hassocks, West Kingston and Findon, although 9 were also in the Lullington/Friston area. Other significant concentrations included 5 in Ashcombe Bottom in Jan. In Feb. 7 were on Lychpole Hill and 5 at Balcombe, while in Mar. 6 were at Bailiffs' Court, Climping, 5 at Icklesham and 3 at five other sites.

During a good breeding season, 103 roding birds were reported from 45 areas; this confirms the impression on the commons of NW Sussex that the species was more numerous. The largest numbers were at least 15 in central Ashdown Forest, 6 in St Leonards Forest, 5 at Binstead Warren and Slindon and 4 at Ambersham, Hindleap Warren, Blackdown and Burton Mill Pond. Three 10-day-old chicks were found wandering in the centre of Balcombe accompanied by an adult. Only a handful were seen after the breeding season and those, clearly migrants, were in Worthing on 4 Oct., on Hollingbury GC on 14 Nov. and 2 at Beachy Head on 15 Nov.

195. **BLACK-TAILED GODWIT** (*Limosa limosa*):—The estuary counts were:

County totals	1986				1987					
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	77	207	278	596	445	551	217	119	190	178
Pagham Hbr	26	190	205	551	393	521	189	117	93	146
Pagham Hbr (night)*	51	17	73	45	52	30	28	2	97	32

Not a single bird was seen on estuary counts away from these two harbours. Wintering numbers were extremely low; this species always moves away in severe weather and the Jan. 1986 figure was well below the last low of 120 in the cold spell of Feb. 1979.

A small movement in Mar. brought singles to Rye, Waltham Brooks and Newhaven on 13th, 3 E at Brighton Marina on 16th and 7 S at Arundel WFT on 22nd. A late Apr. build-up of 215 adults in Chidham Creek, Chichester was followed by 15 seen flying E at Worthing and Brighton Marina before turning inland over Birling Gap. The last obvious spring migrants were on 1 June. The summering flock at Siddlesham Ferry peaked at 76 on 17 June. Returning birds appeared at Rye on 29 June, Waltham Brooks on 12 July, Chichester Hbr on 13th (where numbers built up from 4 to 98 by 22nd and 128 by 9 Aug.), Pett Pools and Lewes Brooks on 19th and Arundel WFT on 23rd. The first juvenile at Rye was on 19 Aug. and 1 was at Bewl Water on 31st. A few scattered other individuals were seen including 4 W over Beachy Head on 30 Aug.

196. **BAR-TAILED GODWIT** (*L. lapponica*):—The estuary counts were:

County totals	1986				1987					
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	232	694	722	657	675	76	907	1054	393	52
Pagham Hbr	207	687	708	653	670	75	900	985	373	1
Pagham Hbr	22	7	12	4	5	1	7	21	20	45

As usual, very few were seen at other sites. Numbers were generally rather below

average. The Jan. total was low, possibly because birds left the county, as 10 W past Seisey Bill on 10th may indicate. The Nov. low must have been due to the Chichester Hbr flock going missing. Spring passage was again moderate with 655 E in Apr. and 2160 E in May. The main movements were concentrated a week later than usual, with 650 at Worthing on 1 May and 581 on 6th. There were 445 past Brighton Marina on 2nd.

The Chichester Hbr summering flock was 110 up to 8 June and 52 on 22nd. Numbers here rapidly rose from 80 on 18 July to 400 on 24 Aug. Singles were at Pett Pools on 14 and 31 July. During Dec. up to 4 males in summer plumage were roosting on Pilsley Island.

198. **WHIMBREL** (*Numenius phaeopus*):—One was in Pagham Hbr on 9 Jan., but the next there was on 23-28 Mar.; other Mar. birds were 1 E at Brighton Marina on 17th and 1 E at Climping on 26th. After 1 on 4 Apr. at Barcombe Res., the start of the main passage was seen generally on 10-20 Apr. Passage continued to 25 May, with a total of 367 passing E by the main seawatching sites. The roost at Rye Hbr was spectacular and showed a rapid increase from 48 on 21 Apr. to 161 on 26th. It peaked at 299 on 2 May before dropping sharply to 12 by 12th. Other concentrations seen on the ground were 75 at Pagham Hbr on 5 May, and on 10th 18 at North Stoke and 29 in Chichester Hbr. A snatch of song was heard from one passing over Ringmer on 22nd.

At Rye up to 2 were seen in June and at South Chidham one was present from 13 June to 13 July. Return migration was seen at the Cuckmere on 7 July, Beeding Hill on 8th, Rye Hbr on 12th, Pett Pools on 13th and Binstead on 14th. Autumn numbers are always relatively low, peaks being of 36 off Pett Level on 5 Aug., 34 in Chichester Hbr on 24 July, 30 at Rye Hbr on 23 Aug., 10 at Pagham Hbr on 9 Aug. and 5 on New Salts Farm, Shoreham on 29th. Very few were seen after 27 Sept., just 3 singles between 9-11 Oct. and singles at Littlehampton on 4 Nov. and in Chichester Hbr on 18 Nov. Two were in Pagham Hbr on 23 Dec. with 1 on 27th.

199. **CURLEW** (*N. arquata*):—The estuary counts were:

County totals	1986				1987					
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr	1768	1272	828	1605	1741	1270	1895	1210	786	1691
Pagham Hbr	980	1003	395	1741	1270	1522	837	500	834	635
Pett Level	212	NC	20	150	55	53	94	8	356	70
Rye Hbr	32	17	51	1	22	51	80	10	6	36
Rye Hbr (night)*	890	100	450	570	600	600+	800+	NC	NC	NC

*Nocturnal roost which includes birds from Pett Level and Romney Marsh, excluded from county totals. Numbers were fairly typical with a peak in the autumn. The total fighting into Rye Hbr at dusk shows how many are feeding on the Levels, particularly in Kent. The only other large count of an inland wintering flock was at North Stoke, where it peaked at 90 in Jan. and 70 in Feb. Few were seen flying along the coast, but in early May 27 were on Norman's Bay Marsh and 20 were on Amberley Wildbrooks.

One pair behaved as though breeding in Ashdown Forest. Non-breeding birds were seen in small numbers throughout June and July; at Chichester Hbr numbers built up from 150 on 7 June to 300 by 23rd and 1000 by 6 July. By 7th the Rye Hbr flock reached 290.

201. **SPOTTED REDSHANK** (*Tringa erythropus*):—Approximate monthly totals were:

County totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chichester Hbr	5	3	3	2	—	8	3	34	31	8	3	5
Pagham Hbr	1	1	1	1	—	6	2	4	14	1	1	4
Rye Hbr	—	—	—	—	—	1	—	5	5	3	—	1

Wintering birds were again restricted to the two western harbours and Rye Hbr was used as a passage area for its best ever year. In spring 3 flew W at Worthing beach on 22 Apr. The June movement took place between 12th and 20th. Only in Aug. and Sept. were birds noted away from the three main areas; all were singles apart from parties of 3 and 5 at Pett Pools and 2 in the Cuckmere on 27 Aug. The peak at Rye Hbr was 14 on 19 Aug. and a similar number was in Chichester Hbr on 20 Sept.

202. REDSHANK (*T. totanus*):—The estuary counts were:

	1986											
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1987	1988
Country totals	2376	1743	1336	1378	1717	1878	1521	987	1628	1233	128	153
Chichester Hbr	1527	1122	832	830	1171	1363	1522	489	1052	746	132	141
Pagham Hbr	495	323	339	285	268	227	326	207	340	273	156	161
Rye Hbr	63	67	67	122	116	136	110	71	31	57	168	156
R. Adur	148	160	29	69	82	77	129	152	132	111	187	227

The autumn numbers were well below 'normal' levels and, despite rising to a Dec. maximum, remained low. In many areas, including Newhaven Tidemills and the Cuckmere, there was a sudden decrease as severe weather struck between mid-Feb. and early Mar. On the Lewes Brooks the Mar. peak was 23. Few are normally seen migrating, but 42 W at Worthing on 6 May was exceptional.

A total of 50 definitely territorial pairs were reported, including c. 19 at Rye Hbr*, 8 on Amberley Wildbrooks SSSI*, 6 at West Wittering, 4 on East Guldeford Level, 3 on the Rother Levels, and 2 each on Pulborough Brooks*, Nutbourne Marshes LNR and Arundel WFT*. A pair at Church Farm, Lymminster was unusual. At least 5 other pairs were present elsewhere, but did not attempt to breed. (The four sites indicated by * had 48-49 pairs in 1984, 42 pairs in 1985 but just 31 pairs in 1986, a decrease of 26% on 1985.)

Autumn maxima at other sites included 34 on Lewes Brooks in Aug., 70 at Newhaven Tidemills in July and 53 at Pett in Sept. The creamy individual on the R. Adur remained until 15 Feb.

204. GREENSHANK (*T. nebularia*):—Approximate monthly totals were:

	1986											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Country totals	2	2	3	2	9	10	63	217	201	64	13	3
Chichester Hbr	2	2	2	1	4	42	123	130	42	11	2	—
Pagham Hbr	—	—	1	—	2	3	2	10	12	6	1	—
Rye Hbr	—	—	—	—	3	3	2	9	14	6	—	—

Wintering numbers were typically small but the spring passage was virtually absent. However, the Aug. and Sept. peak was large with a strong movement during the periods 15-25 Aug. and again in early Sept. Up to 13 were at Darwell Res. on 22 Aug. in an exceptional autumn there; substantial peaks at other sites were 11 at Weir Wood Res. on 19 Aug., 9 on R. Adur on 3 Sept., and 8 at Bewl Water on 24 Aug. On 26 Oct. 10 circled high over Chichester Hbr at dusk before heading SW out to sea.

206. LESSER YELLOWLEGS (*T. flavipes*):—1985:—One at Sidlesham Ferry on 27 Apr. (JEB, PDW) has been accepted by British Birds.

208. GREEN SANDPIPER (*T. ochropus*):—A slight increase in records over the last two years, the approximate monthly totals being:

	1986											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Country totals	9	3	13	13	1	16	36	110	33	21	10	8

In the early part of the year 2 were seen at Chichester GP with widespread singles elsewhere; there were 2 at Pett Pools on 14 Jan., 2 at Arundel on 14 Feb. and 5 at Chichester GP from 23-30 Mar., 4 remaining to 20 Apr. The only May record was one at Combe Haven on 1st. The first returning bird was at Sidlesham Ferry from 9 June with singles on the Lewes Brooks on 14th and at Waltham Brooks on 16th. Autumn peaks were 6 at Waltham Brooks on 16 July, 4 at Gatwick on 31st, 10 at Darwell Res. on 12 Aug., 5 at Newells, West Ashling and 11 at Southeast on 17th, 6 at Arundel WFT and 6 at Thorney Island on 23rd and 6 at Chichester GP and 6 at Rye Hbr on 24th. In Sept. 7 were present at Chichester GP from 5-11th and 6 at Darwell Res. on 14th. Six remained at the former site in Oct. and 3 into Dec. while at the latter 4 were present in Nov. At the end of the year scattered singles remained at 6 other localities.

The autumn (July-Oct.) and annual totals for the last 10 years are shown below, with 3-year moving averages:

	1977-1988											
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
July-Oct.	128	153	132	141	159	172	166	110	180	—	—	—
Moving av.	124	138	156	152	161	157	166	149	152	—	—	—
Annual	168	238	181	262	207	236	254	236	200	240	—	—
Moving av.	187	196	227	217	235	232	242	230	225	—	—	—

The increase in records evident from the mid 1970s (see SxBR 33:29) has levelled out during the 1980s while now the trend, shown by the moving average, may suggest a slight decline.

209. WOOD SANDPIPER (*T. glareola*):—Scarce in spring, the species was more widespread in autumn, monthly totals being:

	1986											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Country totals	—	—	—	1	—	—	2	14	7	—	—	—

For the third successive spring the species was seen at Arundel WFT, the only spring record coming from there on 2 May. In autumn one appeared at Sidlesham Ferry on 1 July, with 1 at Weir Wood Res. from 13-22nd. One at Waltham Brooks on 9 Aug. moved to Arundel WFT from 9-11th, with 1 at Cuckmere Haven on 12th. Singles were seen at Newells (West Ashling), Waltham Brooks and Pett Pools on 17th with 6 present at the last site on 19th. Other Aug. records were of singles at Arundel WFT on 19th and Chichester GP and Lewes Brooks on 23rd. In Sept. single individuals were reported from Pagham Hbr on 7th, Rye Hbr from 9-12th, Combe Haven on 12th and Pett Pools on 15th, with 3 there on 19th. The last of the year was 1 at Sidlesham Ferry from 27 Sept. to 2 Oct.

211. COMMON SANDPIPER (*Actitis hypoleucos*):—Record numbers were noted in Aug. in an otherwise unexceptional year, the approximate monthly totals being:

	1986											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Country totals	1	1	1	15	47	5	120	380	50	9	1	2

Wintering individuals were seen at Piddinghoe on 20 Jan. and at Thorney Deeps on 3 dates in Feb.-Mar. The first migrants were seen on 2 Apr., at Chichester GP and Arundel WFT, but none were then recorded before 20th when another was at Arundel. Most spring records were of widely scattered singles, with peak counts of 4 at Charleston reedbed on 27 Apr., 5 on the Lewes Brooks and 5 at Bewl Water on 3 May and 5 at Barcombe Res. on 5th, when 1 was seen at Falmer Pond. In mid-June singles were seen at Shillinglee Mill Pond on 13th, Sidlesham Ferry on 15th and Rye Hbr on 21st, while 2 at Sidlesham on 29th were certainly returning migrants.

Autumn passage was heavy with peak July counts of 10 in Chichester Hbr on 12th and 16 there on 22nd, while 10 were seen on R. Ouse on 20th and 11 at Barcombe Res. on 29th. In Aug. 11 were recorded on the Lewes Brooks and 10 at Weir Wood Res. on 11th, with 10 at Darwell Res. on 12th and 13 on R. Arun and 16 at Brighton Marina on 19th. On 22nd, 22 were counted at Darwell Res., with 13 at Langney Point and 35 at Bewl Water on 23rd and 28 at Arlington Res. on 24th. Numbers soon dropped off and the highest Sept. counts were of 5 at Barcombe Res. on 2nd and 5th when 5 were also seen at Sidlesham Ferry. Two were seen at Rye Hbr on 7 Oct., one remaining to 11th, while single wintering individuals were recorded irregularly at Thorney in Nov.-Dec. and on Pevensy Levels on 7 Dec.

213. TURNSTONE (*Arenaria interpres*):—The estuary counts were:

	1986											
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1987	1988
Country totals	894	838	802	707	1034	1008	733	458	580	617	—	—
Pagham Hbr	348	269	323	9	265	298	268	145	175	246	—	—
Glyne Gap	244	335	140	200	250	250	109	66	128	147	—	—
Chichester Hbr	74	101	74	363	379	156	126	82	100	50	—	—
Norman's Bay	126	125	112	34	71	99	80	137	159	164	—	—
Pett Level	24	NC	1	101	58	202	148	—	8	—	—	—

Numbers throughout the year were typical. Notable Apr. and early May peaks were 250 at Glyne Gap, 130 at Pett Level and 122 in Chichester Hbr. At Rye Hbr the peak was 310 on 14 May; birds were very excited on 18th and only 20 were left on 22nd. Only 75 flew E in Apr. and May past the seawatch sites, with the peak of 29 on 2 May.

Summering birds in Chichester Hbr totalled 68 and at Rye Hbr 25. A sharp increase took place in Chichester Hbr from 88 on 20 July to 286 on 24th; a small rise was noted at Rye Hbr also on 24 July. Early autumn peaks were 340 at Glyne Gap on 2 Oct., 250 at Rye Hbr in mid-Aug. and 200 at Pett Level on 14 Aug.

216. **GREY PHALAROPE** (*Phalaropus fulicarius*):—One was found swimming inside the entrance to Brighton Marina during gales on 29 Jan. (NAGL). This is the 9th consecutive year this species has been recorded in Sussex, but just one is the lowest total since 1978.

217. **POMARINE SKUA** (*Stercorarius pomarinus*):—An immature was recorded at Selsey Bill on 10 Jan. (BFF, CEM, OM).

Easterly spring passage totals at the main sea-watching localities were: Selsey Bill 24 (peak 22 on 4 May), Worthing 41 (peak 20 on 3 May), Brighton Marina 25 (peak 17 on 2 May), Seaford 26 (peak 19 on 4 May) and Beachy Head 70 (peaks of 39 on 2 May and 20 on 4th). All records were in May and the minimum total for the month was 90 E.

In autumn there was an immature E at Beachy Head on 27 Oct. (JPS) and 2 singles W at Worthing on 5 Nov. (RJS).

218. **ARCTIC SKUA** (*S. parasiticus*):—1985:—One flew W at Langney Point on 24 Dec. (RJF, MK).

1986:—One was recorded at Church Norton on 28 Jan. (TJE). Spring passage occurred from 22 Mar. with birds recorded flying E as follows: Selsey Bill 115, Worthing 208, Brighton Marina 44, Seaford 72 and Beachy Head 105. Analysis of these records indicates that a minimum of 398 birds were involved, of which 2 were in Mar., 103 in Apr. and 293 in May. This is the highest spring total yet to be recorded in the county. The peak passage occurred on 4 May when at least 48 were seen.

Records for June and July indicate that up to 3 birds were summering in the Channel. Autumn passage was again poor with some 41 recorded at coastal localities between 14 Aug. and 10 Nov.

220. **GREAT SKUA** (*S. skua*):—Record numbers were recorded on spring passage. Between 18 Mar. and 24 May birds flew E as follows: Selsey Bill 18, Worthing 36, Brighton Marina 5 and Beachy Head 23. Analysis of these records indicates that a minimum of 77 birds were involved, of which 1 was in Mar., 61 in Apr. and 15 in May. Westerly movements totalled 34 birds and included an exceptional 19 at Selsey Bill on 4 May (CRJ, P.J.), and a late individual off Brighton Marina on 15 June (CBT).

In autumn only 4 were reported from coastal localities between 10 Sept. and 28 Oct.

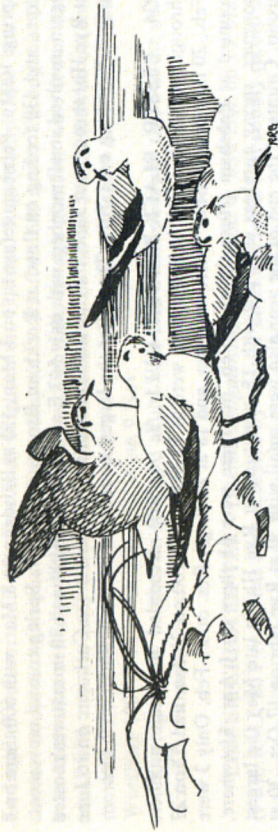
222. **MEDITERRANEAN GULL** (*Larus melanocephalus*):—Another good year was recorded with at least 48, and possibly as many as 70, different individuals seen. These comprised 20 adults, 3 sub-adults and 25 first-year birds and the minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5	6	19	21	4	7	1	1	2	2	2

The pattern of records is similar to those of the past few years with scattered sightings during the winter and autumn but a marked increase in observations during the spring. Many of these spring records were of birds passing or resting at the coastal sites in East Sussex and included small groups of immatures with 4 at Birling Gap on 6 May and 7 at Rye on 12 May. Several birds remained at sites for a few days, particularly at Rye, but as in recent years only a few stayed faithful to one site for a longer period. Examples included an adult at Newhaven between 9 Feb. and 19 Apr. and an adult in the Chichester-Pagham area between 13 Nov. and 24 Dec.

Although 2 pairs were noted during the breeding season there was no evidence of breeding.

The only record away from the coast was an adult at Greattham Bridge on 8 Feb.



225. **LITTLE GULL** (*L. minutus*):—The distribution of records reveals this species to be a scarce winter and summer visitor but a regular passage migrant. The records partly reflect the interest in coastal movements during the spring and the minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	—	3	61	90	6	—	11	9	17	6	4

The January records were all from East Sussex: immatures at Newhaven, Rye and Pett, and 2 adults feeding in Brighton Marina on 29th. The first spring migrant was also at Brighton Marina on 16 Mar. and thereafter many coastal sites recorded E passage with peaks on 20 and 23 Apr. and 2 May. The sea-watching logs on this last date noted 42 E at Beachy Head, 28 E at Seaford, 14 E at Brighton, 11 E at Worthing and 24 E at Selsey Bill. Away from the coast there were 5 adults at Chichester GP on 23 Apr., 3 immatures there between 8 and 10 May and up to 2 at Arlington Res. between 7 and 13 May. All five June records involved immatures, the latest at Littlehampton on 20th.

The protracted autumn passage, noted between 12 Aug. and 7 Dec., was small with the peak a mere 7 W at Worthing on 27 Oct. Of the 34 coastal records only 10 were from East Sussex; indeed, 'a poor year' was the comment in the warden's report at Rye Hbr. The remaining 13 observations were from 5 inland waters, the most noteworthy being 4 over Bewl Water on 12 Oct. and an adult and an imm. at Weir Wood Res. on 7 Dec. Finally 2 flew E at Worthing on 30 Dec.

228. **BLACK-HEADED GULL** (*L. ridibundus*):—There was no coordinated winter roost count but large numbers were noted at both coastal and inland sites. At Rye Hbr 40,000 roosted on 16 Mar., 6000 were noted at Pebsham on 8 Jan. with 7500 there on 3 Mar., and at Pagham 5000 were recorded on 21 Jan. At Bewl Water the roost of 8000 on 20 Jan. increased to a record 20,000 during cold weather on 7 Feb. and on 21 Feb. 1000 were noted at Ardingly Res. After the main departure of wintering gulls the spring coastal movements seen at Worthing were average with a total of 5488 E and a peak of 1211 E on 27 Apr.

A further increase in the size of the breeding colony was noted at Rye Hbr where nearly 1000 pairs nested. Likewise at Stakes Island in Chichester Hbr a record count of 1563 nests had good fledging success as only a few nests were lost to flooding. The colony at Scotney Court GP was not counted but at least 25 pairs occupied one of the islands. Observers at Bewl Water noted adults present, and possibly prospecting for breeding sites, throughout June.

The largest counts later in the year were 1750 near Shoreham on 7 Aug., 1200 on the Lewes Brooks on 11 Aug. and 1000 following a plough at Wepham Down on 7 Oct. The roost at Bewl Water was 8000 strong by 27 Dec. and 3000 were counted at Weir Wood Res. on 6 Dec.

Albino individuals were noted at Rye Hbr on 12 May and at Worthing on 16 May.

233. **COMMON GULL** (*L. canus*):—Over 1800 roosted at Bewl Water on 20 Jan. and 1000 were still there on 24 Feb. Noted as numerous at Rye Hbr during the winter with the maximum count of 10,000 roosting on 16 Mar. Other flocks were recorded in late winter and spring: 1000 at Pebsham refuse tip on 3 Mar., 450 at Balsdean on 8 Mar. with 600 there on 8 Apr., and 430 feeding on flood at Rackham Brooks on 26 Apr. Spring coastal movements again involved small numbers with only 543 E at Worthing. Although 30 immatures roosted at Rye Hbr throughout June, the first autumn adults were noted in the Cuckmere on 16 June and at Worthing on 1 July. Thereafter the largest count was 200 at Arundel on 2 Dec.

234. **LESSER BLACK-BACKED GULL** (*L. fuscus*):—Recorded in small numbers throughout the year. The largest counts were at Pagham with 100 on 21 Jan. and 52 on 27 Feb.; 20 flew N over Bewl Water on 3 Jan. and 18 at Ardingly Res. on 21 Feb. Only 3 were counted at Pebsham refuse tip on 3 Feb. but there were 61 there on 1 Apr. Elsewhere, however, spring numbers were low with 15 immatures at Rye Hbr in late May the largest group. Counts at the end of the year also were small with 30 at Rye Hbr on 17 Oct., 30 at Weir Wood Res. on 3 Nov. and 43 there on 20 Dec., 26 in Chichester Hbr on 14 Dec. and finally 30 flying W over Bewl Water on 27 Dec.

235. **HERRING GULL** (*L. argentatus*):—Winter counts were few and involved only small numbers except at Pebsham refuse tip where the peak of 5000 was on 17 Feb. with more than 2000 still there on 7 Apr. Nesting was confirmed at Rye Hbr (15 pairs), the Cliff Quarry (7 pairs) and on roof tops in St Leonards, Shoreham and Worthing.

Once again there were fewer records than in the previous year of the yellow-legged race (*L. a. michahellis*) on the Selsey peninsula and in the Adur Valley. However, 15 at Pebsham refuse tip on 9 Feb. and 17 in the Cuckmere Haven on 23 Mar. were unusual. The minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16	18	1	7	9	22	12	3	3	—	—

A single yellow-legged adult showing the characteristics of the Scandinavian race (*L. a. omissus*) was recorded at Brighton Marina on 16 Sept. (NAGL).

237. **GLAUCOUS GULL** (*L. hyperboreus*):—1985:—A first-year on Shoreham Airport on 26 Dec.

1986:—Yet another good year, the records suggesting at least 14 and possibly 17 individuals were involved. The table of approximate monthly totals shows, as in 1985, that most records were early in the year:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	4	4	4	1	—	—	1	1	1	1	2

The scale of duplication is unclear but the records received from Rye, Combe Haven and the Crumbles indicate that at least 3 first-year, a sub-adult and 2 adults were present between 4 Jan. and 15 Apr.; in West Sussex observations suggest possibly 3 adults and a second-winter were seen between Arundel, Littlehampton and the Selsey peninsula.

During the spring an adult flew W at Worthing on 20 Apr. and an immature was seen at Seaford on 4 May. The only records at the end of the year were in West Sussex with an adult noted between the Selsey peninsula and Chichester Hbr from 8 Aug. to 10 Dec. and a first-year in Chichester Hbr on 3 Dec.

A gull showing characteristics of a Glaucous × Herring hybrid was recorded at Fairlight Glen on 31 Mar. (MJS-H).

238. **GREAT BLACK-BACKED GULL** (*L. marinus*):—The largest flocks in the first part of the year were 800 at Pebsham refuse tip on 8 Jan., 300 at Willingdon Level on 5 Jan. and 240 at Shoreham Airport on 3 Jan. During the summer 150 immatures were noted in Chichester Hbr and the roost at Rye Hbr held 200 birds which increased to 350 during September. Peak counts late in the year were 110 in the Adur Valley on 7 Nov. and 400 in Chichester Hbr on 16 Dec.

This species is seldom seen in large numbers far from the coast and small numbers were noted at several inland reservoirs but the 71 at Darwell on 12 Jan. was exceptional.

240. **KITTIWAKE** (*Rissa tridactyla*):—At Rye Hbr 80 regularly followed incoming trawlers during January and the only other noteworthy winter record was of 151 E at Worthing on 27 Feb. Although noted at all sea-watching stations during the spring there was no large movement until 156 flew E at Brighton on 19 June. Regrettably there was no summer count at the Newhaven breeding colony (cf. *SxBR* 1985, 689 nests). Throughout the year Kittiwakes rested at Brighton Marina at high tide, though numbers were fewer than usual with most in early autumn and the maximum of 69 on 29 Sept. Likewise autumn movements were smaller than in most years with peaks of 94 E at Brighton on 20 July and at Worthing 100 W on 27 Oct. and 55 W on 9 Nov.

During stormy weather on 31 July 3 adults were seen over Lewes and this was the only record far from the coast.

LESSER CRESTED TERN (*Sterna bengalensis*):—An adult at Rye Hbr on 13 May (PFB, KMJ, BJJ *et al.*) has been accepted by *British Birds* and is the first county record of this orange-billed tern from the Mediterranean and North Africa.

245. **SANDWICH TERN** (*Sterna sandvicensis*):—First recorded on 16 Mar. at Seaford. Easterly passage totals at the main localities were: Selsey Bill 2033, Worthing 4202, Brighton Marina 1104 and Seaford 1055. A minimum county total of 4305 birds was involved, of which 19 were in Mar., 1940 in Apr. and 2346 in May.

At Chichester Hbr 12 pairs nested but no young were raised. In contrast successful breeding was recorded at Rye Hbr for the first time. A maximum of 40 pairs were thought to have nested, but the exact number of chicks raised was obscured by incoming juveniles in July.

Coastal passage in autumn was very light but there were 60 at Pagham Hbr on 12 Aug. There were 5 S over Arundel on 2 Oct. and the last of the year was one at Rye Hbr on 8th.

246. **ROSEATE TERN** (*S. dougallii*):—Single birds flew E at Seaford on 20 Apr. (GG, SL, AW) and at Selsey Bill on 3 May (CRJ, PJ *et al.*). At Worthing there were 2 E on 17 May (JAN) and 1 E on 20th (DIS, RJS).

At Rye Hbr singles were reported on 13, 15 and 29 May and on 7 and 17 June (BJJ *et al.*).

247. **COMMON TERN** (*S. hirundo*):—In Chichester Hbr 81 pairs nested but only 27 chicks were raised to the flying stage due to flooding by high tides in June and July. At Rye Hbr 65 pairs bred and 70-80 young were fledged. The number of pairs nesting on the Society's rafts at Chichester GP was not recorded but it was estimated that at least 30 chicks were raised. At Pagham Hbr 1-2 pairs bred successfully.

A very late bird was recorded at Bewl Water from 13-26 Nov. (PCB, AHL).

248. **ARCTIC TERN** (*S. paradisaea*):—Single birds were seen at Selsey Bill on 3 May, at Chichester GP on 11 May and at Rye Hbr on 2 June. There were 4 at Bewl Water on 27 Apr. In autumn a total of 4 birds were reported between 28 Aug. and 20 Sept.

247/248. **COMMON/ARCTIC TERN** (*S. hirundo/paradisaea*):—First recorded on 9 Apr. at Worthing. Easterly passage totals at the main localities were: Selsey Bill 2865 (peak 537 on 5 May), Worthing 8191 (peak 1745 on 4 May), Brighton Marina 2316 (peak 1087 on 5 May) and Seaford 6243 (peak 1865 on 5 May). Analysis of these records indicates that a minimum of 9286 birds was involved, of which 1272 were in Apr., 7983 in May and 31 in June.

Autumn passage at Worthing in Aug.-Sept. totalled 135 E 172 W.

250. **SOOTY TERN** (*S. fuscata*):—1984:—An adult at Rye Hbr on 9 July (PP, BJJ) has been accepted by *British Birds* and is the second for the county.

251. **LITTLE TERN** (*S. albigrons*).—First recorded on 15 Apr. at Worthing and Brighton Marina. Easterly passage totals at the main localities were: Selsey Bill 447, Worthing 637, Brighton Marina 85 and Seaford 139. Analysis of these records indicates that a minimum of 704 birds was involved, with peak passage on 2 May.

At Rye Hbr 70 pairs nested but only 5 chicks were raised to the flying stage due to poor weather and predation by foxes. In Chichester Hbr 7 pairs were flooded out by high tides, but 2 pairs may have subsequently nested. At Pagham Hbr 5 pairs attempted to breed, of which 2 were successful.

In Aug. 220 were seen in Chichester Hbr on 10th, falling to 80 on 23rd. The last of the year was one at Portslade from 2-6 Oct.

253. **BLACK TERN** (*Chlidonias niger*).—The first recorded in spring were 2 E at Selsey Bill on 16 Apr. and one at the Crumbles on 20th. Easterly passage totals at the main coastal localities were: Selsey Bill 27, Worthing 40, Brighton Marina 12, Seaford 14 and Beachy Head 19. Analysis of these records indicates that a minimum of 53 birds was involved, of which 4 were in Apr. and 49 in May. The peak movement occurred on 4 May when there were also 2 at Arlington Res. and one at Weir Wood Res. There was 1 E at Brighton Marina on 21 June and one was seen in Chichester Hbr on 22nd.

Between 4 Aug. and 23 Sept. birds were reported from 18 localities. The peak county totals were 40 on 26-27 Aug. and 26 on 2 Sept. A very late bird was recorded at Chichester Hbr from 8-16 Nov. (BDJ, PJ, RJSe et al.).

254. **WHITE-WINGED BLACK TERN** (*C. leucopterus*).—An adult E at Brighton Marina on 21 June (CBr) has been accepted by *British Birds*.

255. **GUILLEMOT** (*Uria aalge*).—More numerous than Razorbill and reported from various coastal localities as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Dead	—	1	—	—	—	—	—	—	—	—	—	—
Oiled	2	1	9	—	—	—	—	—	—	—	—	—
Dead & oiled	1	3	3	—	—	—	—	—	—	—	—	—
Others	90	11	6	2	1	—	2	—	—	2	1	—

257. **RAZORBILL** (*Alca torda*).—Few records received; reported from various coastal localities as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Jan. 22	1	—	—	5	25	2	—	—	—	—	—	—

There were no reports of dead or oiled birds.

260. **LITTLE AUK** (*Alle alle*).—All records were from early Nov. Single birds were seen at Church Norton on 2-3rd (ASC, FAMH, JLH) and at Selsey Bill on 5th (BJ, CMJ). There were 2 W at Worthing on 3rd (BRC, JAN) and on 4th an exhausted bird was picked up at Winchelsea Beach (BJY). This individual was fed in captivity but it died several days later.

261. **PUFFIN** (*Fratercula arctica*).—1985:—There were 6 E at Beachy Head on 6 May (TWP et al.).

1986:—One flew E at Beachy Head on 7 May (SK, TWP).

AUK SPECIES:—Observations at the main sea-watching localities were as follows:

Direction of movement	Jan-Feb.		Mar-May		June-July		Aug-Oct.		Nov-Dec.	
	E	W	E	W	E	W	E	W	E	W
Selsey Bill	—	—	36	44	—	—	—	—	—	—
Worthing	119	255	111	91	2	2	1	9	22	—
Beachy Head	—	—	350	—	—	—	—	—	—	—

The peak movements occurred on 19 Jan. when there were 737 E at Brighton Marina, on 21 Jan. when there were 153 W at Worthing, and on 4 May when 175 flew E at Beachy Head.

Cat. C. RING-NECKED PARAKEET (*Pittacula krameri*):—Once again most records were received from Hollingbury Woods, Brighton where up to 9 birds were present throughout the year. Elsewhere, 1-2 birds were reported from 6 widely scattered localities.

264. **STOCK DOVE** (*Columba oenas*):—During the early part of the year flocks of 40 or more were reported from 7 localities. The peak count was at Weir Wood Res. where up to 75 were present. Few breeding records were received, the only systematic counts being 8 pairs in 280 ha at Hollingbury Woods, 5 pairs in 200 ha in Ashdown Forest and 3 pairs in 60 ha at West Chiltington. In the latter part of the year concentrations of 40 or more birds were reported from 5 localities. The peak count was at Telscombe where 120 were seen on 10 Dec.

265. **WOOD PIGEON** (*C. palumbus*):—During Feb. there were reports of flocks of 200 or more from 6 localities. A large movement was recorded on 9th with 1500-2000 N at Pagham Hbr. On 2 Mar. there were 1750 NW from the sea at Shoreham and on 16 Apr. 1000+ were seen at Stanmer.

Few autumn movements were reported although on 2 Nov. there were 500 W at Bewl Water, 900 W at Hurst Green and 500 at Beachy Head. A flock of 1700 was recorded at Cissbury on 26 Dec.

266. **COLLARED DOVE** (*Sireptopelia decaocto*):—During the early part of the year up to 400 were recorded feeding on grain at Southwick and 100 were seen at Rotherfield. At Brighton Marina there were 2 N on 15 Mar. and at Selsey Bill one flew in off the sea on 19 Apr. Few reports were received for the breeding season or for the latter part of the year. The only large concentration recorded was at Southwick where 180 were seen on 20 Oct.

267. **TURTLE DOVE** (*S. turtur*):—First recorded at Brighton on 26 Apr. and from a further 3 localities on 30th. Few breeding records were received, the only systematic counts being 6 pairs in 50 ha at Finches Wood, Nuthurst, 1 pair in 200 ha at Ashdown Forest and 1 pair in 60ha at West Chiltington. Autumn passage was once again light except at Rye Hbr where the peak count was 100+ on 21 Aug.

271. **CUCKOO** (*Cuculus canorus*):—Spring arrival was late with singles at Combe Haven on 16 Apr. and at Burgess Hill on 17th and 3 at Bewl Water on 18th. Most observers reported their first birds between 24th and 26th but arrival continued throughout May.

A juvenile was fed by a Duncock at Thorney Island in early July and the first fledged youngster was recorded at Cuckmere Haven on 23 June.

The last for the year were 4 at Shoreham on 26 Sept. and singles at Worthing on 6 Oct. and Brighton from 3rd to 8th.

274. **BARN OWL** (*Tyto alba*):—Records are tabulated as follows:

Year	Breeding Season			Breeding Success			
	Known pairs	Probable pairs	Birds present	Total sites	Young raised	No. pairs successful	Winter birds
1985	9	8	19	36	11	5	21
1986	9	11	18	38	6	3	17

The unfortunate decline in all respects reported last year was barely arrested and the number of young reared dropped drastically. Another severe, lengthy winter may have contributed to the poor results. Although coverage was widespread geographically, observer coverage fell slightly, with few follow-ups at sites where birds were seen regularly up to end-March. This applied particularly to the Arun Valley and Selsey peninsula areas. There was one road fatality and another bird picked up as dead was successfully tended by FWD and MAD and later released. The three proven sites that produced young were new ones.

279. **LITTLE OWL (*Athene noctua*)**.—Records are tabulated as follows:

Year	Breeding Season			Breeding Success			Winter birds
	Known pairs	Probable pairs	Birds present	Total sites	Young raised	No. pairs successful	
1985	31	14	37	82	12	5	33
1986	21	35	33	89	10	5	17

Despite records from 103 sites throughout the year, the overall position remains static, with the number of breeding season sites falling 15 or so short of the 1983-84 figures. Breeding success also declined sharply compared with those years but this may be due to the inclement start to the year. Apart from Bewl Water the main productive areas were as last year, plus a new site at Climping and a re-occupied one near Patching. Three pairs were present on 300 acres (120 ha) at Icklesham and 4 pairs on 60 ha at West Chiltington. The cliff site near Newhaven was used as a roost.

280. **TAWNY OWL (*Strix aluco*)**.—Records are tabulated as follows:

Year	Breeding Season			Breeding Success			Winter birds
	Known pairs	Probable pairs	Birds present	Total sites	Young raised	No. pairs successful	
1985	19	29	32	80	24	12	20
1986	21	29	16	66	16	7	10

From the records received, both breeding success and the total of breeding season sites declined after the two productive years of 1984 and 1985. Records were scarcer overall and were particularly scanty from the east of the county. Nest boxes again proved their worth: of 4 occupied 3 produced young. Five pairs held territories at Bewl Water, both Ebernoe and Arundel Park supported at least 4 pairs, and there were again 4 pairs on 60 ha at West Chiltington. Three of the 7 successful sites were in new areas, 6 records came from urban districts and 2 road deaths were reported.

281. **LONG-EARED OWL (*Asio otus*)**.—An average year for the species with birds reported from a number of previously unrecorded sites but, conversely, absent from at least one regular haunt.

In the first 3 months of the year a total of 9 birds were reported from 6 sites (4 downland, 2 coastal), with a maximum of 3 at one of the downland sites. One found near Rye in an emaciated condition on 8 Mar. was cared for by the RSPCA and released on 5 Apr. Another was found dead in the east of the county in Feb. and it is probable that these individuals were casualties of the cold weather.

A single bird reported from one of the river valleys on 8 June was the only breeding season record.

In autumn a total of 10 were recorded from 6 sites (1 downland, 5 coastal) from 1 Oct. There was a maximum of 4 at one of the coastal sites in Dec. One at Church Norton on 15 Nov. was indicative of a migrant.

282. **SHORT-EARED OWL (*A. flammeus*)**.—A very poor year for the species with the lowest number recorded since 1981. The approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	Sept.	Oct.	Nov.	Dec.
13	13	15	14	3	2	4	7	12

As in 1985, the highest numbers were reported from Thorney Island with up to 5 seen in Jan. compared with 8 there in Feb. 1985 and 10 in Jan. 1984.

Apparent migrants were recorded over Beachy Head on 11 Oct. and flying NW over Littlehampton on 29th.

284. **NIGHTJAR (*Caprimulgus europaeus*)**.—First recorded on 2 May at a downland locality. Arrival on breeding territories was much earlier than in 1985 with several present by mid-May. During the breeding season 74 territories were occupied of which 46 were in West Sussex (41 in 1985) and 28 in East Sussex (21 in 1985).

Two migrants were recorded in autumn: one was found dying at Arundel on 2 Sept. and there was one at Church Norton on 29 Sept.

289. **SWIFT (*Apus apus*)**.—First recorded on 26 Apr. at Beachy Head, Rye Hbr and Seaford and on 27th at Chichester GP. A more general arrival was noted on 3 May and passage continued throughout the month into June. The peak counts were 200 at Arlington Res. on 17-18 May, 250 at Barcombe Res. on 24 May and 1000+ at Bewl Water on 11 June.

Autumn departure began in early July with counts of 500 at Barcombe Res. on 5th and 350 W at Woodingdean and 700 at Beachy Head on 18th. There were 200 at Mannings Heath on 17 Aug. but few birds were seen after this date. In Sept. a total of 9 were recorded, the last of which was at Beachy Head on 20th.

291. **ALPINE SWIFT (*A. melba*)**.—One at Beachy Head on 20 July (KM *et al.*) has been accepted by *British Birds*.

293. **KINGFISHER (*Alcedo atthis*)**.—The harsh weather of recent winters seems to have dealt a severe blow to this species. In Jan.-Feb. maxima of only 7 at 6 inland and 7 at 7 coastal localities were reported. In Mar. birds were seen at 4 additional inland sites including an exceptional 5 at Shottermill on 9th.

Only 2 pairs were proved to breed (each producing broods of 4) and even an optimistic interpretation of the available records would suggest that birds could only have been nesting at a further 11 localities, the worst showing since 1963.

Not surprisingly, in the last 2 months of the year only 9 were seen at 8 coastal and 11 at 10 inland sites, even fewer than in 1985. This bodes ill for the 1987 breeding season.

295. **BEE-EATER (*Merops apiaster*)**.—One at Beachy Head on 26 May (DRB, AMH *et al.*) has been accepted by *British Birds*.

297. **HOOPOE (*Upupa epops*)**.—Five were recorded in the county during the spring. One was reported near Crowborough on 22 Apr. (CBa), while in May singles were seen at Butts Brow, Willingdon on 3rd (TP), at Polegate on 13th (PJW) and on 16th on South Downs Way above Storrington (PA, JA) and at Balmer Farm, Falmer (per RL).

The last 5 years have produced 26 records of Hoopoes in the county, with previous quinquennial totals (54 in 1977-81, 46 in 1972-76 and 65 in 1967-71) showing a marked reduction.

298. **WRYNECK (*Jynx torquilla*)**.—None were recorded in spring, but at least 15 individuals were found during an above-average autumn. First seen was one in a Portslade garden on 21 Aug. (ECPB, RHB) with one reported from Beachy Head on 25th. At Church Norton 1 on 30-31 Aug. (PJ, RJSe) was possibly that seen there from 3-8 Sept. (mo) with 2 present on 4th and 6th (BDJ, CWM). Also on 30 Aug. 1 at Whitbread Hollow (GG, SL, AW) was joined by a second on 31st (mo) when another was found nearby at Birling Gap (GG, SL, AW). In Sept. another was seen at Beachy Head on 6-7th (CFW *et al.*) while singles were recorded at Newhaven on 5th (JWK), Clapham Street on 7th (DC, EDT), Seaford on 9th (RB) and East Brighton GC from 16-19th (NAGL). A longer-staying individual seen in a Willingdon garden from 14-23rd (AH *et al.*) was perhaps fortunate to survive an encounter with a window on the first date.

300. **GREEN WOODPECKER (*Picus viridis*)**.—Apparently not affected badly by the severe weather in Feb. and continues to be numerous and widespread throughout the county at all seasons. Records received included 3-4 pairs at Cissbury, 3 pairs at Pippingford Park, 2 pairs at Chelwood Vachery and 2 pairs on 60 ha at West Chiltington. In Sept. 2 adults with 5 young were seen regularly near Warnham Park. Counts of this species in well-defined areas will be most welcome.

	Adur Levels (AJP) (55.1 ha)	Granley's Farm, coptice woodland/pasture (44.6 ha)	Kingley Vale (RW) yew/ash woodland (117.9 ha)	West Dean Woods (RW) hazel coptice (12.1 ha)	Ashdown Forest (EDB) heathland/mixed woodland (200 ha)	Finches Wood, Nuthurst (GET) coniferous woodland (50 ha)	Moulsecomb, Hollingbury Wood/Golf Course (MLC et al.) mixed scrub, woodland (280 ha)	West Chillington (FWD) Walden farm with copses (60 ha)
Turtle Dove	—	—	7	—	1	6	—	1
Skylark	22	—	1	—	9	—	4	—
Meadow Pipit	18	—	—	—	3	—	—	—
Wren	1	14	23	5	17	18	63	—
Dunnoek	4	5	25	2	1	12	52	12
Robin	1	23	34	7	18	28	75	—
Blackbird	12	18	44	5	26	40	127	—
Song Thrush	2	5	4	2	5	17	23	—
Mistle Thrush	1	1	1	1	3	3	13	2
Sedge Warbler	11	—	—	—	—	—	—	—
Reed Warbler	44	—	—	—	—	—	—	—
Lesser Whitethroat	2	—	5	—	—	2	4	3
Whitethroat	—	—	8	1	6	13	13	4
Garden Warbler	—	1	2	4	1	10	5	3
Blackcap	—	—	13	3	3	8	14	3
Chiffchaff	—	3	5	3	1	7	10	2
Willow Warbler	—	6	36	16	28	27	23	—
Goldcrest	—	—	1	1	—	9	1	1
Spotted Flycatcher	—	1	—	1	2	—	1	—
Long-tailed Tit	—	1	2	2	3	—	3	6
Marsh Tit	—	2	8	5	4	—	—	1
Blue Tit	2	17	3	9	17	—	55	—
Great Tit	1	7	16	7	16	—	29	—
Treecreeper	—	3	—	2	7	—	1	—
Jay	—	2	3	2	2	—	1	9
Magpie	2	5	6	1	3	2	24	10
Chaffinch	10	21	55	17	39	21	61	—
Linnet	12	—	—	—	4	—	11	—
Greenfinch	4	4	4	—	2	—	13	—
Bullfinch	—	2	13	2	4	2	13	2
Yellowhammer	4	4	13	—	6	11	10	10

NOTE: Counts in first 4 columns are based on Common Birds Censuses, counts in remaining 4 on techniques other than CBC. A dash does not necessarily mean the species was absent.

302. **GREAT SPOTTED WOODPECKER** (*Dendrocopos major*):—In the breeding season there were 4 pairs on 60 ha at West Chillington, 6 pairs in the woodlands adjacent to Bewl Water, 2 pairs at Chelwood Vachery and 2 pairs at Woods Mill. At Beachy Head 8 birds were reported between 23 Aug. and 12 Oct. Winter counts included 7 between Balcombe village and Balcombe Forest on 17 Jan., 5 on the north side of Ardingly Res. on 27 Feb. and 5 in Stanmer Wood on 6 Dec.

Whilst this species may now be too numerous to record on a casual basis, winter and breeding season counts in well-defined areas are of interest, as are details of birds penetrating urban and suburban areas and using feeding stations.

303. **LESSER SPOTTED WOODPECKER** (*D. minor*):—In the breeding season, records were received from 32 widely scattered areas but breeding was proved in only 4. At other times of the year seen in a further 20 localities. All records of this species are required annually.

310. **WOODLARK** (*Lullula arborea*):—One singing in a suitable breeding area in West Sussex on 17 Mar. (BJ, CMJ). Up to 6 were recorded nearby between 11 July and 8 Nov. (LWO) and there were single migrants at Beachy Head on 26 Sept. (JPS) and Rye Hbr on 23 Oct. (BJY).

311. **SKYLARK** (*Alauda arvensis*):—Cold weather movements in Feb. included 100 E per hour at Brighton on 6th and 100 SW at Worthing on 7th. A flock of 1000 was recorded at Chidham on 7th and there were 2000 from 10-12th. Elsewhere, 440 were seen at Nyetimber on 12th and 500+ at Lagness on 22nd.

Details of breeding season counts from defined areas are given on page 40.

Some westerly movement of flocks of up to 75 was noted in Oct. and Nov. and there were 200 N at Plumpton on 8 Nov.

312. **SHORELARK** (*Eremophila alpestris*):—One at West Wittering from 1 Jan. to 15 Mar. (many obs.).

313. **SAND MARTIN** (*Riparia riparia*):—First recorded on 21 Mar. at Church Norton and Runcton and at Rye Hbr the following day. Spring passage was once again very light with a max. of only 25 at Chichester GP on 30 Mar.

All the known breeding sites in the county were visited; details of the results of this survey are given on pages 62-65.

Autumn passage was well marked with counts of 100 or more reported from 8 localities. On 20 Aug. there were 500+ at Rye Hbr and on 13 Sept. 400 were seen at Barcombe Res. At Beachy Head there were 350 W on 7 Sept. The last recorded was one at Pagham Hbr on 28 Sept.

314. **SWALLOW** (*Hirundo rustica*):—First recorded on 20 Mar. at Pett Level and from a further 3 localities on 3 Apr. The peak passage occurred in early May with counts of 100 at Barcombe Res. on 3rd, 100 at Bewl Water on 5th and 150 at Arlington Res. on 9th.

An autumn roost at Thorney Deepes held 2000 birds on 23 Aug. and 800 on 18 Sept. Some large scale movements were recorded at Beachy Head in Sept. with 2000 W on 6th, 5000 W on 7th, 1000 W on 13th and 30,000 E on 20th. Passage continued through Oct. and there were an unusual number of records in Nov. with ca. 49 birds reported from 9 localities. The last recorded was one at Goring on 14 Dec.

316. **HOUSE MARTIN** (*Delichon urbica*):—The first recorded were 12 at Chichester GP on 4 Apr. There were no further records until 17th when 2 were seen at Bewl Water. Spring passage continued throughout May and into early June with peak counts of 400 at Bewl Water on 21 May and 200 at Arlington Res. on 17th.

Few breeding records were received. A slight increase in numbers was reported from

East Grinstead but at Maynards Green there was a further decrease with 21 first and 12 second broods (cf. 31 and 9 respectively in 1985).

The peak autumn movement occurred on 20 Sept. when there were 30,000 E at Beachy Head, 10,000 E at Saltdean and 33,000 W at Goring. There were 5000 W at the first locality on 7 Sept. Birds were widespread throughout Oct., and in Nov. ca. 175 were reported from 18 localities. The last was one at Worthing on 30 Nov.

317. **RICHARD'S PIPIT** (*Anthus novaeseelandiae*):—1980:—Single birds at St Leonards on 29th Sept. (SCR) and from 16-19 Oct. (KMJ, SCR) have been accepted by *British Birds*.

318. **TAWNY PIPIT** (*A. campestris*):—Details were received of 5 birds during Sept., a slightly below-average showing. Two adults were present at Rye Hbr on 9th (BJY *et al.*), one flew W over Roedean on 17th (NAGL), an adult was seen at Church Norton on 18th (TJE, BM *et al.*) and a well-watched juvenile was found near Cornish Farm, Beachy Head on 20th (GG, SL, AW *et al.*).

320. **TREE PIPIT** (*A. trivialis*):—A poor spring with only 11 migrants reported, the first at Arundel on 9 Apr.

During the breeding season 108 territories were located. Of these 62 were in Ashdown Forest (71 in 1985).

Fewer than normal were recorded in autumn with only 149 birds seen. The maximum was 25 at Beachy Head on 31 Aug. where the last bird was seen on 5 Oct.

322. **MEADOW PIPIT** (*A. pratensis*):—There were few reports for the early part of the year, probably due to the very cold weather. A flock of 75 in Feb. was the largest recorded. One was observed feeding on bird seed beneath a bird table in Ringmer after 5 cm of fresh snow had fallen. The usual movements were recorded in Mar. although these were on a small scale. The largest number reported was 228 N at Worthing on 29 Mar.

Although a few observers reported breeding pairs, it is very difficult from the limited comparative data to obtain an accurate picture of the species' status in the county. Details of counts of breeding pairs from defined areas are given on page 40.

Movements in autumn were as un spectacular as those in spring. The largest number recorded was 300 at Beachy Head on 12 Oct.

324a. **ROCK PIPIT** (*A. petrosus*):—In the early months birds were recorded from a number of coastal localities and, as usual, from estuaries and tidal river reaches. The maxima were 18 in Chichester Hbr and probably up to 40 on the East Sussex Rother.

The only breeding record received was from Cuckmere Haven.

In the latter part of the year the earliest in a non-breeding area was at Rye Hbr on 29 Sept. with other areas occupied from early Oct.

324b. **WATER PIPIT** (*A. spinoletta*):—Now treated as a separate species from Rock Pipit, fewer were reported than for many years. Single birds were seen at Sidlesham Ferry on 11 Jan. (BJ, CMJ) and 11 Feb. (TJE), at Bewl Water (PCB) and Widewater (RMS) on 12 Apr. and at Climping on 1 and 7 Sept. (ASC, RJLK). There were 2 at Pevensey Levels on 16 Jan. (RKH). In view of the comparative scarcity of the species, observers are requested to supply descriptions in support of their records.

325. **YELLOW WAGTAIL** (*Motacilla flava*):—1974:—Following a full review of all past British records of the race *feldegg*, the sole county record of one at Thorney Island on 23 June is now considered unacceptable.

1986:—An unusually early bird was reported from Rye Hbr on 23 Mar. There were singles at this locality on 1 and 6 Apr., 2 at Bewl Water on 8th and 2 at Arlington Res. on 10th. Most spring reports were of 1-3 birds only but there were 10 at Rye Hbr on 18 Apr. and 14 at Pett Level on 3 May.

At Rye Hbr 28 pairs bred, a welcome recovery after two poor breeding seasons. Other breeding records were not sufficient to show any general trend: 5-6 pairs at Waltham Brooks, 5 pairs in the Ouse Valley, 2-3 on Horse Eye Level and 1-2 pairs on the Upper Adur Levels. Although no systematic census of Yellow Wagtails was carried out on East Guldeford and Broomhill Levels during the Reed and Sedge Warbler survey, the species was considered to be at least as numerous there as during the 1980-81 survey when 177 territorial males were found (SxBR 1981, p. 69).

The first large autumn gatherings were of 80 at the Crumbles on 17 Aug. and 90 on 23rd. Many reports were received of 30-60 birds from coastal localities up to 24 Sept. and there were peak counts of 150 at Beachy Head on 31 Aug., 85 at Sidlesham on 5 Sept. and 85 at Selsey on 19th. One or two lingered into Oct. but there were 10 at West Hove GC on 6th. The last 2 at Rye Hbr were seen on 11th, there were 2 at West Hove GC and one at Beachy Head on 12th and one at Pett on 18th. Two at Amberley on 15 Nov. (MEK) were very late.

Three birds showing the characteristics of the Blue-headed race *M.f. flava* were recorded: males in the Cuckmere Valley on 7 May and at Sidlesham Ferry on 18th, and one of a pair, probably a bright female, at Berwick on 1 June.

327. **GREY WAGTAIL** (*M. cinerea*):—Reported from 6 coastal and 24 inland sites in Jan. and Feb. Very little spring passage was reported from the coast in Mar. and Apr. Also very much under-recorded in the breeding season with information for only 34 sites. A male was still singing at Pippingford Park on 29 June and 7 immatures were at Ifield Mill Pond on 3 July. In autumn coastal movements and inland dispersal were reported between 31 Aug. and 11 Oct. with a maximum of 6 E at Beachy Head and 6 at Shoreham on 21 Sept. At the end of the year records were received from 10 coastal and 16 inland localities during Nov. and Dec.

328. **PIED WAGTAIL** (*M. alba*):—Between Jan. and Apr. 70-80 roosted in reeds at Filsham. On 2 Mar. there were 75 on settling beds at Christ's Hospital SF.

Autumn passage was recorded from mid-Sept. Between 18 Sept. and 24 Oct. there were 121 E at Worthing, including 36 on 27th, when 60 were seen at Beachy Head. On 12 Oct. 160 flew E at Climping in 2 hours and there were 40 E at Beachy Head. Further movements were recorded in the next few days, including 73 E at Climping in 2 hours on 17th.

Late in the year up to 80 roosted again at Filsham, up to 60 at Arundel WFT, at least 70 in trees near Eastbourne Station and 200+ at Gatwick in bushes on a roundabout island on 30 Nov.

A total of about 23 birds showing the characteristics of the White Wagtail (*M.a. alba*) were recorded between 15 Mar. and 13 May. A male, paired with a female Pied, was watched feeding a juvenile in the Lower Cuckmere Valley from 14-21 July (WJMS). At least one bird in a flock of 30 at Beachy Head on 21 Sept. was considered to be of this race.

331. **WREN** (*Troglodytes troglodytes*):—Counts of breeding birds in defined areas are given on page 40.

332. **DUNNOCK** (*Prunella modularis*):—Counts of breeding birds in defined areas are given on page 40.

336. **ROBIN** (*Erithacus rubecula*):—Counts of breeding birds in defined areas are given on page 40.

338. **NIGHTINGALE** (*Luscinia megarhynchos*):—A late arrival was noted with the first 3 singing near Walberton on 17 Apr. followed by a single male at Beachy Head on 19 Apr. A more general spread of records occurred between 22 and 26 Apr. During the breeding season 104 singing males were recorded in 52 different tetrads. As usual most autumn migrants were recorded at Beachy Head where 26 were noted between 27 July and 9 Sept. with the maximum of 4 on 13 and 14 Aug. Elsewhere there were singles at Weir Wood Res. on 9 Aug., at Thorney Island on 4 Sept. and at Burnt Lodge near Bewl Water on 16 Sept.

reported in late Sept. and Oct. with 4 remaining at Beachy Head on 11 Oct. and 2 by R. Ouse at Newhaven on 17th. One at Ashcombe Bottom on 23 Oct. nearly completed a first and last double for that site but was denied by a late individual at Arlington on 31st.

345. **STONECHAT** (*S. torquata*):—Another poor year. The Jan., Feb. and Mar. totals of 51, 34 and 30 respectively were a slight improvement on 1985, although the number of breeding pairs reported decreased still further to only 15 pairs (cf. 23 pairs in 1985). Of these 6 were in Ashdown Forest (5 in 1985) and 4 at Beachy Head (7 in 1985).

Autumn maxima were 18 at Beachy Head on 30 Sept. and 7 on 15 Oct. The county totals for Oct., Nov. and Dec. were 41, 41 and 33 respectively. All records of this species are urgently required.

346. **WHEATEAR** (*Oenanthe oenanthe*):—One at Christ's Hospital on 9 Mar. was the first spring record, followed by 4 at Selsey on 13th and 1 at Widewater on 14th. On 16th 7 were reported along the coast, with a scatter of records to the end of the month, including 11 at West Beach, Littlehampton. The largest arrival of the spring occurred on 2 Apr. with 44 at Selsey, 32 at Worthing, 39 at Widewater, 27 between Hove and Shoreham and 30 at Beachy Head. A further 35 were reported from coastal localities, and inland records included 7 at Ifield Mill Pond, 11 at Gatwick Airport and 1 at Valewood, Haslemere. Other peak spring counts were of 18 at Langney Point on 6 Apr., 30 at Climping on 9th, 24 at Beachy Head on 13th and 24 at East Brighton GC on 24th. Few were reported in May, 2 of which were considered to be of the Greenland race — including the last migrant, at West Kingston on 23 May.

During the breeding season 6-8 pairs bred at Rye Hbr LNR, a similar number to 1985, but down on the 10-12 pairs there during 1981-84 and 17 in 1980. Success at Rye was 'moderate', while elsewhere only one pair was reported, from the Crumbles.

Autumn passage was poor, the first migrant being seen at Thorney Island on 15 July, while 2 juveniles at Mount Caburn, Lewes on 17th were perhaps of local origin. Only 3 others were reported before 11 Aug. when there were 10 at Thorney Island and 5 at Newhaven. Passage was heaviest from mid-Aug. to mid-Sept. with peak counts of 70 at East Brighton GC on 19 Aug., 50 at Beachy Head on 31st, 61 at Shoreham on 2 Sept., 30 at Pagham Hbr on 5th, 33 at Climping on 17th and 40 at East Brighton GC on 20th. On 4 Oct. 5 were seen at Pagham Hbr, 18 at Seaford Head and 15 at Beachy Head, but after 8 at Langney Point on 12 Oct. only ones and twos were reported. The last records were of singles at Climping from 29 Oct. to 1 Nov. and at Thorney Island on 15 Nov.



340. **BLUETHROAT** (*L. svecica*):—One found at Standean, Brighton on 5 Oct. was trapped on 6th (RH, RL). This is the first Bluethroat to be seen in the county on more than one date since 1971.

342. **BLACK REDSTART** (*Phoenicurus ochruros*):—Good numbers in autumn followed an average spring showing, the approximate monthly totals, excluding breeding birds, being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	3	19	31	9	1	—	5	4	88	27	8

Very few wintering individuals were in evidence and included none of those present in late 1985. During Jan. and Feb. singles were recorded at Shoreham Hbr and Newhaven with 1 seen at Brighton on 22 Feb. With so few wintering birds the arrival of the first migrants was clear. Migrants were first noted on 12 Mar. at Selsey, with 4 there on 18th, and at Climping and Rye Hbr on 16th. Single birds were widely reported, mainly along the coast, from late Mar. into early May, with 2 seen at the Cuckmere on 11 Apr. and 2 at Beachy Head on 12th and 19th. On 16 May 1 was seen in Worthing and another at Beachy Head, with 1 at Langney Point on 24th and the last migrant at Beachy Head on 1 June.

Single pairs were located at 2 sites during the breeding season, both in the north of the county with 2 recently fledged young seen at one and 4 at the other.

Aug. records were numerous with singles at Gatwick and Woodingdean in mid month, 1 at Church Norton on 27th and 2 at Whitbread Hollow on 30th. Three were seen at Beachy Head during Sept. with 1 at Newhaven Tidemills on 8th. Few were scattered along the coast in early Oct., with singles at Chantry Hill and Cissbury on 12th. Passage was at its peak in mid-Oct. with 19 at Beachy Head on 18th and 27 there on 19th, a county record. Elsewhere at this time 7 were seen at Rye Hbr, 3 at Hurst Green, 1 at Cowfold and a further 12 along the coast. Only 2 remained at Beachy Head on 22nd while 4 were seen at the Cuckmere on 23rd and 4 at Hollingdean on 24th. Ones and twos lingered along the coast through much of Nov. with 3 at Whitehawk Hill on 15th and 2 at Gatwick from 18th. In December singles were recorded at Selsey, Shoreham Power Station and Brighton Marina, with 2 at Newhaven Tidemills and up to 3 at Gatwick.

343. **REDSTART** (*P. phoenicurus*):—A total of 31 were recorded on spring passage, the first at Climping on 14 Apr.

Breeding season reports totalled 27 singing males or pairs of which 20 were in the east. At one site 3 pairs bred successfully in nest boxes, rearing 23 young. One of these pairs was double-brooded.

Autumn passage was heavy with just over 300 reported, mainly in early Sept., when easterly winds brought many all along the coastline. The maxima were 37 at Beachy Head on 8 Sept. and 20 at Church Norton on 9th. The last recorded was one at Maresfield on 19 Oct.

344. **WHINCHAT** (*Saxicola rubetra*):—A quiet spring was followed by a good showing in autumn, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	—	6	24	—	5	190	480	13	—	—

The first of the spring was one at Ashcombe Bottom on 25 Apr., quickly followed by singles at Beachy Head and Bexhill on 27th and Climping and Rye Hbr on 29th. Spring passage was light with 5 near Bexhill on 3rd but otherwise only scattered singles through to mid-May, the last being seen on the Adur Levels on 24th and on the Downs near Seaford on 25th.

Autumn passage was noted from early July, with singles at West Beach, Littlehampton on 1st and Hollingbury on 3rd. Few were then reported until late Aug., 15 on East Brighton GC on 19th and 12 near Bexhill on 22nd being the largest counts prior to an arrival on 30-31st. At Beachy Head 40 on 30th rose to 65 on 31st, but only 7 remained to 1 Sept. Eleven were seen at Gatwick on 31 Aug. and 8 at Pagham Hbr had increased to 62 on 1 Sept. The species was widespread through much of Sept. with larger counts including 24 at both Sidlesham Ferry and Climping on 5th, 37 at Beachy Head on 7th, 20 near Bexhill on 10th, 20 at East Brighton GC on 16th and 29 there and 22 at Beachy Head on 20th. Few were

359. **RING OUZEL** (*Turdus torquatus*):—An average spring was followed by a poor autumn, even by recent standards, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	1	1	13	4	—	—	—	4	35	5	1

A male at Exceat on 9 Feb. (GG, DM) was exceptionally early and recalled the record of one at Mannings Heath on 2 Feb. 1905. On 12 Mar. a female reported from Chichester GP would, otherwise, have been the earliest since 1971. In Apr. 2 were seen at Balsdean on 3rd, with 2 there on 15th and 3 on 24th. Between 24-27th singles were present at Newmarket Hill, Plumpton Green, Beachy Head and Combe Haven, with one at Ashcombe Bottom on 29th and singles at Newhaven and Lullington Heath on 1 May. Last of the spring were at Beachy Head on 12 May and at Hollingbury Camp on 18th.

In autumn 2 were seen at Kingston Hill and 1 at Beachy Head on 6-7 Sept. with one at the latter site from 26th. During a very quiet Oct. most records were from Beachy Head and the Downs between Brighton and Lewes. Peak counts were 2 at Plumpton, 2 at Hollingbury GC and 6 at Beachy Head on 8th with 3-4 at the latter between 10-14th and 3 on 26th. With the exception of 2 at Newtimber Hill on 7th and 11th, 2 at Pett on 16th and 2 at Cold Combes, near Lewes on 18-19th, all other records were of singles. In early Nov. 3 were present at Beachy Head on 1st, with 1 there and 1 at Pagham Hbr on 2nd and 1 at Willingdon on 3rd. Last of the year was a male at Balsdean on 3 Dec., only the 5th county record for that month.

360. **BLACKBIRD** (*T. merula*):—Counts of breeding birds in defined areas are given on page 40. During the autumn migration period evidence of influxes was noted at Beachy Head on 13 and 18 Oct. and at Cuckmere Haven on 2 Nov.

364. **FIELDFARE** (*T. pilaris*):—Flocks of 200 or more were reported from 9 localities in Jan., 7 in Feb. but only one in Mar. The maximum count during the first winter period was 2500 feeding on haws at Chidham from 4-7 Jan. A large cold weather movement occurred on 6 Feb. with 300 E per hour at Brighton, 800 E at Worthing and 500 S at West Chilmington. Smaller movements were recorded on 8 and 28 Feb. and on 1 Mar. there were 1500 W at West Kingston. The last spring birds were seen at Ashdown Forest and Barcombe on 19 and 20 Apr. respectively.

The first recorded in autumn were 2 at Bignor on 4 Oct. and one at Horse Eye Level on 12th. A large diurnal movement occurred on 2 Nov. with 1000 W at Bewl Water in 1 hour, 544 W at nearby Hurst Green in 2 hours and 500 SW at West Wittering. Smaller numbers were reported from 3 other localities. Thereafter, the species was very scarce with only 3 flocks of 100 or more recorded in Nov. and 2 in Dec.

365. **SONG THRUSH** (*T. philomelos*):—Cold weather movements in Feb. included 100 E per hour at Brighton on 6th. Counts of breeding birds in defined areas are given on page 40. A small autumn passage was recorded at Ashcombe Bottom (up to 30) and at Beachy Head (up to 50). There were 80 W at Hollingbury on 2 Nov.

366. **REDWING** (*T. iliacus*):—Flocks of 200 or more totalled 6 in Jan., 4 in Feb. but only one in Mar. The max. count was of 1500 at Combe Haven on 1 Jan. There were 200 E per hour at Brighton during cold weather on 6 Feb. and on 9-10th there were 300 W at Combe Haven. Only 4 birds were seen in Apr., the last at Haywards Heath on 17th.

In autumn first recorded at Hurst Green on 26 Sept. and at Plumpton on 28th. On 2 Nov. there were 143 W at Hurst Green, 60 W at Maynards Green and 50 W at Storrington. Heavy nocturnal passage was recorded over Brighton on 12 Nov. but the numbers reported elsewhere in the county were very small, possibly due to the failure of the hawthorn crop.

367. **MISTLE THRUSH** (*T. viscivorus*):—Breeding season counts received were of 13 pairs on 280 ha at Wild Park, 3 on 200 ha of heathland and mixed woodland in Ashdown Forest and 3 on 50 ha of coniferous woodland at Finches Wood, Nuthurst.

369. **CETTI'S WARBLER** (*Cettia cetti*):—Only males were recorded and there was still no sign of colonisation of the county by this species. In the early part of the year, 2 were recorded at one locality, one remaining until 20 Apr. This site was reoccupied on 24 Oct. and up to 2 were present to the end of the year. A single bird was recorded at a second site from early Jan. to 12 Apr. and at a third locality one was present on 25 Apr. A fourth site held a single bird from 6 Nov. to the end of the year.

373. **GRASSHOPPER WARBLER** (*Locustella naevia*):—First recorded on 22 Apr. reeling at Balsdean. A further 11 were noted on spring passage up to 14 May. Only 14 territories were found during the breeding season, representing a considerable decrease on previous years.

A total of 14 birds were seen on autumn passage of which 6 were trapped at Whitbread Hollow, Beachy Head, including the last on 10 Oct. One of these passage birds was caught by a cat near Flimwell on 7 Oct.

377. **AQUATIC WARBLER** (*Acrocephalus paludicola*):—1982:—Single juveniles were seen at St Leonards from 18-23 Sept. and on 30 Sept. (KMJ, SCR). These records have been accepted by *British Birds*.

1986:—A juv. was recorded at Rye Hbr on 18 Aug. (HT *et al.*).

378. **SEDGE WARBLER** (*A. schoenobaenus*):—First recorded on the late date of 17 Apr. at Arundel WFT and at a further 2 localities on 24th.

The first year of the Society's breeding survey revealed a total of approximately 210 pairs in West and 260 pairs in East Sussex, although coverage was more complete in the west of the county. At Combe Haven, where some former breeding sites were destroyed by dredging, it was noted that much suitable breeding habitat remained unoccupied.

Autumn passage was once again very light with peak counts of 150-200 per day at Combe Haven in Aug. but much lower numbers elsewhere. The totals trapped at coastal ringing stations were about average for the last few years and there is evidently no sign of an improvement in this species' fortunes. The only Oct. records were on 10th at Combe Haven and 18th at Pett Level.

381. **MARSH WARBLER** (*A. palustris*):—A pair bred successfully at one locality where there were also 3 apparently unpaired singing males. A singing male at a second locality on 14 June could not be re-found the following day.

382. **REED WARBLER** (*A. scirpaceus*):—First recorded on the late date of 25 Apr. at Combe Haven and on 1 May at Pagham Hbr. Arrival was protracted throughout May and June with no discernible peaks and one observer recorded the last arrival of a breeding pair on 29 June.

The first year of the Society's breeding survey revealed a total of approximately 730 pairs in West and 800 pairs in East Sussex, although coverage was more complete in the west of the county. At Rye Hbr 9+ pairs bred in oil-seed rape, possibly due to the poor growth of *Phragmites* reed resulting from the very cold Apr. and May. Counts of breeding birds in defined areas are shown on page 40.

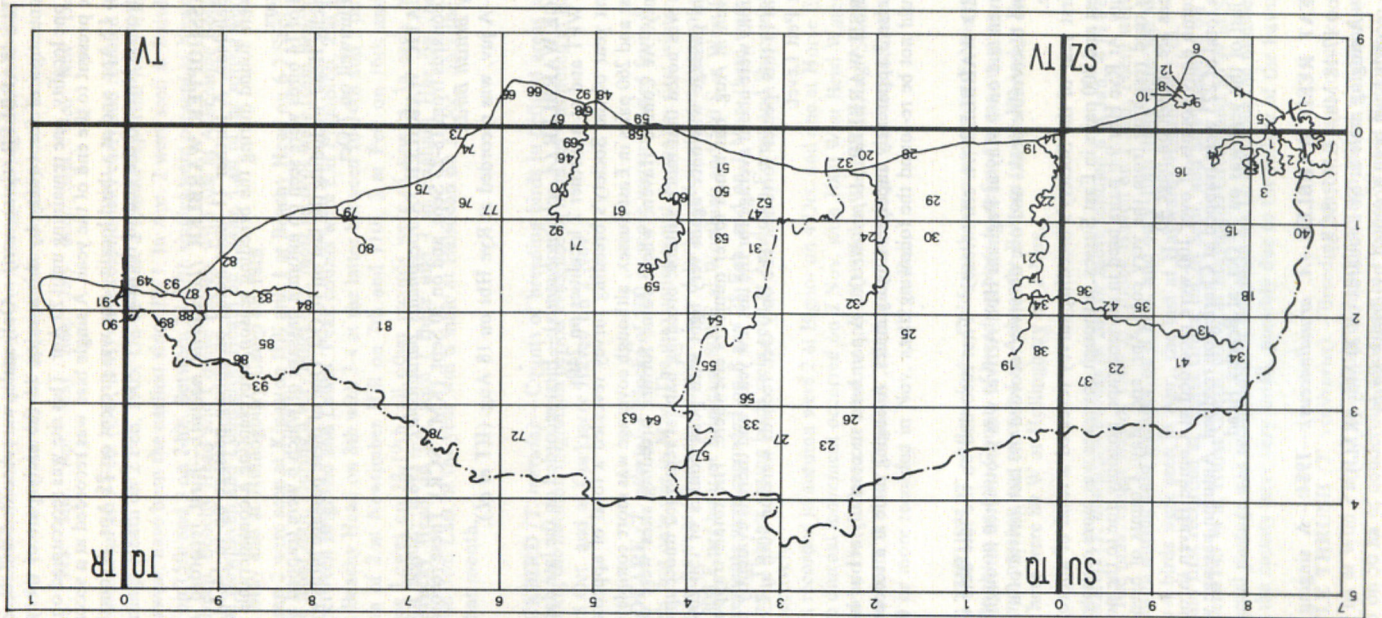
In autumn daily counts of over 100 were recorded at Combe Haven throughout Aug.-Sept. and a total of 223 were trapped at Charleston reedbed. Autumn passage was otherwise poor. The last of the year was on 19 Oct. at Beachy Head.

383. **GREAT REED WARBLER** (*A. arundinaceus*):—1984:—A singing male at St Leonards on 17-18 May (KMJ, SCR).

1985:—A singing male at St Leonards on 20 May (KMJ). These records have been accepted by *British Birds*.

Please note that places listed above are not necessarily of public access. Map compiled and drawn by M. J. Helps

- | | | | | | |
|-------------------------------|---------|--------------------------|---------|-----------------------------------|------------------|
| 8 Pagham Harbour | TV59 | 68 Cuckmere Haven | TQ01 | 21 Amberley Wild Brooks | TQ01 |
| 10 Pagham Lagoon | TQ31 | 81 Darwell Reservoir | SU91 | 35 Ambersham Common | SU91 |
| 79 Pebsham | TQ91/92 | 31 Easting Beacon | TQ32 | 56 Ardingly Reservoir | TQ32 |
| 82 Pett Level and Pools | TQ91/92 | 81 East Guldeford Level | TQ50 | 70 Ardington Reservoir | TQ50 |
| 76 Pevensy Levels | SZ79 | 7 East Head | TQ00 | 22 Arundel Park/Wildfowl Trust | TQ00 |
| 5 Pilsley Island | SU92 | 37 Ebernoe Common | TQ31 | 53 Ashcombe | TQ31 |
| 84 Powdermill Reservoir | TQ70/71 | 68 Excal | TQ42/43 | 63 Ashdown Forest | TQ42/43 |
| 32 R. Adur | TV59 | 79 Fishham Recbed | TQ30 | 51 Balsdean | TQ30 |
| 18 R. Arun | SU80 | 4 Fishbourne | TQ41 | 62 Barcombe Reservoir | TQ41 |
| 92 R. Cuckmere | TQ82 | 85 Flatroppers Wood | TV59 | 85 Beachy Woods | TV59 |
| 59 R. Ouse | TQ71 | 80 Fore Wood (Crowhurst) | TQ82 | 85 Beachy Head | TQ82 |
| 93 R. Rother (East) | TV59 | 67 Friston Forest | TQ21 | 24 Bedding Brooks | TQ21 |
| 34 R. Rother (West) | TQ40/41 | 61 Glynde Levels | TV59 | 66 Belle Tout | TV59 |
| 86 Rother Levels | TQ70 | 69 Glyne Gap | TQ63 | 78 Bewl Water | TQ63 |
| 87 Rye Harbour LNR/SSSI | TV59 | 79 Glynne Gap | TV59 | 65 Birling Gap | TV59 |
| 26 St. Leonards Forest | TQ30 | 66 Hodcombe | TQ32 | 55 Buebell Railway | TQ32 |
| 79 St. Leonards (on Sea) | TQ60 | 52 Hollingbury Wild Park | SZ89 | 11 Bracklesham Bay | SZ89 |
| 91 Seonry Court Gravel Pit | TQ60 | 75 Hoar Level | TQ81 | 83 Brede Levels | TQ81 |
| 48 Seaford Head | SU82 | 13 Ping Common | TQ10 | 28 Brooklands | TQ10 |
| 6 Seaisy Bill | TQ43 | 64 Isle of Thorns | TQ23 | 90 Broomhill Level | TQ91/92, TR01/02 |
| 68 Seven Sisters Country Park | TQ91 | 91 Jury's Gap | TQ23 | 39 Buchan Park | TQ23 |
| 9 Sidlesham Ferry | SU81 | 15 Kingley Vale | TQ70/71 | 79 Bulverhythe | TQ70/71 |
| 47 Stanmer Park | TQ12 | 25 Knapp Lake | SU91 | 36 Burton Mill Pond | SU91 |
| 40 Stansted Forest | TQ60 | 73 Langney Point | TQ91 | 49 Camber Sands | TQ91 |
| 2 Thorney Island | SU91 | 42 Lavington Common | TQ30 | 50 Castle Hill | TQ30 |
| 27 Tilgate Forest | TQ40 | 60 Lewes Brooks | TQ32 | 54 Chailley Common | TQ32 |
| 33 Waltham Brooks | TQ10 | 29 Lychpole Hill | TQ11 | 30 Chantonbury Ring | TQ11 |
| 17 Waltham Place | TQ02 | 23 Lurgashall | TQ50 | 69 Charleston Recbed (Lillington) | TQ50 |
| 57 Weir Wood Reservoir | TQ30 | 46 Lullington Heath | TQ50 | 16 Chichester Harbour | SZ79, SU70/80 |
| 86 Wet Level | TR01 | 52 Moulscocomb | SU70 | 12 Church Norton | SZ89 |
| 65 Whitbread Hollow | TQ35 | 91 Midtrips | TQ60 | 3 Chidham | SU70 |
| 20 Witherham Level | TQ40 | 58 Newhaven Tide Mills | TQ00 | 14 Climping | TQ00 |
| 86 Witherham Level | TQ30 | 88 Northpoint Gravel Pit | TQ70/71 | 79 Colvaltham | TQ70/71 |
| 41 Woolbeding Common | TQ91/92 | 33 Paddockhurst Park | TQ60 | 74 Crumbles Gravel Pit | TQ60 |
| 27 Worth Forest | TQ33 | | | | |



389. **DARTFORD WARBLER** (*Sylvia undata*):—Wintering individuals were seen at 3 inland localities in Jan., one remaining until 5 Feb. A single bird was recorded at one of these sites on 23-24 Dec.

On the coast, there was one at Northpoint GP on 23 Jan. (BJY) and one at Littlehampton GC on 4 Oct. and 15 Dec. (PAR).

396. **BARRED WARBLER** (*S. nisoria*):—Three were recorded with certainty during an autumn which also produced another 3 tantalisingly brief views of birds probably relating to this species. Birds were trapped at Beachy Head on 25 Aug. (BHRG *et al.*) and at Icklesham on 6-7 Sept. (SJRR) while another was seen at Beachy Head on 8th (JPS). Twenty-two of the 29 Barred Warblers seen in the county have now been at Beachy Head.

397. **LESSER WHITETHROAT** (*S. curruca*):—The first was at Slimfold on 24 Apr., with only another dozen by the end of the month. Spring reports were of arrival at breeding sites, and only very small numbers were seen on passage.

In previous years highest breeding densities have been found in downland scrub, but these were matched by 27 singing males away from the chalk in the Pebsham/Filsham area. As usual, reported mainly in single pairs elsewhere in the county.

Autumn passage reports were conflicting. Lower numbers than usual were reported from Weir Wood Res., Runcton and Beachy Head, where the maximum was 80 on 30 Aug., but more than usual were seen at Ashcombe and Shoreham Sanctuary, and the number ringed in the county was the highest for at least 8 years at 413. Last seen on 5 Oct. at Beachy Head.

398. **WHITETHROAT** (*S. communis*):—First seen at Walberton on 14 Apr., and at least another 36 were reported from 20 scattered localities by the end of the month. No concentrations at the coast were noted, perhaps the sign of a successful passage, and all comments on breeding numbers were favourable. These included a 50% increase in pairs since 1984 at Bewl Water, a record year at Ashcombe where 128 adults and juveniles were ringed, and a great increase at Rye Hbr LNR to 16 singing males, the most ever recorded. Far more common than in recent years at Pebsham and Combe Haven with 34 singing males, while other counts included 12 males at Bellhurst, and 4 in 3 km along the R. Adur near Billingshurst.

Numbers were high during autumn passage at Combe Haven, with 40 regularly in Aug. and 70 on 7 Sept. At Castle Hill NNR, 100 were estimated in a mixed party of warblers and tits on 20 Aug., exceeding the peak counts of 75 at Beachy Head on 25 and 30 Aug. More than usual were caught at Shoreham Sanctuary, and at West Hove 25 passed through a garden between 19 July and 21 Sept. The last of 6 in Oct. were singles at Littlehampton and Ashcombe on 6th, the latter presumably delayed by its deformed feet.

399. **GARDEN WARBLER** (*S. borin*):—One was reported from the lower Cuckmere Valley on 19 Apr., but few others were seen until early May, and the main arrival took place from 8-18 May.

Most breeding season records came from the Weald, and counts of pairs or singing males included 3 at Gravetye Lakes, 4 at Darwell Res., 4 at Fernhurst, 5 at Weir Wood Res. and 10 in 3 km along the R. Adur near Billingshurst.

As usual, by far the highest numbers on autumn passage were seen at Beachy Head, with daily counts of 50-75 towards the end of Aug. and a peak of 200 on 6 Sept. Elsewhere, no counts exceeded 10, as at Filsham, East Brighton golf course and Shoreham Sanctuary. About a dozen were seen in Oct., the last on 14th at Beachy Head.

400. **BLACKCAP** (*S. atricapilla*):—Approximate totals of overwintering birds were 18 in Jan., 22 in Feb., and 13 in March, representing a minimum of 33 individuals, slightly fewer than in 1985. All records came from gardens, with up to 4 birds at some sites. Many stayed for several weeks, several well into April. Unusually, more females (17) than males (15) were reported.

Spring arrival was very protracted. Although singing males were present at some sites by early April, observers at Slinfold, Horsham, Lewes, Ashcombe and Combe Haven all

commented that the first birds were very late, with none in some areas until May. Few breeding season reports were received.

Autumn passage was considered exceptionally poor at Beachy Head, with a maximum of only 400 on 6 Sept. and no more than 200 on other dates, but with 100 as late as 11 Oct. The highest count elsewhere was of 30 at Climping (22 in one bush) on 18 Sept. Movement at the coast continued until mid-Nov., but only 5 were reported in Dec., at Brighton, Broadwater, Worthing and East Grinstead.

403. **PALLASS'S WARBLER** (*Phylloscopus proregulus*):—Single birds recorded at Balsdean on 6 Nov. (MHP, JR, GAS), Beachy Head on 9-10th (RDME, TWP *et al.*), Climping on 11th (ASC *et al.*) and Church Norton on 13-14th (TJE *et al.*) have been accepted by *British Birds*. Subsequent sightings of the Climping bird remain under consideration.

404. **YELLOW-BROWED WARBLER** (*Phylloscopus inornatus*):—At least 3 were reported during the latter part of the year increasing the county total to 37, all since 1961. One was watched at Whitbread Hollow, Beachy Head on 10 Oct. (JPS) and in nearby Belle Tout Wood from 11-13th (JWK *et al.*), though possibly 2 birds were involved. One was found at Church Norton on 8 Nov. (RJJ *et al.*) with another seen at Amberley on 20 Dec. (BFF, RAI *et al.*), the first county record for that month.

407. **BONELLI'S WARBLER** (*P. bonelli*):—An adult trapped at Beachy Head on 30 Sept. (RHC *et al.*) has been accepted by *British Birds*.

408. **WOOD WARBLER** (*P. sibilatrix*):—The first record was at Stanmer Park on 30 Apr. A further 6 were recorded on spring passage up to 10 May.

Breeding season records totalled 22 singing males, a welcome increase on the 1985 total of 10. As usual all were in the north of the county including 10 in Ashdown Forest.

A total of 8 were seen on autumn passage, the last at Rye Hbr on 21 Sept.

409. **CHIFFCHAFF** (*P. collybita*):—A total of 8 overwintering birds remained into Jan. but only one was seen in Feb. The first Mar. arrivals were at Shoreham on 10th and at Christ's Hospital on 15th. Spring passage was very prolonged and continued into late May.

Breeding season counts from defined areas are shown on page 40.

At Beachy Head a total of 246 were ringed in autumn. The peak counts at this locality were 300 on 6 Sept. and 200 on 11 Oct. Autumn passage at Ashcombe Bottom was poor with only 32 ringed. In Nov. and Dec. totals of 25 and 27 were reported from 14 and 16 sites respectively.

One showing the characteristics of the northern race *abietinus* was trapped at Plumpton on 23 Dec.

410. **WILLOW WARBLER** (*P. trochilus*):—Although first recorded on 26 Mar. at Arundel, the main arrival was very late with maximum counts of 30 at Chichester GP on 21 Apr., 35 at Beachy Head on 26 Apr. and 3 May, 50+ at Filsham on 4 May and 100 at Bewl Water on 10 May.

Single birds recorded in the Bewl area on 5 and 11 May and 11 and 22 June showed the characteristics of the brown and white morph of this species with no trace of green or yellow in the body plumage (PCB). As eastern races have no monopoly on this coloration, it is not possible to assign these birds to a definite subspecies.

Counts of breeding birds in defined areas are shown on page 40.

Autumn passage commenced at Beachy Head on 12 July but there were no significant movements until 9-10 Aug. when there were 725 at Beachy Head, 75 at Cissbury, 60 at Climping and 50 at Pagharn. The only other significant falls were on 7 Sept. when 205 were recorded at Beachy Head and 130 at Combe Haven. The ringing totals reflect the poor autumn for this species with 646 trapped at Beachy Head, 422 at Charleston reedbed, 137 at Shoreham Sanctuary and 71 at Ashcombe Bottom. The last recorded was one at Beachy Head on 18 Oct.

411. **GOLDCREST** (*Regulus regulus*):—Records were received from 25 observers; all agreed that this species had been decimated by the cold weather in Feb. Except for systematic counts of breeding birds in defined areas, a maximum of only 192 were reported, with approximate monthly totals as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
92	3	6	6	2	—	2	3	6	22	46	5

Apart from 40 at Park Wood, Piltown, 30 at Offham Hanger, Arundel, and 11 at Pagham Hbr in Jan., records were of single figures except for 11 at Beachy Head on 4 Nov. This marked the peak of a late and very reduced autumn passage; none was trapped at Icklesham, Whitbread Hollow, Ashcombe Bottom, Shoreham Sanctuary or Cissbury, and 75% of all records were of singles.

412. **FIRECREST** (*R. ignicapillus*):—Another poor year for this species, the monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	4	3	10	4	3	—	—	9	7	11	4

In Jan. single birds were recorded at Church Norton on 31st and at Arundel WFT on 23rd and irregularly during Feb. Other Feb. sightings were at Climping on 2nd, near St Leonards on 9th and at Broad Oak on 27th. March was exceptionally poor with only 3 recorded, the overwintering bird at Arundel on 17th and migrants at Bognor and Newhaven Tidemills on 19th. Spring passage was later than usual, with single birds recorded as follows: at Selsey on 3 Apr., Climping on 6th, Southwater Country Park on 11th, Beachy Head on 12th, Langney Point on 19th, Bognor from 23-25th, Rye Hbr on 24th and 26th, Cuckmere Haven on 25th, Rye Hbr on 2 May, Beachy Head on 5th and 11th and Shoreham Airport on 6th. Surprisingly, after a poor spring, 2 singing males were located in different parts of Ashdown Forest in early June and a female was trapped at Shoreham Sanctuary on 22nd.

In autumn, singles were seen at Rye Hbr on 11, 14 and 17 Sept. Beachy Head recorded its first on 15th, with 2 on 19th and 3 on 20-21st. Singles were seen regularly at Beachy Head in late Sept. and early to mid-Oct. with 3 there on 12th. Elsewhere in Oct. reports came from Church Norton on 6th and Climping on 8th. Nov. proved the best month for this species with 2 at Woods Mill on 2nd and 3rd, singles at Tilgate and Shoreham on 8th, 3 at Beachy Head on 9th and 15th, 2 at Climping from 17th and singles at Thorney Island and Church Norton. The only Dec. records came from Church Norton and Climping with 1-2 individuals regularly reported at each site.

413. **SPOTTED FLYCATCHER** (*Muscicapa striata*):—First of the spring was one at Arundel on 23 Apr. with none then seen until 3 at Beachy Head on 3 May and 1 at Runcton on 8th. An arrival was noted from 11-13th after which the species was widespread.

Counts of breeding birds in defined areas are shown on page 40. Away from the defined areas 24 pairs were reported, 8 of which were seen with a total of 26 young (average 3.25). Three pairs were thought to have failed due to the presence of Magpies, though one pair at Ansty tried again nearby and successfully reared 4 young.

In autumn 2 were at Beachy Head on 16 Aug. and 8 at Arundel on 17th. A peak was noted on 31st with 8 at Thorney, 8 at Church Norton, 6 in Moulsecomb Wild Park and 10 at Beachy Head. In Sept. 15 were seen at Woods Mill on 6th and 10 at Church Norton and 12 at Climping on 10th, with 18 counted there on 18th falling to 7 on 21st. Few were reported subsequently with 5 recorded in Oct., the last being seen at Woods Mill from 6-8th and Rye Hbr on 11th, the latest county record since 1979.

414. **RED-BREASTED FLYCATCHER** (*Ficedula parva*):—A very late individual was seen at Church Norton on 2 Nov. (PFBu, RAI, DIS *et al.*). This is the 16th to be seen in the county and the first in Nov. All but one of the previous records have been since 1967.

416. **PIED FLYCATCHER** (*F. hypoleuca*):—An average spring was followed by a quiet autumn, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	—	3	8	—	—	—	34	27	2	—

First recorded on 26 Apr. with 1 at Rye Hbr, followed by 1 at Church Norton on 27th and another at Rye Hbr on 29th. All May records fell between 3-10th, with 3 seen at Beachy Head, including 2 on 5th, and singles at Church Norton, Arundel, Worthing, Stanmer and Eastbourne. In autumn 1 was seen at Withdean from 7-11 Aug. with 2 at Beachy Head on 10th. Autumn passage was then steady with most records falling between mid-Aug. and mid-Sept. At Beachy Head only 21 were recorded with a maximum of 4 on 24 Aug. and 27 Sept. Elsewhere all records involved 1 or 2 individuals and were widely scattered, though mainly coastal. In Oct. 1 was seen at Icklesham on 2nd, with the last in Brighton on 4th and 11th.

417. **BEARDED TIT** (*Panurus biarmicus*):—In the early months, recorded in 5 areas with up to 30 at one site but only single figures at the others.

At one locality in the west of the county birds were present throughout the summer although breeding was not proved.

In autumn there were 5 migrants at Littlehampton West Beach on 29 Oct. but none were reported from Pett Level. Thereafter, recorded at 4 coastal localities with, as in spring, up to 30 at one site but only 10 at the others. The Dec. numbers were reduced, suggesting onward passage.

418. **LONG-TAILED TIT** (*Aegithalos caedatus*):—Widely reported throughout the county in flocks of up to 35. The cold weather in Feb. did not appear to cause heavy losses, although numbers on the downs at Ashcombe Bottom were considered lower than in 1985. Counts of breeding birds in defined areas are shown on page 40.

On 10 Aug. a flock of 30-35 passed through a garden in West Kingston where they had previously been unrecorded. Possibly involved in a small local dispersive movement were 2 ringed at Ashcombe on 4 May and retrapped together at Plumpton on 20 Nov. and again on 8 Dec.

419. **MARSH TIT** (*Parus palustris*):—Reported from 26 localities at either end of the year, and at a further 4 during the breeding season, this species retains its seemingly stable, but nowhere plentiful, presence. There were 5 at Kingley Vale on 2 Mar. and 6 at Rackham Woods on 31st but elsewhere mostly singles or pairs were seen, probably as a consequence of this species' need for large territories which are defended all year. Birds visiting garden feeders were reported from 3 localities.

Counts of breeding birds in defined areas are shown on page 40. A pair reared 4 young in a nest-box at Possingworth Park, surprisingly in a conifer plantation.

At Shoreham Sanctuary, one on 17-21 Sept. was the first seen there since 1954. On 25 Oct., 5 were seen in a tit flock at Lychpole Hill, and in Dec. 5 were present in Stanmer Woods.

420. **WILLOW TIT** (*P. montanus*):—Like the previous species nowhere plentiful, but reported, mainly in singles or pairs, from 12 localities in the early months. During the cold weather in Feb., one visited a Mannings Heath garden daily.

During the breeding season, reported at a further 5 sites. A pair was seen excavating a nest-hole at Ashcombe Bottom on 5 Apr., an area of scrub-covered downland, highlighting the fact that this species does not require mature trees for breeding, only decaying ones.

In the latter part of the year, recorded at a further 7 sites with 2 at Beachy Head on 7 Sept. and singles there on 4 and 12 Oct. A party of 6 at North Stoke on 12 Oct. was the highest number reported during the year.

The species' ability to nest in non-mature woodland, scrub and even hedgerows could lead to it being under-recorded in the breeding season and observers are asked, therefore, to listen for its distinctive call-note in such habitat in Apr-June.

422. **COAL TIT** (*P. ater*):—In the early months, several observers commented on the regular appearance in gardens of 1 or 2 birds where presence had not been noted for several years previously. The highest number recorded together during Jan-Mar. was 8 at Clapham Woods.

During the breeding season, the species was reported utilising nest-boxes in or near

conifers at 4 localities. Fledging success was typically high at all 4 sites with a total of 86 flying from the 88 eggs laid. Only 1 pair attempted a second clutch but they deserted soon after laying.

One at Ashcombe Bottom on 16 Sept. was the only record there in 1986. At Beachy Head there were singles on 20 and 27 Sept. and a maximum of 10 on 26 Oct. Recorded at garden feeders in widely scattered parts of the county from Sept. onwards.

423. **BLUE TIT** (*P. caeruleus*):—The highest recorded concentration during Jan-Mar. was 18 at Darwell Res.

In various nest-box schemes, 10% fewer pairs were found than in 1985 but the number of young fledged was only 3% lower, indicating a small increase in clutch size and fewer fatalities in the nest. The mean date for first egg-laying was 10 May (cf. Great Tit), very late compared with recent years. Counts of breeding birds in defined areas are given on page 40.

A post-fledging flock of 24 was seen at Bewl Water on 24 Aug. and at Beachy Head the autumn maxima were 35 on 20 Sept. and 50 on 26th rising to 60 on 17 Oct. At East Grinstead, 312 were ringed in one garden between Sept. and the end of the year, compared with 332 in the same period in 1985.

424. **GREAT TIT** (*P. major*):—Few records were received. A second consecutive autumn with little or no beech-mast may have contributed greatly to the apparent relative scarcity of this species.

In the breeding season, nest-box schemes in the north of the county indicated 15% fewer pairs than in 1985. Although hatching success was considered to be good, the number of young fledged also decreased by 15%. The mean date for first egg-laying in these schemes was 10 May, some 6 days later than in 1985, a situation repeated nationally in what was considered to be the latest spring for 40 years. Counts of breeding birds in defined areas are shown on page 40.

At East Grinstead, 61 were ringed between Sept. and the end of the year, compared with 77 in the same period in 1985. A black-headed individual seen at Shoreham at both ends of the year was believed to be the same bird as that seen there in Sept. 1985.

425. **NUTHATCH** (*Sitta europaea*):—Breeding season reports were of 5 pairs in 60 ha at West Chiltington, 2 pairs at Standen Wood and single pairs at Rewell Wood and Possingworth.

427. **TRECREEPER** (*Certhia familiaris*):—Widely reported from woodland areas throughout the county, the maxima recorded being 5 at Darwell Res. on 12 Jan. and 7 at Stanmer Woods on 6 Dec. The numbers ringed at Ashcombe Bottom and East Grinstead were average and did not suggest that the cold weather in Feb. had depleted the population.

Counts of breeding birds in defined areas are shown on page 40. Pairs bred successfully in nest-boxes at 2 localities, one box having been regularly occupied since 1981.

Possible migrants were seen at Brighton, Rye Hbr and Selmeaton in Mar-Apr. and at Climping and Church Norton in Nov.

430. **GOLDEN ORIOLE** (*Oriolus oriolus*):—A male was seen at Beachy Head on 12 May (GG).

432. **RED-BACKED SHRIKE** (*Lanius collurio*):—One was reported in spring, a male at Rye Hbr on 29 May (MD *et al.*) with at least 3 in autumn being the best showing since 1981. On 1 Sept. a juvenile was found at West Beach GC, Littlehampton (ASC) while a female was seen at Icklesham on 7th (SJRR). A well-watched individual, thought to be a juvenile male, was seen at Seaford Head GC from 5-9th (mo) and a report of 1 at Cuckmere Haven from 9-11th probably relates to this bird.

434. **GREAT GREY SHRIKE** (*L. excubitor*):—One at Wakehurst Place from 13-15 Mar. (SL *et al.*) was the only record. The last 3 years have produced just 2 records, quite a contrast to the 1974-76 total of 61.

436. **JAY** (*Garrulus glandarius*):—Breeding season counts from defined areas are shown on page 40. In autumn, presumed migrants were reported in small numbers (up to 3) from 5 localities.

437. **MAGPIE** (*Pica pica*):—The maximum count at the Moulsecomb roost was 102 on 20 Jan. The only other large concentrations reported were 21 at Castle Hill on 16 Apr. and 28 at Beachy Head on 25th. Breeding season counts from defined areas are shown on page 40.

438. **JACKDAW** (*Corvus monedula*):—As usual few records were received. There were 250 at Pett Level on 13 Feb. and a pre-roost movement of 300 was observed over Lavington Common on 17 Mar. In the second half of the year, there were 1300 at Gatwick on 16 July. Up to 2500 were recorded at a regular roost at West Chiltington in Oct-Dec. and a pre-roost flight of 1000 was observed at Iping Common on 1 Dec.

441. **ROOK** (*C. frugilegus*):—There were 1000 at the West Chiltington roost in Oct. and 1500 in Nov. and Dec.

442. **CARRION CROW** (*C. corone*):—The largest concentrations reported were up to 70 at Bewl Water, 55 at West Kingston on 30 Aug. and 44 at Old Lodge, Ashdown Forest on 23 Mar.

442b. **HOODED CROW** (*C. c. cornix*):—Single birds were seen at Henfield on 10 Jan., at Plumpton on 8 Mar. and at Combe Haven on 6-7 Apr.

444. **STARLING** (*Sturnus vulgaris*):—Up to 15,000 were counted at a roost in Seaford in Jan. and 10,000 in Dec. At Arundel WFT up to 25,000 roosted in reedbeds in Oct-Nov. but there were only 2000 in Dec. The regular roost at the Steyne, Brighton held 10,800 on 17 Nov.

448. **TREE SPARROW** (*Passer montanus*):—Another poor year with few large flocks reported. The Jan., Feb. and Mar. totals were 121, 172 and 86 in 4, 4 and 2 flocks respectively. The largest numbers recorded were at Gatwick, where there were 50 in Jan., 65 in Feb., 75 in Mar. and 100 in Apr., and at Pebsham where 50 were seen in Jan. and Feb.

The only breeding record received was of 5 pairs in nest-boxes at West Chiltington. Autumn passage at Beachy Head was recorded from 27 Sept. to 2 Nov. with a maximum count of 55 W on the latter date. The Oct., Nov. and Dec. counts (excluding the above passage birds) were low, with totals of 188, 63 and 113 birds reported and maxima of 160+ at Bewl Water on 25 Oct. and 50 at Ashcombe Bottom and Pulborough.

451. **CHAFFINCH** (*Fringilla coelebs*):—The totals recorded in Jan., Feb. and Mar. were 1300, 340 and 65 from 4, 4 and 2 localities respectively. The maximum numbers reported were 1000 at Grafham on 25 Jan. and 150 at Grafham on 18 Feb.

Breeding season counts from defined areas are shown on page 40.

The Sept., Oct., Nov. and Dec. totals of 50, 270, 410 and 120 respectively included 150 at Whitbread Hollow on 18 Oct. and 1 Nov. and at Stanmer Park in mid-Nov.

452. **BRAMBLING** (*F. montifringilla*):—Up to 25 were seen in the Coldean/Stanmer area in Jan. but there were only 3 singles elsewhere. The cold weather in Feb. produced a total of 240 from 13 localities, including 65 at Pebsham on 10th and 100 at Grafham on 28th. The Pebsham flock declined to 2-3 after 3 Mar.; during the remainder of the month 30 were present at 14 localities, and 12 were recorded in Apr. between 1st and 26th.

The first recorded in autumn were singles at Beachy Head and Combe Haven on 21 and 24 Sept. respectively. A total of 54 were seen at the first locality between 29 Sept. and 18 Oct. (peak 25 E on 12 Oct.) and 10 were reported elsewhere. The Nov. and Dec. totals of 41 and 4 respectively included 30 at Stanmer on 19 Nov.

453. **SERIN** (*Serinus serinus*):—Single birds were recorded at Arundel on 19 Apr. (SCR), at Littlehampton on 18 May (ACH) and at Beachy Head on 12 Oct. (MEN, AQ). Observers are reminded that some cage birds can closely resemble Serins and descriptions submitted, therefore, should be as detailed as possible.

455. **GREENFINCH** (*Carduelis chloris*):—A total of only 500 were recorded during the first 3 months of the year, including 100 at Rye Hbr in Jan., which decreased to 10 during the cold weather in Feb., and 300 at Kingley Vale on 2 Mar.

Counts of breeding birds in defined areas are shown on page 40.

At Rye Hbr numbers increased from 100 in June to 1000 in early Nov. but decreased to 300 by 19 Dec. The Sept., Oct., Nov. and Dec. totals from other localities were 150, 250, 300 and 20 respectively. There were 150 W at Beachy Head on 26 Oct. and 140 W on 2 Nov.

456. **GOLDFINCH** (*C. carduelis*):—The totals recorded in Jan., Feb. and Mar. were 74, 161 and 80 from 8, 7 and 3 localities respectively. Once again, there was little evidence of spring passage and few breeding season reports were received.

The Sept., Oct., Nov. and Dec. totals were 199, 1,421, 345 and 60 respectively. At Beachy Head there were 300 E on 12 Oct., 200 W on 26th and 190 W on 2 Nov., and at Climping there were 80 E on 12 Oct. and 150 E on 17th.

457. **SISKIN** (*C. spinus*):—The approximate monthly totals (excluding visible passage) were:

No. of sites	Jan.	Feb.	Mar.	Apr.	May	June	Sept.	Oct.	Nov.	Dec.
.....	24	22	30	23	4	1	4	16	12	10
No. of birds	375	360	135	6	1	1	12	385	115	155

At Combe Haven there were 134 N and 33 W in Jan-Feb., 16 N and 4 S in Mar. and 25 N and 3 SW on 26 Apr. There were 60 NW at Seaford on 13 Jan., 10 E at Beachy Head on 27 Apr. and 7 N at Cissbury on 28th.

A singing male was reported from one locality in the NW of the county on 15 June but there was no evidence of confirmed breeding.

First recorded in autumn at Pett on 7 Sept. and at Climping on 18th. During Oct. a total of 360 passage birds were reported from the coast between 8th and 26th. The peak movement occurred on 17th when there were 57 NE at Church Norton and 38 E at Littlehampton.

Siskins were reported feeding on peanuts in 15 gardens in Jan-Apr. and in 3 in Sept-Dec.

458. **LINNET** (*C. cannabina*):—In Jan. and Feb. flocks of up to 100 were reported at Rye Hbr. Elsewhere there were 150 at Woolbeding on 26 Jan., 43 at Icklesham on 3 Feb., 20 at Shoreham on 9 Feb. and 100 at Gatwick on 28th. The monthly flock totals for Mar., Apr. and early May were 200, 1000 and 250 respectively. These included 100-120 at Gatwick on 9 Mar. and 11 Apr. and 350 at Rye Hbr on 12 Apr. A total of 310 passage birds were reported between 29 Mar. and 5 May, with peaks of 80-100 E at Climping on 29 Apr. and 66 E at Worthing on 2 May.

Counts of breeding birds in defined areas are shown on page 40.

The Aug., Sept. and Oct. totals of 500, 450 and 175 respectively included 200 at Rye Hbr on 13 Aug. and 50 at West Chilington on 25 Aug., which increased to 230 on 8 Sept. and then decreased to 40 by 11 Oct. At Beachy Head there were 1000 E on 12 Oct., 150 W on 26 Oct. and 200 W on 2 Nov. There were 30 SW at Icklesham on 22 Oct.

Few records were received for Nov-Dec. and the only flock reported was 60 at Goring on 29 Nov.

459. **TWITE** (*C. flavirostris*):—At Paghams Hbr up to 18 were present in Jan., with 11-20 on 3 dates in Feb., at least 60 on 7 Mar. (OM), but none after 6-8 there on 15th. Elsewhere 6-7 were reported from the R. Adur on 3 dates in Jan. and early Feb. with 5 at Cuckmere Haven on 25 Jan. and 8 Feb. and 4 at Littlehampton on 6th.

Oct. records were numerous, with 2 at Cuckmere Haven on 11th and 11 on 19th and 29th, 17 reported from Pevensy Levels on 13th, 11 at Rye Hbr on 18th, 30 there on 24th and

5 at Pebsham on 23rd. At Paghams Hbr 6 were seen on 11 Nov., with 19-22 there regularly from 22nd to the end of the year. One was seen at West Chyngton Farm, Seaford on 15 Nov., 3 at R. Adur on 18th and 7 at Cuckmere Haven on 13 Dec.

460. **REDPOLL** (*C. flammea*):—A very under-recorded species, particularly in the breeding season. Reasonable numbers were reported in the early part of the year with 233 recorded in Jan., 584 in Feb., including a flock of 325 at Brantridge Forest on 1 Feb., and 170 in Mar. Two late winter reports involved feeding at bird tables.

Three large flocks were present in early May: 150 at the Paddockhurst Estate on 2nd, 300 at Old House Warren on 8th and 200 at Verdley on 10th.

True breeding season records numbered only 20 pairs/singing males.

A poor autumn passage with 132 recorded in Oct., 222 in Nov. and only 34 noted in Dec. Not included in the above figures are 117 at Combe Haven between 21 Sept. and 26 Oct. Daily maxima (all involving 40 birds) were on 12 Oct. and 26 Oct. at Beachy Head and on 15 Nov. at Church Norton.

463. **CROSSBILL** (*Loxia curvirostris*):—Records were widespread with evidence of moderate movements in late June, the approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3	18	46	5	75	112	53	16	4	—	17	12

In Jan. 1 flew over Combe Haven on 15th and 2 were seen at Wakehurst Place on 17th, with flocks of 8 at Rackham on 18 Feb., 10 at Ambersham on 26th and 15 there on 16 Mar. Also in Mar. 1 was seen at Fernhurst on 2nd and 30 at Ardingly on 29th. Several small groups were recorded in Apr. and May with up to 30 in Tilgate Forest from 25 May into June and 20 flying W at Midhurst on 31st. A small movement was noted in June with 18 moving E at Pett on 19th and 28 E there on 28th, c.25 at Wych Cross on 25th and 17 flying NE at Combe Haven on 27th. Elsewhere in June groups of 1-6 were recorded at 4 localities. In early July up to 15 were present in Buchan Park, Crawley, 15 at Storrington with 13 at Burton Mill Pond on 7th and 1-6 at 4 other sites. August produced records of up to 4 from 6 localities including 4 flying NW in Hastings on 6th, 1 S at Shoreham on 13th, 1 SW at Combe Haven on 21st, 2 N there on 22nd and 2 over Beachy Head on 30th. In Sept. 3 were seen near Easebourne on 5th and 1 on 12th, but none were then reported until early Nov. One flew over Beachy Head on 2 Nov. with 6 W there on 10th, while 9 were seen at Ambersham and at least 1 flew over Iping calling on 8th. Finally 12 were seen in Worth Lodge Forest on 6 Dec.

466. **TRUMPETER FINCH** (*Bucanetes githagineus*):—1984:—The bird recorded at Church Norton was present from 19 May, not 18 May as stated. The fourth record for Britain.

469. **BULLFINCH** (*Pyrrhula pyrrhula*):—Counts of breeding birds in defined areas are shown on page 40.

470. **HAWFINCH** (*Coccothraustes coccothraustes*):—Recorded in good numbers, the monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3	1	3	4	9	1	5	—	2	2	—	6

In Jan. singles were reported from Combe Haven, Ardingly and Ambersham with 1 seen in Haywards Heath on 16 Feb. and 3 at Wakehurst Place on 15 Mar. In Apr. singles were seen at the latter locality and in Burgess Hill, with 2 at Bewl Water on 24th. May produced 6 records: singles at Yapton, Ifield and Stanmer and 2 at Crowhurst, Fernhurst and Leonardlee. One was seen at Heyshott in June with 5 at Isle of Thorns from 28-30 July. On 13 Sept. 2 were present at Gravetye Lakes, West Hoathly, with singles at Combe Haven on 9 Oct. and Posingforth Wood, Ashdown on 26th. In Dec. 3 were seen at Gatwick on 7th, another at Combe Haven on 14th and 2 at Etchingham on 27th.

493. **LAPLAND BUNTING** (*Calcarius lapponicus*):—A male was seen at Chichester Hbr on 5 Mar. (RJS).

494. **SNOW BUNTING** (*Plectrophenax nivalis*):—Just 2 were reported in what must be the worst year on record for this species. These were both in Mar., at Climping on 10-11th (mo) and flying over Combe Haven on 31st (KMJ).

496. **YELLOWHAMMER** (*Emberiza citrinella*):—The totals recorded in Jan., Feb. and Mar. were 115, 135 and 193 from 4, 6 and 5 localities respectively. A flock of 65 was seen at Bewl Water on 10 May.

Breeding season counts from defined areas are shown on page 40. During the latter part of the year, flocks were reported from 6 localities only, with maxima of 150 at Cissbury on 18 Sept. and 350 at Plumpton on 27 Dec.

506. **REED BUNTING** (*E. schoeniclus*):—Reports from Ashdown Forest included 250 gathering to roost near Gill's Lap on 1 Feb. and 100 feeding at Camp Hill on 20th. A total of 58 was recorded at Pagham Hbr on 14 Feb. Birds were reported from 5 widely scattered gardens with a maximum of 12 at Horsham in Mar. and early Apr.

Thorough coverage of the Pebsham area produced a high count of 65 singing males. Other reports included 16 in the Arun Valley between Pulborough and Waltham Brooks and 4 near Billingshurst, 19 pairs at Rye Hbr and 15 occupied territories on Lewes Brooks. Drier habitats were also occupied, including many commons and some young conifer plantations in the Midhurst area, Ashdown Forest, Ditchling and Chailey Commons.

Between 19 July and 2 Nov. 47 were seen at Beachy Head including 14 on 11 Oct. and 13 on 12th. At Climping there were 8 on 8 Sept., 12 on 17th and 14 on 2 Nov.

510. **CORN BUNTING** (*Miliaria calandra*):—Roost counts between Jan. and Mar. included up to 30 at Filsham, 37 at Shoreham, 40 at Cold Coombes, 45 at Ashcombe Farm, 48 at Arundel WFT and 60 at Rye Hbr and Thorney Island.

During the breeding season a total of 50 singing males were reported from the downs between Goodwood and Beachy Head. Elsewhere, there were 6 at Rye Hbr and West Wittering and singles at Gatwick, Hurstpierpoint, Pett Level, Pulborough and Waltham Brooks. The species breeds widely on East Guldeford and Broomhill Levels but no counts have been made.

A flock of up to 90 was recorded at Shoreham in Sept.-Oct., there were 18 near Arlington Res. and 76 at Woodingdean in Nov. and 150 feeding on stubble at Plumpton on 27 Dec.

1985 erratum

QUAIL:—The Castle Hill, Newmarket Hill and Falmer Bottom records probably refer to the same bird.

RINGING IN SUSSEX IN 1986

by R. Leverton

Key to symbols and terms

	Age	Manner of recovery	Sex
1	Pullus (nestling or chick not yet flying).	x Found dead or dying.	♂ male
2	Full-grown, but year of hatching quite unknown.	+ Shot or killed by man.	♀ female
3	Definitely hatched in current calendar year.	v Controlled: caught and released by a ringer elsewhere.	
4	Hatched before current calendar year, but exact year unknown.	wv Colour rings read in the field.	
5	Definitely hatched last calendar year.		
6	Hatched before last calendar year, but exact age unknown.		

Details were received of 25,043 birds ringed in Sussex in 1986, the highest total ever. Rarest of the 104 species caught was a Bonelli's Warbler at Hodcombe, near Beachy Head, but the most spectacular must have been the Hobby netted at Rye Harbour. A Bluethroat near Brighton was the first to be ringed in the county for 9 years. The second very cold winter in succession badly affected the numbers of some species but not others. Fat and food reserves are high at the start of winter, and birds normally cope quite well with severe weather in December or January. However, if this is prolonged into late February or March, as also happened in 1963 and 1982, the effects are much more serious because fat reserves are depleted and most of the autumn seed and berry crop and accessible hibernating invertebrates have already been consumed. Yet different cold winters seem to affect different species most: in 1986 Goldcrests were decimated and catches of Long-tailed Tits were halved, but surprisingly the Wren total increased by 11%.

Perhaps reduced numbers among some resident species, combined with better survival in their own winter quarters, benefited the summer visitors. Catches were larger at all the autumn passage sites with the exception of Beachy Head. Redstart and Sedge Warbler totals were more than double their recent averages, and 549 Whitethroats were ringed in probably their best year since 1968.

Although not all ringers and groups obliged with details of their recoveries, some interesting ones were received. A Spoonbill was the third from a Netherlands colony to be found in Sussex in recent years:

Spoonbill	l	25.06.86	Bomenland, Vlieland, The Netherlands
	wv	12.10.86	Arundel (CB) 464km W

Other news was less welcome:

Hen Harrier	2 ♀	02.11.84	Wachtebeke, Oost-Vlaanderen, Belgium
	+	10.11.85	Amberley 312km W

After an increase, Hen Harriers are now declining in Britain due mainly to persecution, and although this individual was probably from the Continental population it is disturbing and disappointing that any large raptor should be killed at such a well-watched site.

Flocks of passage House Martins seem to lead an aerial and nomadic existence as they drift south in autumn, even roosting on the wing, unlike other hirundines which use reedbeds at this season. Perhaps because they are less tied to habitat, their autumn numbers vary greatly in Sussex. 1986 was a good year, and those caught with the help of tape-lures included the following ringed bird:

House Martin	3	22.08.86	Kirkwood, Strathclyde, Scotland
	v	18.09.86	Shoreham-by-Sea (JAN) 588km SE

Among the usual series of warbler controls were two Chiffchaffs; one, perhaps not a British bird, was moving quickly south:

Chiffchaff
3 03.10.86 Spurn, Humberside
v 11.10.86 Hodcombe, Beachy Head (RHC) 317km S

More often than other warblers, Chiffchaffs occasionally make some rather odd journeys which are difficult to interpret, as did another controlled at the same site:

Chiffchaff
2 13.07.85 Nemelaar, Noord-Brabant, The Netherlands
v 02.11.86 Hodcombe, Beachy Head (RHC) 361km W

Whether this bird intended to winter in Britain is uncertain, the origins of the few that do being far less clear than for Blackcaps. Another example of a presumed Continental Blackcap attempting to winter in Sussex came to light:

Blackcap
2 ♂ 06.10.84 De Panne, West Vlaanderen, Belgium
x 28.01.85 Worthing 210km W

Lack (1986) showed that our estimated 3000 wintering Blackcaps are widely distributed throughout Britain, whereas Black Redstarts winter mainly on the coast in the south and southwest. Mid-October is the peak of a small autumn passage of Black Redstarts through Sussex, and one made a quick SW movement:

Black Redstart
3 17.10.85 Hodcombe, Beachy Head (RHC)
x 25.10.85 St Mary's, Isles of Scilly 475km SW

About this time of the year Goldcrests too are often much in evidence at the coast, and though their passage was very sparse and later than usual in 1986, ironically it produced a spectacular control:

Goldcrest
3 ♂ 18.10.86 Lågskär, Åland, Finland
v 04.11.86 Hodcombe, Beachy Head (RHC) 1600km SW

According to folklore, Goldcrests migrating across the North Sea did so by hitching lifts on Short-eared Owls and Woodcocks, but in spite of their size they are capable migrants, this one averaging nearly 100 km per day.

Several movements of Robins between Sussex and Denmark or Poland have been recorded in recent years, but a Swedish-ringed bird found in midwinter seems to be a first for the county:

Robin
6 21.04.84 Nidingen, Halland, Sweden
x 15.01.85 Peasehaven 1060km SW

Very cold weather in early 1986 brought many of the thrush species into gardens, including another Swedish-ringed bird:

Blackbird
4 ♂ 03.07.85 Malmöhus, Sweden
v 09.02.86 East Grinstead (RFS) 983km SW

Sussex is near the edge of the wintering range for Blackbirds from Scandinavia and (as suggested in the 1982 ringing report) only in severe winters may any numbers reach the county. If Sussex is any guide, few ringers operate at this season except in gardens, and comparatively little netting is done in the open countryside. This may explain why the following Song Thrush was a first, not only for Sussex, but for Britain:

Song Thrush
3 09.09.85 Lao, Pannu, Estonia
v 08.02.86 Ashcombe, Lewes (RL) 1756km SW

Although large numbers of foreign Song Thrushes pass through Britain, and some winter here, there is not much ringing evidence to show where they come from, so a second foreign-ringed bird later the same year was useful:

Song Thrush
3 27.09.86 Oosterend, Terschelling, The Netherlands
v 12.10.86 Littleington (CRG) 460km W

Blue Tits and Great Tits, though ringed in their thousands in Sussex, produce few long movements in most years. An exception was in 1982, when very cold weather in the early months perhaps necessitated greater mobility, and this may also have happened in 1986. The value of ringing birds as nestlings is well shown by the two Blue Tits, proving that they were Sussex-bred. Although there appears to be an eastwards bias, this may be coincidence:

Blue Tit
1 02.06.84 Possingworth Park (JC)
v 20.02.86 Sandwich Bay, Kent 87km ENE
Blue Tit
1 13.06.85 Possingworth Park (RFS)
v 19.05.86 Canterbury, Kent 69km NE
Great Tit
3 ♀ 08.12.85 East Grinstead (RFS)
v 21.03.86 Sandwich Bay, Kent 99km E

Some movement of Blue Tits at the coast is suspected in most autumns too, but it is very difficult to be sure whether parties really are on passage or merely on local foraging expeditions, except through ringing evidence like the following:

Blue Tit
3 26.09.86 Whitbread Hollow, Beachy Head (BHRS)
v 08.10.86 Shoreham-by-Sea (JAN) 40km W
Blue Tit
3 27.09.86 Hodcombe, Beachy Head (RHC)
v 04.10.86 Shoreham-by-Sea (JAN) 39km W

Finally, a Coal Tit (one of a brood of 11) strengthened the impression that tits were more itinerant than usual in 1986:

Coal Tit
1 03.06.86 Pippingford Park, East Grinstead (JC)
v 15.11.86 Little Gaddesden, Herts 93km NNW

Movements of this nature are almost certainly distinct from juvenile dispersal, a frequently misused term which should be reserved for the mainly short-distance movements made by young birds soon after they reach independence, as illustrated by this Nuthatch:

Nuthatch
1 15.06.86 Streat, Hassocks (RJI)
x 09.07.86 Ringmer, Lewes 10km E

Nuthatches are even more sedentary than tits, but as they are less gregarious and exist at a much lower density, young birds may be forced to move until they find suitable woodland.

Many Greenfinch recoveries and controls have been given in previous reports, but none of these involved overseas movements. A few do cross the Channel:

Greenfinch
5 ♂ 14.03.84 Le Foulon, Guernsey
v 18.04.86 East Grinstead (JC) 259km NE

Another good spring for Siskins provided further evidence that passage birds in Sussex gardens may originate both from the Scottish breeding population and from the Continent:

Siskin
4 ♀ 06.03.85 Marley Common (PGD)
v 31.03.86 Monifieth, Tayside, Scotland 617km N
Siskin
5 ♀ 20.04.86 East Grinstead (RFS)
v 11.05.86 Golspie, Highland, Scotland 803km N
Siskin
5 ♀ 02.04.86 East Grinstead (JC)
x 08.06.86 Sundsvall, Sweden 1629km NE

There have been several Redpoll movements between Sussex and the north of England involving birds ringed on autumn passage:

Redpoll
3 ♂ 19.10.85 Weir Wood Res, (RFS)
v 17.05.86 Hilbre Island, Wirral, Merseyside 336km NW

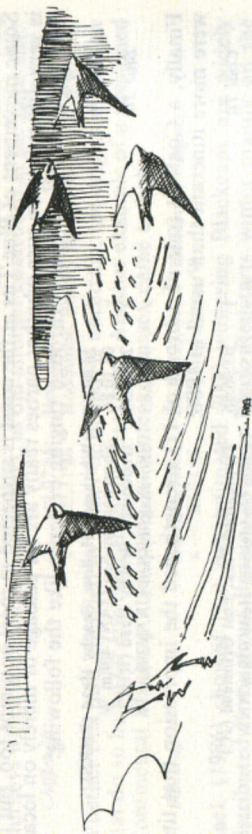
Finally, although the Corn Bunting study is mainly concerned with behaviour, it produced one medium-distance recovery:

Corn Bunting
1 27.07.85 near Iford, Lewes (DH)
x 20.01.86 Pett 48km E

REFERENCE

Lack, P. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. Poyser, Calton.

R. Leverton, *11 Arlington Crescent, Brighton*.



A SURVEY OF BREEDING SAND MARTINS IN SUSSEX, 1985-1986

by R. D. M. Edgar

INTRODUCTION

Of the British hirundines the Sand Martin (*Riparia riparia*) is the most constrained by its breeding requirements and so an excellent subject for a survey. That this had never been attempted in Sussex is surprising, although this was urged by Shrubbs (1979) and others. The serious decline in numbers reported by Mead (1984), and clear from personal observations, prompted me to suggest to the Scientific Committee of the SOS that a countywide survey be undertaken.

HISTORY

Most of the early ornithological writers provide little quantitative information, but indicate a general abundance in suitable localities, e.g. 'most of the large sandpits in the county are honeycombed by colonies of these birds' (Knox, 1855). The Society's records, and those published in *The Hastings and East Sussex Naturalist* and Gale (1986), as well as the present survey, reveal that approximately 50 different sites have been used in Sussex, some of them very short-lived. The only long series of counts is from the Rye Harbour area where a group of colonies has been recorded since 1946 but there were never more than 100 occupied nests in any one year. Shrubbs (1979) suggested that between 1965 and 1972 the maximum total in the county was just under 4000 pairs. The most important counts were those conducted by D. S. Flumm in the Sullington/Washington area. Here there were 2981 occupied burrows in 25 colonies in 1967 which had declined to 1551 in 12 colonies by 1969, a reduction of nearly 50%. The same observer found only 148 occupied nests in two colonies in 1974, and by 1977 reports indicate that less than 120 pairs were present in four colonies in this locality.

METHODS AND COVERAGE

All 10 km. sq. stewards were contacted and invited to assist in the survey. In addition, observers with particular knowledge of colonies were asked to make counts. An article in *SOS Newsletter* No. 93 produced additional offers of help. The Minerals Officers of both East and West Sussex County Councils provided lists of both working and disused sand quarries.

It is thought that all known suitable sand exposures were visited at least once in the survey periods of the breeding seasons of 1985 and 1986. It is possible that some small colonies in river banks, cliffs or holes in masonry could have been missed, but there is no reason to believe that any substantial colonies were not included. Detailed instructions on counting methods or dates at which visits should be made were not given to observers, but a reminder of the persistence of unoccupied old nest entrance holes was made.

TABLE 1. NUMBERS OF OCCUPIED BURROWS OF SAND MARTINS IN SUSSEX IN 1985 AND 1986

Site	Grid Ref.	No. occupied 1985	No. occupied 1986
WEST SUSSEX			
West Heath Common.....	SU 784228	3	10
Sandhills Quarry.....	SU 806224	6-8	2-3
Pendean.....	SU 890197	26	26-40
Heath End.....	SU 965187	10-18	7-17
Coates.....	SU 997176	28-40	29-60
Bognor Common.....	TQ 006213	2	1
Sandgate Park.....	TQ 103140	16-30	23-40
Washington Rock Common.....	TQ 125134	12-24	0
EAST SUSSEX			
Streat.....	TQ 349148	8-10	4
Rye Harbour LNR.....	TQ 940179	1	0
East Guldeford.....	TQ 939228	10-15	10-15
	Total	122-177	112-190
	Mean	149.5	151

RESULTS AND DISCUSSION

From Table 1 it can be seen that eight sites in West Sussex and three in East Sussex held breeding birds in the period. In addition it is just possible that a pit near Eartham (SU 929082) may have had about five occupied burrows in 1985 based on evidence from quarrymen. However, at other sites workmen have confused prospecting birds or wandering juveniles with established pairs, so this record has been omitted from the Table. The names and grid references of sites are given in the hope that this may encourage observers to keep a closer check on the status of this species in future. A list of all known sand exposures in the county is lodged with the Society's records.

Sand Martins are amongst the easier species to locate at their nesting sites but are very difficult to census accurately. Entrances to burrows from previous years can be persistent, though natural erosion of sand faces can be quite rapid. So a count of entrance holes present can be highly misleading. Since there is much visiting of adjacent colonies, particularly as part of a post-fledging exploratory phase (Mead, 1979; Mead and Harrison, 1979), numbers flying in the vicinity of a colony are not a good indication either. The results of the survey are not presented as true breeding pairs present, as female Sand Martins can commence a second brood prior to the first brood fledging, having mated with a new mate (Cowley, 1983). Results are therefore given as 'Occupied nesting burrows'. Some colonies were visited by more than one observer and, because of the difficulty in establishing the exact number of occupied nests which may call for frequent and prolonged visits, it was decided that the range of maximum counts of occupied burrows reported by different observers should be given.

Table 1 shows that the maximum number of occupied nests in 1985 was 122-177 and in 1986 112-190. The means are 149.5 and 151 respectively. This indicates that the number in both years was more or less stable at about 150 nests, a very low total, with East Sussex contributing a maximum of only 14%. Five of the eleven sites had ten or fewer occupied burrows and even the largest colony held only 60 nests. Despite the apparent stability of numbers, only the West Heath

Knox, A. E. 1855. *Ornithological Rambles in Sussex*. John van Voorst, London.
 Mead, C. J. 1979. Colony fidelity and interchange in the Sand Martin. *Bird Study* 26: 99-106.
 Mead, C. J. 1984. Sand Martins slump. *BTO News* 133: 1.
 Mead, C. J. 1985. Will they return? *BTO News* 137: 4.
 Mead, C. J. and Harrison, J. D. 1979. Sand Martin movements within Britain and Ireland. *Bird Study* 26: 73-86.
 Shrubbs, M. 1979. *The Birds of Sussex, their Present Status*. Phillimore, Chichester.
 Winstanley, D., Spencer, R. and Williamson, K. 1974. Where have all the Whitethroats gone? *Bird Study* 21: 1-14.

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A SURVEY OF WINTERING CORMORANTS IN SUSSEX, 1985/86

by Jane Watson

INTRODUCTION

The Cormorant (*Phalacrocorax carbo*) is a bird of coastal waters, but also makes use of reservoirs, gravel pits and the tidal reaches of rivers. With its increasing exploitation of inland waters, the Cormorant often comes into conflict with anglers, but since the Wildlife & Countryside Act 1981 it can only be killed under licence where it is causing appreciable damage. So that these licences could be issued objectively, the British Trust for Ornithology organised a national survey to provide information on Cormorant numbers and distribution.

The large, obvious Cormorant is a familiar sight in Sussex, where its typical habitat is plentiful. This being so, most birdwatchers do not include the species in their counts, and little is known about its status in the county. Hughes (1983) summarised the inland observations from the county records. The present study is the first systematic survey of this bird in Sussex.

METHOD

To estimate the Cormorant population was not easy, in view of the species' diurnal and tidal movements. Two methods of counting were employed. Three counts were requested of all known roost sites in the county, to be made on 16/17 November, 18/19 January and 15/16 March. A daytime count, coinciding with the National Wildfowl Count and the Birds of Estuaries Enquiry, was also made every month from September to April. This covered all coastal waters, rivers, reservoirs and certain ponds where Cormorants had previously been recorded.

RESULTS AND DISCUSSION

Inland and coastal water daytime counts

Rivers

Table 1 shows each of the main rivers in the county which have Cormorants associated with them. The tidal reaches of these rivers are fished most regularly, the frequency of sightings decreasing with increasing distance from the sea. However, there are reports of Cormorants flying a long way up these rivers to fish in undisturbed non-tidal water.

Common colony certainly increased, and declines probably occurred at Sandhills Quarry, Heath End, Bognor Common and Streat, with Washington Rock Common and Rye Harbour LNR abandoned. Since, by the very nature of the habitat, colonies are ephemeral, perhaps not too much should be made of the disappearance of small colonies, but in terms of distribution it is significant as East Sussex is well on the way to becoming deserted. No colonies were damaged by quarrying while in use, but the East Guldeford site in a steep bank of a drainage channel was raided by mink (*Mustela vison*) in 1986 (Bonham, 1987).

The few historical counts that are available, particularly the series from the Rye Harbour area, indicate that Sand Martin numbers are prone to fluctuations. However, a major decline took place between 1968 and 1969 nationally, in common with certain other trans-Saharan migrants, as a result of droughts in their West African wintering area (Cowley, 1979; Winstanley *et al.*, 1974; Edgar, 1986). This decline is demonstrated by the colony counts in the Sullington/Washington area (see earlier). A further series of droughts has led to a further major decline, and the British Sand Martin population is now at its lowest ebb in recorded history, with a decline of 71% between 1983 and 1984 in a sample survey, resulting in a population that is probably less than 10% of what it was in the mid-1960s (Mead, 1985). Certainly the total Sussex population as revealed by the 1985-86 survey is only 5% of the 1967 population in the Sullington/Washington area alone, and only 3.75% of the maximum population between 1965 and 1972 given by Shrubbs (1979).

For geological reasons the distribution of nesting colonies in the county is very uneven. There is no shortage of habitat as a whole, if the population were to recover, but the single colony in the centre of the county is threatened by infilling. With a population at such a low level, it is particularly important to make every effort to protect active colonies.

SUMMARY

A countywide survey of nesting Sand Martins in 1985 and 1986 revealed only some 150 occupied nesting burrows in each of those years, with a decline in the numbers of sites in the latter year. The county population has probably decreased by over 95% since the mid-1960s, primarily due to droughts in the Sand Martin's winter quarters.

ACKNOWLEDGEMENTS

I am grateful to all the 10 km. sq. stewards who responded to my requests for records. The following supplied counts of colonies: J. S. M. Albrecht, P. F. Bonham, H. A. C. T. Clark, F. W. Dougherty, B. F. Forbes, C. J. Fox, S. P. Hitchings, C. R. Janman, P. Lang, T. W. Parmenter, D. Sneller, G. W. Stallibrass, Dr A. B. Watson and Dr B. J. Yates. Special thanks are due to M. I. Banks, F. W. Blake and L. W. Osborne who each covered a number of colonies and, sadly, a lot of empty pits. R. Beattie of East Sussex County Council and P. Brown of West Sussex County Council kindly provided information on sand quarries. Messrs Arnold, Lee and Payne were most helpful in allowing access to working quarries; their interest in Sand Martins is encouraging. D. J. Pankhurst provided a great deal of fascinating historical data from the Hastings and Rye area.

REFERENCES

- Bonham, P. F. 1987. Feral mink raiding Sand Martin colony. *Sussex Bird Report* 39: 80.
 Cowley, E. 1979. Sand Martin population trends in Britain, 1965-1978. *Bird Study*, 26: 113-116.
 Cowley, E. 1983. Multi-brooding and mate infidelity in the Sand Martin. *Bird Study* 30: 1-7.
 Edgar, R. D. M. 1986. Some results of the study by ringing of warbler migration at Beachy Head from 1960 to 1985. *Sussex Bird Report* 38: 76-84.
 Gale, J. A. B. 1986. A history of Sand Martin (*Riparia riparia*) breeding colonies in the Society's area. *The Hastings and East Sussex Naturalist*, 13(5): 4-7.

TABLE 1. CORMORANTS RECORDED ON SUSSEX RIVERS ON COUNT DATES, 1985/86

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Arun	5	—	7	84	33	50	9
Adur	4	—	7	—	23	4	2
Ouse	6	2	3	1	—	1	—
Cuckmere	8	8	19	12	24	9	16
Rother							

See Table 2

TABLE 2. CORMORANTS RECORDED IN COASTAL AREAS ON COUNT DATES, 1985/86

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Harbour	54	73	54	47	42	35	23
Pagham Harbour	6	4	10	13	22	5	7
West Beach, Littlehampton	7	4	5	5	6	4	7
Southwick Beach	1	2	11	12	12	21	20
Pett Level	—	17	3	—	9	—	6
Rye Harbour & Rother	17	12	9	25	38	57	19

Coastal areas

These include the large estuaries of Chichester and Pagham Harbours, the levels at Pett and Rye, and certain stretches of coastline. Table 2 gives details. At Rye, Cormorants frequent not only the river mouth and coastal gravel pits, but also the River Rother regularly up to 6 km inland (beyond the tidal limit) and, to a far smaller extent, the Brede and Tillingham. Their favourite localities are Long Pit, Northpoint Pit and Union Channel. Chichester Harbour, however, holds the greatest number of feeding Cormorants throughout the autumn and winter, as would be expected since it is by far the largest area of sheltered coastal water in the county.

Although a large proportion of Cormorants are exploiting the protected, yet wide, channels of the estuaries, the beach counts indicate that the open sea is still an important habitat. Cormorants may be seen fishing along any stretch of the Sussex coast. However, because of movement of birds up and down the coast, and also because of manpower restrictions, it was only possible to count representative stretches of coastline, as at Littlehampton.

Inland waters

Table 3 gives counts at inland waters on the count dates. Many of these waters are a surprisingly long way inland for a typically marine bird. Bewl Water, for example, is 25 km from the sea. Often, however, these waters are associated with river systems — Barcombe Mills and Ardingly Reservoir with the Ouse, Arlington Reservoir with the Cuckmere, and Chichester Gravel Pits with the Chichester Canal. Cormorants can be seen crossing the coast at a river mouth and following the exact course of the river to their destination. Hughes (1983) suggested that they are not only using the river for navigation but also prospecting for fish.

Roost counts

Table 4 gives counts at roosting sites. The roost at South Stoke is the oldest still extant in the county (it was first reported in 1950) and by far the largest. Other counts at this site were of 191 on 15 December and 200 on 16 February. Many of the birds destined for the South Stoke roost gather first on Bognor Pier. Counts here were 127 on 18 November, 88 on 20 January, and 143 on 13 March. These birds then fly along the coast and up the Arun, and roost in a group of trees on the bank, spread over approximately 500 metres.

Another significant roost is at Fairlight. A full series of counts was not made here during the survey, but recent records show a large number of roosting birds, e.g. 87 on 3 January 1987 and 47 on 14 February 1987. This is an important site, especially as in 1985 a pair hatched two young here — the first breeding record for Sussex since 1938 or earlier — and in 1986 four pairs raised three young.

The roost site of the many Cormorants feeding in Chichester Harbour during

TABLE 3. CORMORANTS RECORDED ON INLAND WATERS ON COUNT DATES, 1985/86

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Gravel Pits	1	3	15	15	57	8	3
Ardingly Reservoir	1	9	5	11	1	4	1
Barcombe Mills	3	2	16	6	4	3	0
Arlington Reservoir	2	2-6 present most days throughout					
Bewl Water	15	13	10	14	14	8	7
Darwell Reservoir	0	0	5	8	1	0	4

TABLE 4. CORMORANTS RECORDED AT ROOST SITES ON COUNT DATES, 1985/86

	16/17 Nov.	18/19 Nov.	15/16 Mar.
Chichester G.P. — Ivy Lake	24	43	4
South Stoke	132	98+	125
Waltham Brooks	29	18	19
Wyckham Farm (Adur)	27	26	17
Ardingly Reservoir	10	31	3
Lewes Brooks	22	16	13
Pevensey Levels (13 Nov.)	13	0	0
Bewl Water	10	14	7

the day was not found. Some may join the South Stoke roost at Bognor Pier. An April report of 27 Cormorants flying south-west out of Pagham Harbour at dusk suggests the possibility of a roost on the Nab Tower, or even on the Isle of Wight, but with only one record this must be surmise.

There is also evidence for an undiscovered roost in the Newhaven area. Flights of Cormorants are regularly counted flying west past Brighton Marina early in the morning, for example 49 on 20 October and 63 on 30 November. These figures are too high to be accounted for by the roost at Lewes Brooks.

The small roost sites were not found to be entirely permanent. Sometimes they cease to exist altogether, as at Stopham Bridge, used from 1975 to 1983. This was probably due to disturbance from nearby road works. Occasionally a site moves a short distance, as at Wyckham Farm in the Adur Valley, where in December the roost moved ¾ km, three pylons to the north of the long-established roost. As well as the expected monthly variations, numbers using a site also vary from day to day. At Lewes Brooks on 16 November, 11 birds roosted, whereas the following evening 22 were present.

Perches used are usually trees near open water. At Lewes Brooks, Pevensey Levels and Wyckham Farm, pylons are used. At Fairlight the roost site is on the cliffs.

CONCLUSIONS

Although there is no definite peak, numbers of Cormorants tend to increase throughout the winter until January/February and then subside. This is probably not a direct reaction to hard weather, but rather is due to an extensive dispersal, chiefly southwards, of both breeding adults and juveniles from breeding sites around the coast. Most of these colonies are situated on the western shores of Britain. As Sussex has no colony other than the recent settlement at Fairlight (the nearest colony being on the Isle of Wight), our population will increase during post-breeding dispersal. Some of the Cormorants wintering in Sussex may come from as far away as Ireland.

Estimates of the population from both roost and daytime counts suggest a minimum of 400 birds wintering in the county. This is obviously an underestimate, although the total population is unlikely to be more than 600.

SUMMARY

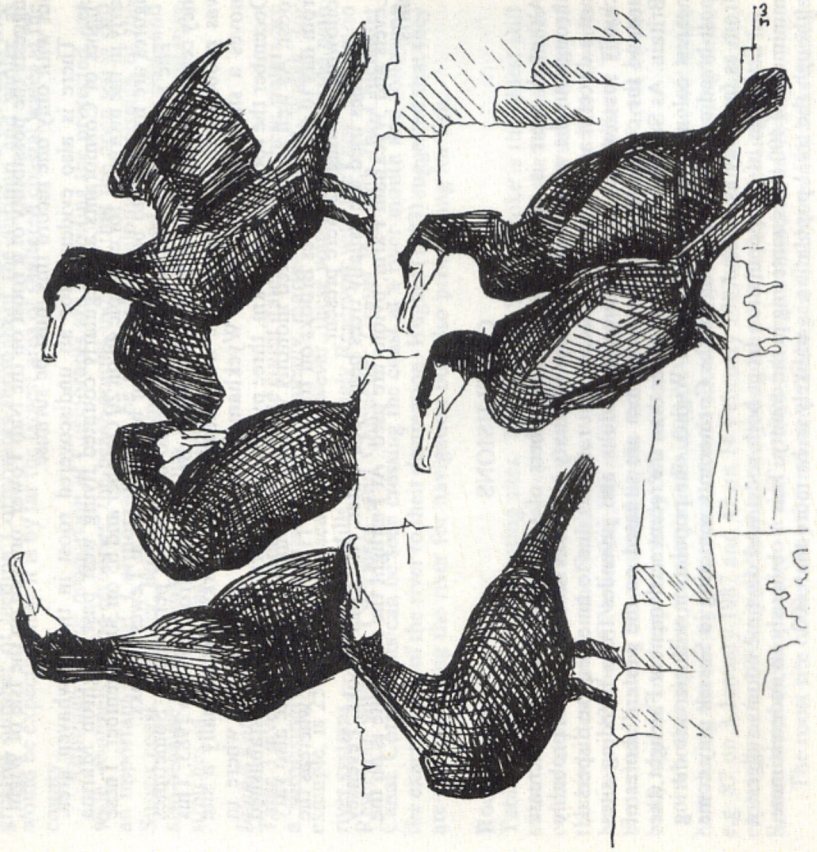
A survey was carried out in the winter of 1985/86 of wintering Cormorants in Sussex, as part of a national BTO survey. Counts were made of roosting Cormorants and also of those feeding on both coastal and inland waters during the day. A county population of 400 birds was estimated, although the true figure is likely to be nearer 600.

ACKNOWLEDGEMENTS

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REFERENCES

- Cramp, S., Bourne, W. R. P. and Saunders, D. 1974. *The Seabirds of Britain and Ireland*. Collins, London.
- Hughes, S. W. M. 1983. Inland observations of Cormorants in Sussex. *Sussex Bird Report* 35: 74-80.
- Lack, P. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. Poyser, Calton.
- Shrubbs, M. 1979. *The Birds of Sussex, their Present Status*. Phillimore, Chichester.
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CHANGES IN THE BREEDING STATUS AND HABITAT OF THE GREAT CRESTED GREBE IN SUSSEX

by S. W. M. Hughes

The founding of the Sussex Ornithological Society in 1961 marked a new era in Sussex ornithology in which much effort has been spent studying the distribution and status of some of the county's numerically less common breeding species. The Great Crested Grebe (*Podiceps cristatus*) was one of the first to be investigated, in 1962, and since then its numbers have been monitored in a series of surveys, the latest of which was performed in 1985. This paper reports the results of the 1985 survey and considers them in the context of the longer term changes over the 25-year period, 1962-86.

INFORMATION SOURCES AND METHODS

The breeding season distribution, as determined by the Society's surveys in the years 1962-64, formed the basis of a census in 1965. The latter was organised by B. A. E. Marr as part of a national study, the report on which included the detailed counts for Sussex (Prestt and Mills, 1966). A second census was performed in 1975 (Hughes, 1976), again as part of a national study (Hughes *et al.*, 1979), and a survey of inland waters in 1983 and 1984 provided a further check on distribution. The 1985 study included a census but it was also planned to provide information on changes in distribution during the breeding season, habitat details and breeding success.

The methods adopted for all three censuses were essentially the same and have been described in detail elsewhere (Hughes, 1982a). In the 1985 census an attempt was made to visit all waters from which the species had been reported at any time in the last 30 years, during the weekend 1-2 June, i.e. at the time of year when the movement between waters is at a minimum. Visits were also made to the same waters during the weekends of 20-21 April, 13-14 July and 17-18 August. However, as the prime objective of these extra visits was not to achieve a census, information has been accepted if visits were made within 7 days before or after the specified dates.

Great Crested Grebes will breed at almost any time of year, if the conditions are satisfactory (Simmons, 1974), but for the purpose of this review the breeding season has been taken as April to August, inclusively, and records outside this period have been included in the breeding analyses only if there was indisputable evidence, e.g. nest building or unfledged young. The Society's files have proved a useful source of information on early and late breeding and have also been used extensively for more general reference, as have the annual reports for Rye Harbour Local Nature Reserve (1971-85).

DISTRIBUTION AND STATUS

Sites

During the 25 years under review the species has been reported from 66 inland sites. However, the number known to have been used in any one year has rarely exceeded 30. For the purpose of this paper each gravel pit complex has been counted as a single site. The pits at Scotney Court on the Kent/East Sussex border have not been included as very little information is available for the site and a foreseen realignment of the county boundary will place it wholly in Kent. The 66 sites include four reservoirs which have been constructed during the period under review and one site which has been lost in the construction of a marina.

Breeding is known to have occurred at 50 sites (Appendix 1), successfully at 42, possibly successfully at another 7 and without success at one. Sixteen non-breeding waters are listed in Appendix 2. Breeding may have been attempted at 4 of these sites but, of the remaining 12, 2 are reservoirs lacking suitable nesting

habitat and 10 are small waters where the species has been recorded only very occasionally, usually during the spring dispersal.

The relative importance of each breeding site is given in Appendix 1, where waters have been categorised as *regular*, *irregular* or *occasional*. The *regular* sites are those where the species has bred almost annually; the *irregular* sites are those where, over the entire study period, the species has been absent more often than present but where, nevertheless, breeding has sometimes occurred almost annually for a few years, presumably when conditions were particularly favourable. Breeding at the *occasional* sites has always been an unusual event. At 13 *occasional* sites breeding has been proven only once and at the other 5 on no more than 3 occasions.

The geographical distribution of the waters from which the species has been reported is widespread across both West and East Sussex, but an analysis of the 49 proven breeding sites currently in existence (Table 1) shows a bias towards West Sussex.

TABLE 1. CATEGORY AND DISTRIBUTION OF BREEDING SITES IN SUSSEX (1962-86)

Site category	West Sussex	East Sussex
1. Regular breeding	14	7
2. Irregular breeding	8	2
3. Occasional breeding	14	4
Total	36	13

Numbers

The number of pairs reported annually over 25 years at *regular* and other breeding sites is illustrated in Figure 1. To some extent the total numbers reflect variations in annual coverage but the figures for the *regular* sites, where coverage in most years has been fairly good, except in 1973 and 1976, indicate a steadily increasing population.

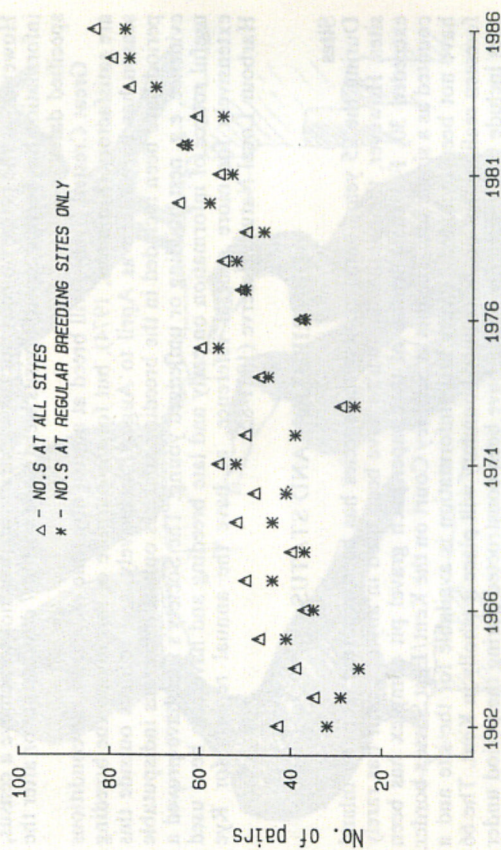


Fig. 1 Pairs of Great Crested Grebes reported each year at regular and other breeding sites.

TABLE 2. RESULTS OF THE 1985 CENSUS IN SUSSEX (1-2 JUNE)

	C	E	C	E	C	E	
Pagham Harbour	6	6	Warnham Mill Pond	5	6	Arlington Res.	3
Chichester Harbour	3	3	Slaugham Mill Pond	4	4	Eridge Park	2
Chichester G.P.	17	19	Slaugham Pond	2	2	Crumbles G.P.	9
Burton Mill Pond	1	2	Gossops Green	6	6	Wadhurst Lake	2
Lurgashall Mill Pond	2	2	Tilgate Lake	2	2	Bewl Water	28
Petworth Park Lake	3	4	Ardingly Res.	4	4	Darwell Res.	11
River Park Farm	1	2	Horsted Keynes Mill Pond	2	2	Powdermill Res.	5
Shillingham Mill Pond	2	2	Birch Grove	2	2	Rye Harbour SSSI	10
Littlehampton (coast)	2	2	Weir Wood Res.	34	34	Pett Pools	4
Knepp Lake	6	6	Balcombe Lake	2	2	Northpoint G.P.	4
			Balcombe Mill Pond	1	1	Rye	2

Key: C=total count of all birds visible. E=estimated total birds present.

Other sites visited during census:

West Sussex Bolney Pond, Buchan Hill, Chingford Pond, Cooks Pond, Crabbet Park, Cuttinglye, Forest Mere, Hammer Pond, Hawkins Pond, Horsted Keynes Hammer Pond, Ifield Mill, Lindfield, Loxwood Hills Pond, Milton Mount, Moor Farm, Petworth, Newells Pond, Parham Park, Petworth Park Pond, Pond Lye, Rowfant, Storrington Sandpits and White Vane.
East Sussex Barcombe Res., Bayham, Berwick Pond, Buckhurst Park, Hargate (TQ 581367), Maresfield, Powdermill House and Sheffield Park.

Accurate assessments of population size can only be achieved by carefully organised censuses, which minimise the risk of duplication due to birds moving between waters, and also include unpaired birds and birds at non-breeding sites and in coastal waters. The detailed results for the 1985 census are given in Table 2. The estimated total of 190 birds was 31% higher than the similar figure for 1975 which had been 43% above that for 1965.

No attempt has been made to adjust the figures for the number of sites visited in each census but it is clear (Table 3) that better coverage in 1965 would probably have found a few more pairs, and the apparent increase of approximately 88% between 1965 and 1985 is probably slightly higher than it should be.

Random observations in the months of March and April have often found unusually high numbers at some of the regular breeding sites, particularly in the north of the county, and it has been suggested that this may be evidence of birds passing through the county to breeding sites further inland. The new information provided by the three extra counts made in 1985 suggests that the adult population in Sussex remains remarkably stable between April and August but this may not be so every year and needs confirmation. Thus the increased numbers at some sites at the beginning of the season are more likely to reflect spring dispersal of pairs seeking suitable breeding sites rather than an influx of birds on passage, although some will undoubtedly eventually settle on nearby waters in neighbouring counties. This aspect is considered again when distribution is looked at in terms of habitat utilisation throughout the spring and summer.

TABLE 3. SUSSEX CENSUS RESULTS 1965, 1975 AND 1985 (ESTIMATED TOTALS)

	1965	1975	1985
Number of sites visited	36	53	59
Coverage (%) of potential sites	58	81	92
Coverage (%) of regular sites	94	100	95
Number of sites at which grebe(s) found	21	28	31
Estimated total at breeding sites (see Appendix 1)	101	137	179
Estimated total at non-breeding sites (see Appendix 2) plus birds in coastal waters	8	11	11
Overall estimated total	101	145	190

HABITAT

Habitat type

An analysis of sites according to habitat type and their importance as breeding sites (Table 4) shows that, in contrast to the gravel pits and especially reservoirs, only a minority (32%) of the breeding lakes are *regular* sites.

The relative importance of each habitat type in the census years, in terms of total number of birds found (Table 5), also shows that, despite the increasing population, the numbers found on lakes and gravel pits have remained remarkably consistent over the 20-year span of the censuses, whereas major increases have occurred at the reservoirs.

TABLE 4. ANALYSIS OF SUSSEX BREEDING AND NON-BREEDING SITES BY HABITAT TYPE

Breeding sites	Lakes			Gravel pits		Reservoirs	
	regular (Cat. 1)	irregular (Cat. 2)	occasional (Cat. 3)				
— regular (Cat. 1)	13	3	5				
— irregular (Cat. 2)	10	0	0				
— occasional (Cat. 3)	17	1	0				
Sub-total	40	4	5				
Non-breeding sites	13	1	2				
Total	53	5	7				

TABLE 5. DISTRIBUTION BY HABITATS AT TIME OF SUSSEX CENSUSES IN 1965, 1975 AND 1985

	1965	1975	1985
Number of available sites (including regular coastal locations)	63	66	68
Coverage (%) of available sites	58	81	92
Number of sites with grebe(s) present	21	28	31
Estimated numbers and (%):			
— on lakes	43 (43)	49 (34)	51 (27)
— on gravel pits	46 (46)	45 (31)	43 (23)
— on reservoirs	12 (12)	43 (30)	85 (45)
— in coastal waters	0	8 (5)	11 (6)

In May-June 1965 89% of the early breeding season population was distributed equally between the lakes and gravel pits, whereas in 1985 these two habitat types accounted for only 50% and the population at the reservoirs had increased from 12% in 1965 to 45%. Thus the major increases that have occurred in the Sussex population over the last 20-25 years have been possible due to the creation of new habitat in the form of three new reservoirs and the increasing maturity of the established reservoirs. Not apparent from Table 5 is that the stability of the numbers at the gravel pits obscures a substantial redistribution of the gravel pit population from West Sussex (Chichester) to East Sussex (Eastbourne and Rye).

Seasonal changes

Observations over several years in north-west Sussex have shown that many pairs have left their breeding sites by mid-July, even if their first breeding attempts have been successful. Similarly, in recent years there has been a spectacular build-up of numbers on some of the larger waters in the second half of July. This has been particularly noticeable at Weir Wood Reservoir where, for example, in 1981 there was a build-up from approximately 45 adults in mid-July to more than 90 in early August (Hughes, 1982b). By making four counts during the 1985 survey, it has been possible to examine the extent of this redistribution in terms of the four habitat types (Table 6).

TABLE 6. DISTRIBUTION BY HABITATS IN SUSSEX IN SPRING AND SUMMER 1985

	approx. 20-21/4/85	1-2/6/85	approx. 13-14/7/85	approx. 17-18/8/85
Coverage (%) of sites	92	92	90	90
Number of sites with grebe(s) present	30	31	27	24
Counts of grebe(s) (visible only)	192	183	187	182
Estimated numbers and (%):				
— on lakes	55 (29)	47 (26)	32 (17)	18 (10)
— on gravel pits	44 (23)	40 (22)	26 (14)	25 (14)
— on reservoirs	88 (46)	85 (46)	114 (61)	123 (68)
— in coastal waters	5 (2)	11 (6)	15 (8)	16 (9)

In addition to confirming the previously mentioned observations for the lakes and reservoirs, it was found that the numbers at the gravel pits had also dropped substantially by mid-July. Interestingly at the same time there was a clear increase in the numbers in coastal waters and as most Sussex gravel pits are near to the coast it has been tempting to assume that these changes are related. Similarly the numbers leaving the lakes were very similar to those appearing at the reservoirs.

By mid-August 68% of the adult population was at the reservoirs, the majority of this increase having occurred at only 3 sites, namely Weir Wood, Darwell and Ardingly. Surprisingly a similar build-up did not occur at Bewl Water. Only rarely are good numbers seen at Barcombe and Arlington Reservoirs and these usually occur much later in the year. It will be seen that 1985 was an atypical breeding year and the reservoirs were critical to the overall breeding success. The numbers at the reservoirs remained high well into the autumn and as a result the autumnal numbers at the coast built up only very slowly.

BREEDING DATA

Productivity

To achieve accurate data on breeding success and brood size, the progress of each pair should be followed from at least early March to late September and even then it is necessary to rely on casual observations at either end of the year to detect very early and late breeding. The 1985 survey fell short of these ideals but nevertheless it was the best attempt made, to date, in Sussex and the results are discussed later.

The Society's files contain a large amount of breeding data, and although they do not allow accurate calculations of breeding success, they do provide annual data on productivity per successful pair and total breeding pairs (Table 7). On a comparative basis these data show the very large variations which occur from year to year and some interesting differences between the three breeding habitats.

TABLE 7. BREEDING PRODUCTIVITY ANALYSED BY HABITAT TYPE (1962-86)

Habitat	Est. number of young reared annually per breeding pair		Est. number of young reared annually per successful breeding pair	
	Range	25yr mean	Range	25yr mean
Lakes	0.21-2.05	1.05	0.85-3.25	2.02
Gravel pits	0-1.24	0.64	*-2.21	1.58
Reservoirs	0-1.67	0.67	*-2.67	1.64
All habitats combined	0.35-1.24	0.78	1.08-2.63	1.80

*In some years no young were reared in these habitats.

During the period under review the mean productivity on the lakes has been better than that at the gravel pits and reservoirs, but this does not hold true for every year. A contributory factor is that a small number of pairs in traditional 'lake' habitat are double-brooded, whereas this is unusual at the gravel pits and

reservoirs. Analysis of the productivity figures for the lakes (Table 8) shows an apparent relationship between the productivity and the category of the sites. This supports the concept that the *occasional* sites are only marginally suitable. Similarly, whilst the *irregular* sites may be better, if not ideal, when conditions are optimal the number of young reared, per successful pair, can be as good as at the *regular* breeding sites.

TABLE 8. DETAILED ANALYSIS OF BREEDING PRODUCTIVITY AT SUSSEX LAKES (1962-86)

Site breeding category (see Appendix 1)	Est. number of young reared annually per breeding pair	25yr mean	Range	Est. number of young reared annually per successful breeding pair	25yr mean	Range
1. Regular breeding	1.14	1.14	1.0-3.3	2.06	2.06	1.0-3.3
2. Irregular breeding	1.00	1.00	*-3.5	2.23	2.23	*-3.5
3. Occasional breeding	0.57	0.57	*-4.0	1.75	1.75	*-4.0
Total for all lakes	1.05	1.05	0.85-3.25	2.02	2.02	0.85-3.25

*In some years no young were reared at these waters.

Breeding data for 1985

The attempt to obtain detailed breeding information on brood size and breeding success, for each habitat, and to examine other aspects, e.g. replacement clutches and double-brooding, was frustrated by an atypical season. Although the overall young reared per breeding pair at 0.82 was above the mean figure (see Table 7), 1985 was one of only five years when the breeding success at the traditional 'lake' habitat was not higher than in other habitats. Even more surprising, sub-analyses of the data for the lakes (Table 9) showed that the productivity at *regular* sites was the lowest recorded in the period under review, whereas the figure for the *irregular* sites was above average. Productivity at the gravel pits was slightly below average but the late breeding success at the reservoirs gave figures well above average, thus transforming what started as a disastrous breeding season into an average one.

TABLE 9. 1985 BREEDING SUCCESS IN SUSSEX ANALYSED BY HABITATS

Lakes	No. pairs present	No. pairs nesting	No. pairs successful	No. of young	Mean brood size	Mean breeding success per pair
regular breeding sites	16	11	1	2	2*	0.125
irregular breeding sites	9	7	5	12	2.2	1.33
occasional breeding sites	3	1	0	0	0	0
Combined total for all lakes	28	19	6	14	2.16	0.5
Gravel pits	16	11	4	8	2.0	0.5
Reservoirs	44	28	25	39	1.56	0.8

*Two broods each of one young.

A detailed examination of the data revealed that, after an almost uniformly bad start in all habitats, a redistribution of failed pairs took place from the lakes and gravel pits to the reservoirs and coast, and very few pairs remained in their original sites to lay second clutches. At the reservoirs the water levels remained high throughout the summer, allowing both the resident pairs and possibly some of the newcomers to nest again and with above average success. Also of interest was the limited success at the *irregular* lakes, which came late in the season at sites where the species had been absent during the census. Where successful breeding

occurred brood size was above average irrespective of the type of habitat. Only one pair was double-brooded and raised a single young from each.

Nest sites

In 1985 details were received for 60 nest sites (Table 10). Most were associated with emergent willows, especially at the reservoirs, or emergent marginal vegetation at the lakes and gravel pits. In recent years many pairs failing to breed successfully from nest sites in emergent marginal vegetation have re-nested later in the season in more open sites on floating vegetation. This was not seen in 1985 when very few pairs at the traditional sites laid second clutches.

TABLE 10. NEST SITE LOCATION IN SUSSEX (1985)

Nest site location	Lakes	Gravel pits	Reservoirs	Total
Marginal vegetation	10	6	4	20
Willows growing from water	2	1	23	26
Overhanging bankside vegetation	2	1	0	3
Dead branches in water	3	0	0	3
Floating vegetation	3	0	1	4

DISCUSSION

The number of Great Crested Grebes in Sussex has increased by approximately 88% over the last 25 years and this has come about due to the availability of new habitat in the form of reservoirs. However, these highly satisfactory figures should not be allowed to obscure the details of the changes that have occurred at the traditional sites over the longer term and more recently at the gravel pits and reservoirs.

In all three post-war censuses the breeding population at the traditional lake sites has been estimated at approximately 25 pairs, whereas in the 1930's the average population was in excess of 30 pairs (Walpole-Bond, 1938). Although this decline is numerically small, it represents 20% of the pre-war figure and is almost certainly due to a loss of breeding sites. Walpole-Bond named only a few traditional sites but Harrison and Holloom (1932) had given details of 27 of which at least 4 have become unsuitable, i.e. Crowborough Warren, Pippingford Park, Ashburnham, and Heathy Ground, Copthorne, the last having since been filled in during the building of the M23 motorway. Another site at Plashett Park which was used occasionally in the post-war years is not used now. The reasons for this are not entirely clear but may be due to the large numbers of Canada Geese breeding at this site.

Although breeding has occurred at 40 lakes at some time in the last 25 years it has been *regular* at only 13. Furthermore, the records for the 10 *irregular* sites suggest that these were used less frequently in the 1970's than in the 1960's. Whilst it might be argued that the birds which formerly tried to breed on some marginal waters have been attracted to the reservoirs, the decline may be due to insidious deterioration of the habitat. The possible reasons for this will be investigated in detail but it is already clear that increased human pressures, in the form of increased angling and boating, lowered water levels and silting-up, may be contributory factors.

The continuing importance of the gravel pits habitat is clear. Following a gradual build-up in numbers in the late 1950's and early 1960's, the breeding population at Chichester Gravel Pits remained reasonably steady at 16-23 pairs for

more than 10 years (1965-76) (Table 11). Since then there has been a steady decline as pits have been reclaimed and as leisure interests have intensified. Recently one pit has been designated for nature conservation and it is hoped that, given no further changes in water usage, the breeding population will now stabilise. At Rye Harbour the mature pits within the SSSI, but outside the local nature reserve, usually attract up to 4 pairs. However, breeding success has always been very disappointing, apparently due to a variety of forms of disturbance, which have included power boating and in one year a light float plane. Only recently has the species moved into the local nature reserve where it now breeds successfully. The pit at North Point, Rye, has been used in most years since 1981 but successful breeding has yet to be proven. At the Crumbles, Eastbourne, breeding has occurred almost annually since 1978 but only one pit is sufficiently mature to provide nest sites.

TABLE 11. NUMBER OF PAIRS AND YOUNG REARED AT CHICHESTER G.P. AND WEIR WOOD RESERVOIR, 1962-86 (ALTERNATE YEARS AND SURVEY YEARS ONLY)

	1962	64	65	66	68	70	72	74	75	76	78	80	82	84	85	86
Chichester G.P.																
Est. no. pairs	15	14	21	18	16	23	21	18	18	18	15	12	7	10	8	7
Est. no. young	1	10	11	5	25	21	14	16	9	5	2	7	2	4	4	3
Weir Wood Res.																
Est. no. pairs	0	2	1	2	4	6	3	10	15	—	8	16	35	20	15	20
Est. no. young	0	3	0	3	3	1	0	5	4	—	4	9	3	2	21	3

It would be difficult to overestimate the importance of the reservoirs for the species. In winter their size keeps them ice-free for much longer than other waters and many birds, which would otherwise have to move to the coast, are able to stay at these hospitable sites in all except the most severe weather. In addition the reservoirs are used by non-breeders and failed breeders, which often results in the very large gatherings mentioned previously. Breeding has been attempted at most of the reservoirs, as soon as suitable nesting habitat has developed, but it is only in recent years that a few sites have assumed such importance. Weir Wood, in particular, attracts large numbers of potential breeders (Table 11) and colonial breeding, within the nature reserve area, has become an annual feature since 1980. Bewl Water and Ardingly should assume greater importance in the future as the emergent vegetation becomes established, and the role of Darwell, where exceptionally 11 and 9 pairs raised 16 and 20 young in 1985 and 1986, respectively, should not be underestimated.

If considered in isolation, the numbers at the reservoirs can be rather misleading. It has to be remembered that the annual breeding success at these sites varies from very good to very bad and on average is less good than at the traditional lakes. Receding water levels in summer frequently leave nests high and dry at the shallow ends, which are the areas normally designated as nature reserves. However, in wet summers the water is maintained at a constant level, thereby providing suitable conditions for late first clutches and replacement clutches. For example, at Bewl Water in 1986 14 pairs raised 24 young, which was by far the best breeding success ever recorded there. This is an opportunity which is denied to pairs at many of the traditional sites which, under the same conditions, might be subject to flooding or are exposed to increased human pressure with the beginning of the coarse fishing season. Thus although breeding success at the reservoirs is often low, the numbers of pairs involved are now so high that the young reared contribute significantly to the overall success of the species.

In several parts of lowland Britain the species now breeds on rivers, canals and drains (Hughes and Bacon, 1980). Very few suitable sites exist in Sussex, and none has been used to date and will probably not be used whilst new sites continue

to become available at the reservoirs. Nevertheless in 1986 birds were reported at two suitable sites, on the rivers Arun and Ouse, for a few days in early spring.

The Great Crested Grebe has considerable aesthetic value and its sustained presence at any site, particularly if breeding, indicates that a water is biologically well balanced and the habitat is well managed. The species made a comeback from near extinction in Britain at the turn of the century, when it was hunted to satisfy the demands of the plumage trade, as a result of more enlightened human attitudes. Now as a result of exploitation of newly created inland waters, its numbers in Sussex, as in other parts of Britain, are higher than they have ever been in modern times. Nevertheless its future is now even more dependent on a sensible balance being struck between the requirements for nature conservation and leisure pursuits at inland waters, both large and small.

SUMMARY

During the years 1962-86 the Great Crested Grebe has been recorded at 66 inland sites in Sussex and details have been given for 50 where breeding has been proven at least once. A census in early June 1985 found an estimated 190 adults which represents an increase of approximately 88% since 1965. Numbers using the traditional habitats and the gravel pits have remained remarkably constant over the last 20 years and the increase in population can be attributed to the availability of new habitat provided by the reservoirs. On the basis of four counts, undertaken between April and August 1985, it is concluded that the numbers of adults in the county remain steady throughout the breeding season, though a redistribution takes place in mid-July with many birds from smaller waters and the gravel pits moving to the reservoirs and coastal waters respectively. Overall annual average breeding success has varied greatly from 0.35 to 1.24 per pair, with a mean of 0.78. In most years the mean productivity at the traditional (lake) sites (1.05) has been better than at the gravel pits (0.64) or the reservoirs (0.67). Breeding success at the reservoirs has been particularly variable, but as this habitat supports at least 45% of the total population it has now assumed major importance. Numbers in Sussex are now higher than they have ever been in modern times; nevertheless, the continued success of the species will depend on a sensible balance being struck between the requirements for conservation and leisure pursuits on both large and small inland waters.

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REFERENCES

Harrison, T. H. and Hollom, P. A. D. 1932. The Great Crested Grebe Enquiry, 1931. *Brit. Birds* 26: 62-92, 102-131, 142-155, 174-195.
 Hughes, S. W. M. 1976. The 1975 census of the Great Crested Grebe in Sussex. *Sussex Bird Report* 28: 80-82.
 Hughes, S. W. M., Bacon, P. and Flegg, J. J. M. 1979. The 1975 census of the Great Crested Grebe in Britain. *Bird Study* 26: 213-226.
 Hughes, S. W. M. and Bacon, P. 1980. Great Crested Grebes breeding on rivers. *Brit. Birds* 73: 349.
 Hughes, S. W. M. 1982a. Great Crested Grebe. In *CRC Handbook of Census Methods for Terrestrial Vertebrates* (ed. Davis, D. E.). CRC Press, Boca Raton, Florida.
 Hughes, S. W. M. 1982b. Great Crested Grebes at Weir Wood Reservoir in 1981. *Sussex Ornithological Society Newsletter* No. 83.
 Prestt, I. and Mills, D. H. 1966. A census of the Great Crested Grebe in Britain 1965. *Bird Study* 13: 163-203.
 Simmons, K. E. L. 1974. Adaptations in the reproductive biology of the Great Crested Grebe. *Brit. Birds* 67: 413-437.
 Walpole-Bond, J. 1938. *A History of Sussex Birds*. Witherby, London.

APPENDIX 1. BREEDING SITES IN SUSSEX (1962-86)

Key: Cat. 1 — Regular breeding sites; Cat. 2 — Irregular breeding sites; Cat. 3 — Occasional breeding sites.

Manhood End	SU 835012	1 pr bred in 1962 and 1964. Site developed as marina in 1967.
Chichester G.P.	SU 874035 SU 884052	Cat. 1 — 15 prs in 1962 reduced to 10 after 1962-63 winter. Population increased to c.20 prs and reached max. 23 prs in 1970; thereafter a gradual decline with 6-10 prs more typical in 1980's.
Burton Mill Pond	SU 979179	Cat. 1 — 1 pr has bred annually; second pr occasionally (4 years).
Chingford Pond	SU 965171	Cat. 1 — 1 pr bred annually until water level lowered in 1983. Breeding not attempted since, probably due to lack of suitable nest sites.
Lurgashall Mill Pond	SU 935265	Cat. 1 — 1 pr has bred almost annually; second pair occasionally (5 years).
Petworth Park Main Lake	SU 964237	Cat. 1 — 1-2 prs bred annually in 1960's; usually 3 prs in the 1970's but 4 prs in 1978; 3 prs in 1980, 1 pr in 1981. Lake partly drained in 1982. 1 pr in 1983 but more recently 2 prs annually.
Petworth Park Polish Lake	SU 970220	Cat. 3 — 1 pr bred in 1967 and 1980. Breeding has probably been attempted in 4 other years.
Shillinglee Mill Pond	SU 968310	Cat. 1 — 1 pr bred annually in 1960's; more usually 2 prs in 1970's and 1980's but 3 prs in 1979 and 1986.
Parham Park	TQ 057145	Cat. 3 — 1 pr bred in 1970 and 1971. Also present spring 1973.
Loxwood Hills Pond	TQ 029313	Cat. 3 — No information prior to 1980 when 1 pr bred (outcome unknown). Breeding possibly attempted in 1983. Also present spring 1985.
Birchen Bridge Pond	TQ 195192	Cat. 3 — 1 pr bred 1972. Also present in spring in 4 other years.
Newells Pond	TQ 209270	Cat. 3 — 1 pr bred in 1972 but unsuccessfully. Not recorded in any other year since.
Knepp Lake	TQ 158214	Cat. 1 — 2 prs have bred in most years (only occasionally a single pr) but 3 prs in 5 years.
Warnham Mill Pond	TQ 170325	Cat. 1 — 1-2 prs bred annually until 1974; thereafter 1 pr until 2 prs in 1984, 3 prs 1985 and 2 prs 1986. Young lost when pond drained in 1971.
Pond Lye	TQ 289214	Cat. 1 — 1 pr bred almost annually; second pr occasionally (2 years).
Slaugham Mill Pond	TQ 256276	Cat. 2 — 1 pr has bred, but not annually; second pr occasionally (2 years).

Slaugham Pond	TQ 249281	Cat. 3 — 1 pr bred 1979 (outcome unknown). Breeding possibly attempted in 1972, 1983 and 1985.
Hammer Pond	TQ 220290	Cat. 2 — 1 pr bred 1967-69 inclusive and 1972. Breeding possibly attempted in 1962 and 1965.
Bolney Pond	TQ 264223	Cat. 3 — 1 pr bred 1974 (outcome unknown). Not recorded in any other year.
Hawkins Pond	TQ 216292	Cat. 3 — 1 pr bred 1966. Breeding possibly attempted in 1968.
White Vane Pond	TQ 211315	Cat. 3 — 1 pr possibly bred 1962 and 1965. Breeding proven 1968 and 1969 and present in spring 1967, 1970 and 1972.
Ifield Mill Pond	TQ 245364	Cat. 2 — 1 pr bred 1963-65 inclusive and 1980. Few reports in the 1970's but probably bred in 1975 and present in 1986.
Gossops Green Pond	TQ 245360	Cat. 2 — 1 pr bred in 1978, 1980 and 1983-85 inclusive. A second pr bred in 1986. Breeding possibly attempted in 1972 and 1979.
Tilgate Lake	TQ 288345	Cat. 2 — 1 pr bred in 1963, 1980, 1981 and 1985. Breeding possibly attempted in 1964, 1965, 1973, 1978, 1984 and 1986.
Buchan Hill	TQ 244345	Cat. 3 — 1 pr bred 1975. Not recorded in any other year.
Leonardslee	TQ 230252	Cat. 3 — 1 pr bred 1962. Not recorded in any other year.
Ardingly Res.	TQ 330295	Cat. 1 — 1 pr attempted to breed 1979. 1-2 prs have bred annually since 1983 although 9 prs present 1984.
Horsted Keynes Mill Pond	TQ 382289	Cat. 1 — 1 pr has bred almost annually. Absent 1965 and 1983.
Horsted Keynes Hammer Pond	TQ 385292	Cat. 1 — 1 pr has bred almost annually. Absent 1985.
Birch Grove	TQ 393297	Cat. 3 — 1 pr bred 1983 and 1985 (outcome unknown).
Lindfield Pond	TQ 384227	Cat. 3 — 1 pr attempted to breed 1962. Breeding proven 1972 (outcome unknown).
Weir Wood Res.	TQ 395348	Cat. 1 — Breeding first attempted 1963. Gradual increase in numbers to 11 prs 1971 and 22 prs 1981; 35 prs in 1982 probably exceptional. Breeds colonially in nature reserve area.
Balcombe Lake	TQ 316311	Cat. 1 — 1 pr has bred annually; occasionally a second pr (5 years).
Fen Place Mill	TQ 361366	Cat. 3 — 1 pr bred 1975 (outcome unknown). Breeding possibly attempted in 1982.
Crabbet Park	TQ 308374	Cat. 2 — 1 pr bred 1985. No regular access and although absent in 1965 and 1975, information received suggests that breeding has occurred irregularly.
Cuttinglye	TQ 347393	Cat. 2 — 1 pr bred 1968 and 1971; breeding may have been attempted in 1969, 1970, 1972, 1973 and 1984.
Rowfant	TQ 316376	Cat. 2 — 1 pr bred 1967 and 1972. Also present in spring 1969 and 1970.
Maresfield	TQ 463299	Cat. 2 — 1 pr bred 1962 and 1970-74 inclusive. Not recorded in any other year.
Sheffield Park	TQ 417296	Cat. 3 — 1 pr bred in 1975 and 1976. Not recorded in any other year.
Eridge Park	TQ 565349	Cat. 1 — 1 pr has bred annually with possible gap of 4 years in early 1970's. A second pr present in 1986.
Crumbles G.P.	TQ 637023	Cat. 1 — 1 pr has bred annually since 1978; second pr bred in 1979 and 1985.
Wadhurst Lake	TQ 635280	Cat. 2 — 1 pr bred or has probably bred in 7 years; occasionally a second pr (4 years). 4 prs in 1962 and 1969.
Bewl Water	TQ 680330	Cat. 1 — 1 pr first bred 1976. Numbers increased steadily to 7 prs 1980 and 14 prs 1985 and 1986.
Bayham	TQ 637367	Cat. 3 — Breeding possibly attempted in 1963; 1 pr bred in 1967 (outcome unknown). Not recorded in any other year.
Powdermill House Darwell Res.	TQ 742147 TQ 715212	Cat. 3 — 1 pr bred 1962. Not recorded in any other year.
Powdermill Res.	TQ 800195	Cat. 1 — At least 1 pr has bred annually but 2 prs have bred in 3 years and 3 prs in 2 years; 11 prs 1985 and 9 prs 1986 were exceptional years.
Rye Harbour SSSI	TQ 930180	Cat. 1 — 1 pr has bred annually; second pr occasionally (3 years).
Pett Pools	TQ 905146	Cat. 1 — 2 prs bred annually up to 1976, occasionally 3-4 prs (4 years); since 1977 a minimum of 3 prs and usually 4 prs annually.
Moneyppenny Pit	TQ 946207	Cat. 1 — 1-3 prs have bred annually except in 1962-64 and 1972-73. Cat. 3 — 1 pr bred 1962. Not recorded in any other year.

APPENDIX 2. NON-BREEDING SITES IN SUSSEX (1962-86)

Estuarine and open coastal sites (e.g. Brooklands and Widewater) have been excluded from the following list.

Forest Mere*	SU 820299	Milton Mount*	TQ 295385
Cooks Farm, Milland*	SU 832263	Balcombe Mill	TQ 318305
River Park Farm*	SU 940250	Buckhurst Park	TQ 496348
Moor Farm, Petworth	SU 988236	Barcombe Res.	TQ 428142
Shillinglee (North Pond)	SU 962324	Arlington Res.	TQ 535075
Burton Park	SU 969178	Pitdown Pond	TQ 471235
Bignor Park	SU 990156	Berwick Pond	TQ 525076
Storrington Sand Pit	TQ 111141	Northpoint G.P.	TQ 936198

* Breeding suspected on one occasion.

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Note: Feral mink raiding Sand Martin colony

On 22 June 1986 I visited a small colony of Sand Martins (*Riparia riparia*) in a steep sandy bank of a broad main drainage channel near East Guldeford. About 25 Sand Martins were noisily fluttering about the bank when I noticed an adult North American Mink (*Mustela vison*) backing out of a nest hole. It scrambled across to the next one and climbed in, almost disappearing. This was repeated quite deliberately through the ten or so holes of the colony. I tried to stop the animal by shouting and even throwing things at it, but to no avail, although it kept looking at me across the water.

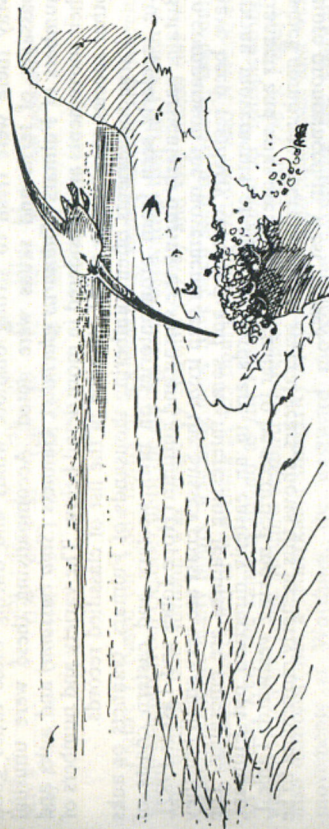
Although I did not see the mink pull anything out of the holes, I noticed five dead fully-grown Sand Martins on a ledge just above the waterline, and a sixth floating below them. Eventually the mink scrambled down to these corpses, took one in its jaws and bounded off with it over the bank.

The local farmer told me later that this animal was an adult from one of three families on his farm. Its mate and their seven young (four of which he shot) had frequently raided the colony. The other litters were of five and six young, all on a farm of perhaps 2 sq. km.

An expanded account, with references to British and American literature, has been submitted to *British Birds*.

P. F. Bonham

(Short notes, as well as papers, are welcome and should be sent to the Editor or any member of the Scientific Committee.)



MOVEMENTS OF FULMARS, GANNETS AND AUKS OBSERVED FROM THE SUSSEX COAST, WITH PARTICULAR REFERENCE TO THE SPRING OF 1986

by J. A. Newtham

INTRODUCTION

The spring passage of seabirds and waders along the Sussex coastline has been regularly watched and documented in the Sussex Bird Reports. Between 1959 and the mid 1960's most of the sea-watching was done at Selsey Bill and the results were published in an annual report (Marr and Sheldon 1959-1965). Meanwhile observations had begun at Beachy Head but the watching there increased in 1965 when several of the Selsey observers changed their allegiance to help in the intensive study of this headland. Throughout the 1970's Beachy Head provided most of the county's information about the movements of seabirds, and the results of the prolonged systematic watching of the spring seabird passage appeared in the Sussex Bird Reports, an analysis being presented by Cooper (1976). For many years ornithologists living in the coastal towns had sporadically recorded seabird movements from their local beaches but towards the end of the 1970's more regular sea-watching started in the centre of the county, mainly at Brighton, Hove and Worthing; some of the results have been presented in more detail in the Shoreham District Ornithological Society Reports (1976-1986). At the same time there was a resurgence in the watching at Selsey Bill where the results were coordinated and again published in a series of five annual reports (Janman and Mitchell 1979-1983).

During the spring of 1986 a sea-watching log was kept at the usual sites and the hours of observation are shown below. Clearly during that spring the coverage in West Sussex was greater than at the main East Sussex sites.

Total hours watched (March-May)

Selsey Bill 233

Worthing 389

Brighton Marina Beachy Head 88

The spring of 1986 will not be remembered as a season of outstanding coastal passage; during most of April and May either northerly or westerly winds prevailed, producing conditions far from ideal for spring sea-watching off the Sussex coast. However, for a brief period in mid-April and during the first days of May there were fresh to strong onshore winds and during these times good passages of terns and skuas were noted. Accompanying these were unusual numbers of Fulmars (*Fulmarus glacialis*), Gannets (*Sula bassana*) and auks and their movements are considered in more detail below. The variety and numbers of other species seen are, as usual, detailed in the list of classified records.

Large movements often numbering thousands of Fulmars, Gannets or auks are regularly seen from promontories on both western and eastern coasts of Britain, particularly during the spring and autumn (Hope Jones and Tasker 1982). In comparison the movements seen from the Sussex coast are very small but they have been regularly recorded and some interesting features are emerging. The spring movements of most seabirds are in an easterly direction but Fulmars, Gannets and auks are the most regular to be recorded moving westward. Table 1, which combines information for several years, shows this westerly movement to be more pronounced in West Sussex.

TABLE 1. TOTAL NUMBERS AND PERCENTAGE OF WESTERLY MOVEMENT NOTED AT 4 COASTAL STATIONS DURING SPRING

	Selsey Bill 1979-86		Worthing 1978-86		Brighton Marina 1981-86		Beachy Head 1980-86	
	Total	%W	Total	%W	Total	%W	Total	%W
Fulmar	2861	82%	3396	55%	735	15%	not recorded	
Gannet	2594	62%	2796	47%	1036	26%	1940	12%
Auk sp.	529	64%	544	42%	277	4%	1366	1%

This pattern is reiterated in Tables 2-4 which show the peak days for these species during the spring of 1986. Clearly these movements are more complex at this time of year than a regular migration through the English Channel to breeding grounds in northern Europe.

FULMAR

The Fulmar differs from the others in that it nests in Sussex. Fulmars were first seen on the cliffs in 1950 and breeding was first proved in 1976 (Shrubbs 1979). This population has steadily increased with 106 pairs breeding in 1983-84 (Prater 1985).

Although sea-watchers at Beachy Head cannot confidently separate Fulmars passing the headland from those breeding on the nearby cliffs, the observations suggest there is virtually no visible movement past the headland (R. D. M. Edgar, pers. comm.). Both Tables 1 and 2 show that nearly all the Fulmars passing Brighton are heading eastward towards the nearby breeding cliffs whereas nearly all the Selsey birds are moving westward and therefore, like the Brighton birds, towards the nearest breeding sites on the Isle of Wight. Worthing, placed more centrally, shows a more even distribution of movements in both directions, as expected, and therefore there is no obvious movement of Fulmars in either direction past the Sussex coast. Movements noted in spring undoubtedly involve a number of birds prospecting for nest sites: for example, they are regularly noted at Worthing inspecting shoreline blocks of flats. Furthermore there are annual records in the Sussex Bird Reports of many Fulmars back near their cliff nesting sites in late December and through the rest of the winter, yet at both Selsey and Worthing Fulmars are scarce until March. This is clearly shown in Fig. 1 which shows the rate of passage of Fulmars passing Worthing for each month during the year.

TABLE 2. NUMBERS OF FULMARS SEEN AT 3 COASTAL SITES ON 3 DATES IN SPRING 1986 (hours watched in brackets)

	Selsey Bill		Worthing		Brighton Marina		Beachy Head	
	East	West	East	West	East	West	East	West
April 26	4	42	17	22	17	17	(1)	12
May 4	9	(13)	69	82	(14)	48	(2)	6
May 17	5	(15)	27	10	(13)	6	15	(3)

Figure 1, based on 3,865 hours of sea-watching, shows clearly the scarcity which extends from October until the spring. The observation that the Fulmar is a rare bird in late autumn was made by Shrubbs (1979) and this status has not altered. Despite many hours' watching none have been seen at Selsey, and only one has been recorded at Worthing in 453 hours during October and November. In nearby Kent the same is found as the Fulmar is described as 'conspicuously absent' from the large autumn seabird movements (Taylor *et al.* 1981). Figure 1 also demonstrates a remarkable similarity in the pattern for both east and west movements at Worthing, the westward movements exceeding the eastward throughout the year. The plot shows clearly that Fulmars are most numerous during the spring and early summer and that a small mainly westward movement occurs in August.

At all seasons Fulmars are usually noted in singles or small groups of two or three individuals and are seen in the largest numbers in conditions of strong onshore winds. However, during the spring at all sites they can be seen flapping lazily by in calm conditions. The numbers seen at Selsey, Worthing and Brighton are comparable with records of about one bird per hour watched. In 1986 the spring rates of passage exceeded 2 birds per hour and this is shown in Fig. 2 which compares the passage rates for each spring at Worthing since 1978. Although there are marked variations from year to year, the basic trend, as one would expect for a species whose population is increasing, is upward.

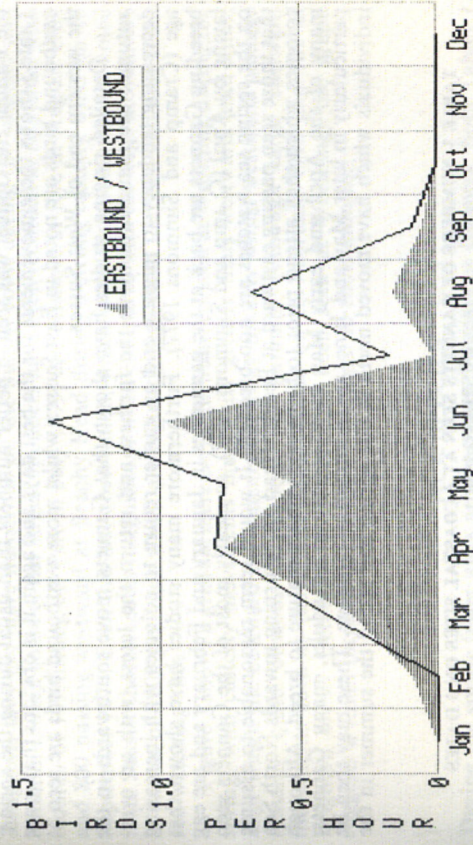


Fig. 1. Rates of eastward and westward passage of Fulmars in each month at Worthing (1978-1986).

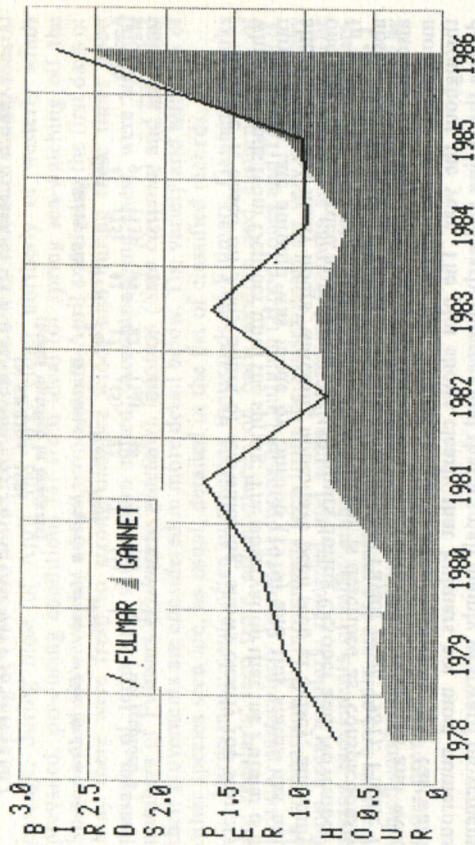


Fig. 2. Numbers of Gannets and Fulmars noted in each hour of observation at Worthing during April and May in each year (1978-1986).

GANNET

Figure 2 also shows a steady increase in the numbers of Gannets noted during the spring. This likewise is a thriving species with the nearest colonies in the Channel Islands and North Brittany to the west and on the Yorkshire cliffs to the east. Like the Fulmar the Gannet was seen in better numbers than usual during the spring. Table 3 shows these movements for the best days and again it is obvious that more eastbound birds are noted in East Sussex whilst more westbound birds are seen at the western end of West Sussex.

Detailed ringing studies have shown that Gannets move southwards in the autumn; the immatures move the furthest and return the latest, with an ever-decreasing tendency to migrate and an earlier return to colonies with increasing age (Cramp and Simmons 1977). Furthermore many studies have shown that breeding Gannets are back at the ganneries in January and February and are egg laying by April (Cramp and Simmons 1977), so clearly most of the Gannets seen on the spring sea-watches are non-breeders. It would seem reasonable to assume that those seen passing eastward at Beachy Head are returning towards North Sea colonies which they attend prior to being sufficiently mature to breed. Although many of the April and early May birds appear to be adults, many Gannets, particularly in later May and June, are in immature plumage. These may then be individuals which have moved north in late spring and spend the summer in the

TABLE 3. NUMBERS OF GANNETS SEEN AT 4 COASTAL SITES ON 3 DATES IN SPRING 1986 (hours watched in brackets)

	Selsey Bill		Worthing		Brighton Marina		Beachy Head	
	East	West	East	West	East	West	East	West
May 4	10 (13)	—	173 (14)	5 (34)	2 (2)	300 (10)	—	—
May 7	4 (9)	67 (7)	18 (7)	33 (1)	7 (1)	55 (4.5)	—	—
May 10	— (4)	95 (7)	4 (7)	120 (1)	4 (1)	38 (7)	43 (7)	—

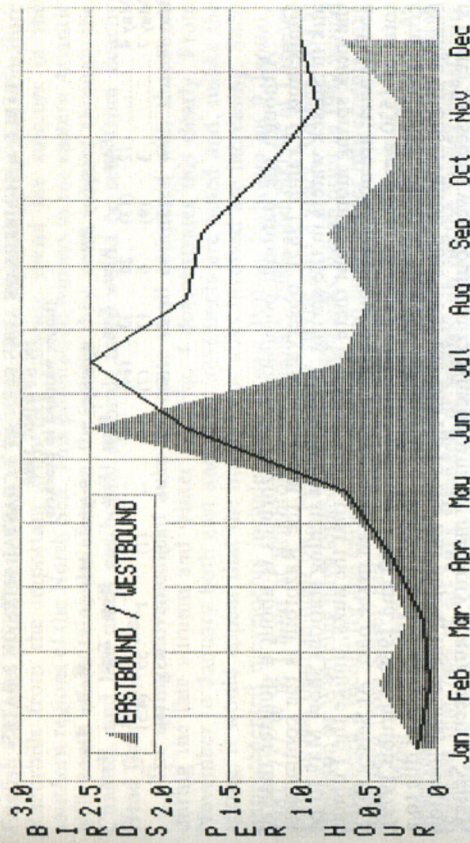


Fig. 3. Rates of eastward and westward passage of Gannets in each month at Worthing (1978-1986).

English Channel. It has been estimated that Gannets may travel up to 400 miles to feed (Cramp and Simmons 1977) and it is therefore possible that some of the westward movements may involve birds from colonies on the Channel Islands or North Brittany coast returning after fishing expeditions. The fact that most are seen in weather with strong onshore winds, particularly from the south-west, makes this possibility a little more plausible.

Although Gannets are regularly seen in good numbers during the spring, Fig. 3 suggests they are more numerous off the Sussex coast during the summer and autumn. Indeed some of the largest numbers have been recorded at this time, with records of 109 fishing off Pett in July 1979, 250 offshore at Rye in August 1984 and 800 passing westward at Beachy Head during a strong easterly wind on 18 September 1976. Even this last observation, which is the largest movement noted from Sussex shores, seems insignificant when compared with the huge movements in excess of 1000 per hour which are regularly seen from the west and east coast sea-watching sites.

Figure 3 shows a gradual increase in the numbers seen at Worthing during the spring, with easterly movements marginally greater than westward until June, after which the eastward movements fall away notably whilst westward passage remains quite obvious throughout the autumn. Although large eastward movements such as the 115 at Beachy Head on 26 February 1978 and 100 at Brighton on 27 December 1979 have not been seen at Worthing, the graph suggests a small increase in eastward movement in these months.

AUK SPECIES

During the spring fewer auks are seen than Fulmars or Gannets. Both Tables 1 and 4 show that Beachy Head is the best site for seeing spring auk movements. Most passage auks are not specifically identified, but the Puffin (*Fratercula arctica*), Little Auk (*Alle alle*) and Black Guillemot (*Cephus grylle*) are rare species in Sussex where auk movements are overwhelmingly of Razorbills (*Alca torda*) and Guillemots (*Uria aalge*).

TABLE 4. NUMBERS OF AUKS SEEN AT 4 COASTAL SITES ON 3 DATES IN SPRING 1986 (hours watched in brackets)

	Selsey Bill		Worthing		Brighton Marina		Beachy Head	
	East	West	East	West	East	West	East	West
May 4	12	(13)	20	10	—	(2)	175	(10)
May 7	3	(9)	6	4	—	(1)	55	(4.5)
May 18	—	(3)	2	(6)	—	(0)	45	(4)

Although the national population of Razorbills is about a quarter that of Guillemots (Cramp 1985), observations suggest the Razorbill is the commonest auk in Sussex waters in the spring. All the sea-watching stations show May to be the peak spring month, but there is a suggestion that the auks, unlike the Fulmar and Gannet, are now less numerous at this season than in the past. At Selsey Bill a total of 1530 were seen in April and May between 1960 and 1969 (Shrubbs 1979), compared with a total of only 529 for the past 8 years. This may be in part due to a change in observation post from the Bill tip to the Bill house; the former location is better for seeing westbound auks which form the majority of auks seen at Selsey, in contrast to Beachy Head where most are eastbound.

Both Guillemots and Razorbills ceased to breed in Sussex in the 19th century and now the nearest colonies are on the western side of the Isle of Wight and on the Dorset cliffs. These colonies, in keeping with most southern colonies, are declining in numbers (Sharrock 1976) and this may, in part, account for the decrease in observations, particularly from Selsey Bill. It is likely, however, that most of the auks observed from the Sussex coast are immature non-breeders, particularly if one considers that Razorbills are back at their breeding sites in March and Guillemots are even earlier, with virtually full colony occupancy by February (Cramp and Simmons 1977).

A detailed study of ringing recoveries (Mead 1974) shows auk movements to be highly complex, auks originating from various colonies being found in the

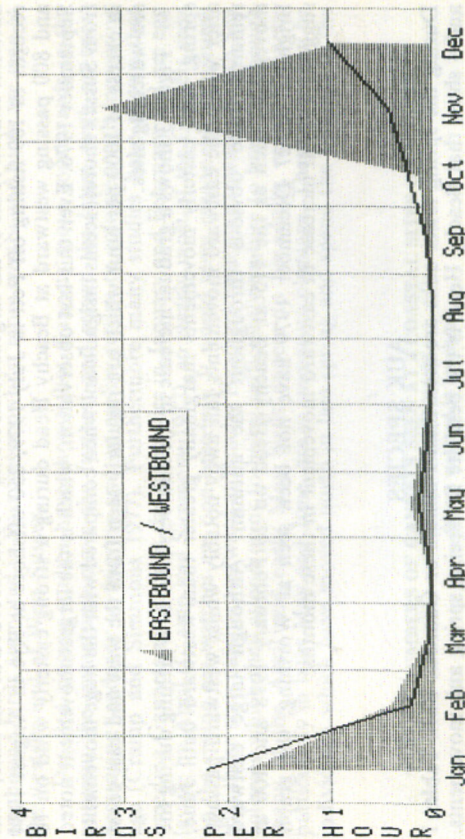


Fig. 4. Rates of eastward and westward passage of auks in each month at Worthing (1978-1986).

English Channel at different times of the year. This study suggests that immature Razorbills from the important Irish Sea colonies spend the summer in the southern regions of the North Sea. This population winters in the eastern Atlantic well south of Britain; therefore in the spring they need to pass through the Channel, and like many eastbound seabirds more would be seen from Beachy Head than other sites.

The spring movements of auks are quite small compared with those seen during the late autumn and winter and Fig. 4 demonstrates this clearly. From November to January both east and west movements are noted and, unlike the spring, it would appear that the numbers of auks involved are increasing. Such unprecedented movements include 1200 E past Pett in 1½ hours on 9 January 1982, 737 W in 1 hour at Brighton on 19 January 1986, and 600 W at Langney Point in less than an hour on 2 February 1986. In the past 2 years, 3 other days at Brighton or Worthing have logged more than 500 auks, which prior to 1982 would have been a record for the county. Interestingly, no large winter movements have been seen from Selsey Bill.

Most of the auks identified in these large movements are Guillemots, an observation in agreement with the findings of the Beached Bird Survey which revealed that 74% of all auks stranded or washed up on the Sussex coast were Guillemots. Ringing recoveries of Guillemots (Mead 1974) suggest that immatures from some of the successful North Sea colonies, and both immatures and adults of some of the Irish Sea colonies, extend into the English Channel during the winter. It seems unlikely, however, that the increasing numbers observed from the Sussex coast in recent winters could be accounted for purely by an increase in the breeding population at certain colonies, without the influence of other factors yet unknown. Perhaps the most alarming aspect of this change is the possibility of a major accident in the busy shipping lanes of the English Channel, with increasing numbers of auks wintering in this area, a large oiling disaster would have marked effects on colonies far from the Sussex coast.

ACKNOWLEDGEMENTS

I would like to thank all the observers who have contributed to sea-watching logs, and especially to thank P. James for collating the records from Selsey, R. D. M. Edgar for collecting the observations from Beachy Head, and N. A. G. Lord for the information from Brighton Marina. Furthermore, both P. James and R. D. M. Edgar have offered valuable comments on the paper. The histograms have kindly been prepared by B. Clay.

REFERENCES

- Cooper, J. F. 1976. An analysis of the spring sea-watches at Beachy Head, Sussex. *Sussex Bird Report* 28: 56-66.
- Cramp, S. and Simmons, K. E. L. (eds). 1977. *The Birds of the Western Palearctic, Vol. 1*. Oxford University Press.
- Cramp, S. 1985. *The Birds of the Western Palearctic, Vol. 4*. Oxford University Press.
- Hope Jones, P. and Tasker, M. L. 1982. *Seabird Movements at Coastal Sites around Great Britain and Ireland 1978-1980*. Report to Nature Conservancy Council and Seabird Group, Aberdeen.
- Janman, C. R. and Mitchell, O., *Selsey Bill, West Sussex, Bird Reports* 1979-1983.
- Marr, B. A. E. and Sheldon, A. B., *The Selsey Bill, Sussex Reports* 1959-1965.
- Mead, C. J. 1974. The results of ringing auks in Britain and Ireland. *Bird Study* 21: 45-86.
- Prater, A. J. 1985. Breeding seabirds in Sussex. *Sussex Bird Report* 37: 65-71.
- Sharrock, J. T. R. 1976. *The Atlas of Breeding Birds in Britain and Ireland*. BTO, Tring.
- Shoreham District Ornithological Society. *Annual Reports* 1976-1986.
- Shrubbs, M. 1979. *The Birds of Sussex, their Present Status*. Phillimore, Chichester.
- Taylor, D. W., Davenport, D. L. and Flegg, J. J. M. 1981. *Birds of Kent*. Kent Ornithological Society.

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THE TIMING OF SISKIN MIGRATION THROUGH NORTH SUSSEX, SPRING 1986

by J. E. S. Cooper

INTRODUCTION

The Siskin (*Carduelis spinus*) is a migrant and winter visitor to Sussex (Shrubb, 1979), wintering principally in areas away from the coast, and especially near the northern border with Surrey/Hampshire (Lack, 1986). In late winter and early spring, Siskins occur in gardens feeding on peanuts, but on an irregular basis varying each year in numbers and timing. These occurrences began nationally in the mid-1960's and in Sussex about 1970 (Shrubb, 1979). In recent years, a few individuals have been observed summering in the county, suggesting possible imminent colonisation (Sx.B.R. 1985).

This delightful and confiding finch appears annually in my garden at East Grinstead, coming to peanut feeders in late winter. During the pre-migration period under study, Siskins were noted as the first species to arrive on the feeders each morning, appearing in small numbers at first light before the tit species and well before the seemingly tardy Greenfinch (*Carduelis chloris*). This early arrival probably indicated that the roost for some of the Siskins was not far distant. Siskins fed throughout the day until dusk.

Siskins, individually, were seen to be submissive to the more aggressive tit species and the much larger Greenfinch, but, providing adequate numbers of peanut feeders are made available, the more numerous Siskins will negate the dominance of the resident Blue Tit (*Parus caeruleus*). The numbers of Siskins seen feeding at any time rarely exceeded 12, although ringing studies showed a much larger population to be using the feeders throughout the day.

This short paper describes the results of observations made during my ringing studies of Siskins in spring 1986, and compares them with a previous study made during spring 1984.

METHOD

Within the 100 m² suburban garden study area, a single 9-metre mist-net was used to trap Siskins for the purpose of ringing studies. Peanuts in mesh containers were used as bait and netting occurred regularly on weekdays during 06.00-08.30, and at weekends to 17.00, weather permitting. All birds were aged, sexed and weighed to the nearest 0.1 g, using a Pesola balance. All weights used in the diagrams have been corrected to 07.00 using a factor of 0.1 g/hour weight addition (Cooper, 1985).

RESULTS

Apart from one adult male Siskin caught in early February, the influx started with five on 18 March, although they were not regular visitors to the garden until 28 March, thereafter being trapped in varying numbers until the last on 2 May. A histogram of mean numbers of birds trapped per day, both new and previously ringed, is shown in Fig. 1.

The comparable period for numbers of Siskins trapped in the same garden using identical methods during 1984 is shown also in Fig. 1.

A total of 133 Siskins were ringed during spring 1986, compared with 155 ringed in 1984, and the retrap numbers for both years are shown in Table 1.

Migration timing

From Fig. 1, it can be seen that Siskins were present during spring 1986 in substantial numbers, feeding in the garden between 26 March and 30 April (5

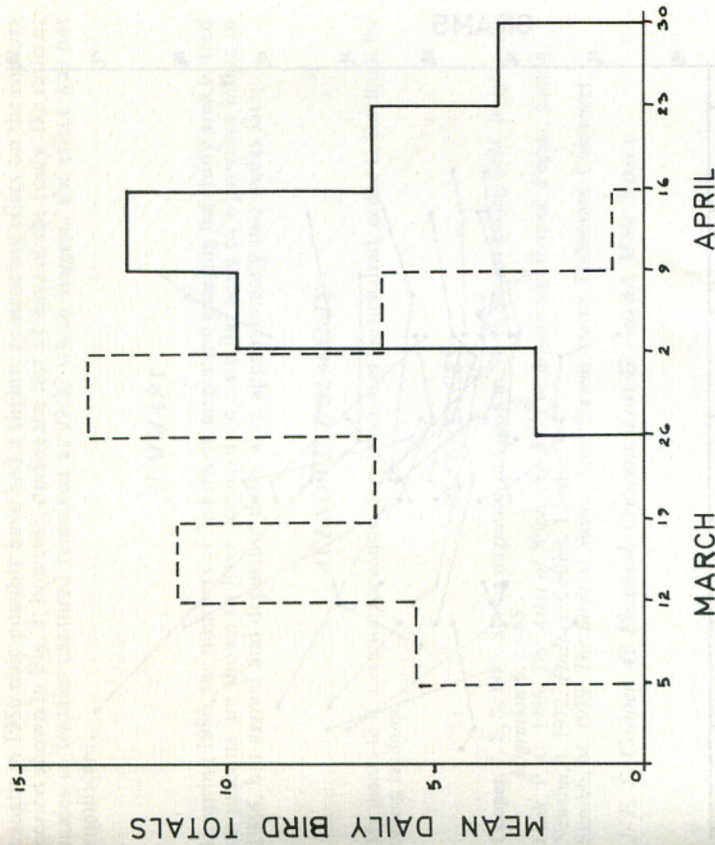


Fig. 1. Mean daily totals of Siskins handled, including retraps, per 7-day period. Continuous line denotes 1986 totals; broken line denotes 1984 totals.

weeks), with few seen or caught outside this period. The peak presence was on 12 April when 40 birds were caught. A direct comparison with 1984 shows principal numbers then occurred between 5 March and 9 April (5 weeks), with peaks on 17 and 31 March (27 and 26 birds caught, respectively).

From Fig. 2 it can be seen that the period of 'rapid weight gain' (i.e. the number of days when a bird increases its total weight at a rate greater than that required to combat normal losses through energy consumption, etc.) commenced between 4 and 9 April. Before that time, most of the trapped birds had been maintaining a fairly constant body weight. After 9 April, the weight gains were substantial and indicated an increase in fat reserves in readiness for long-distance migration. These rapid weight gains peaked on 24 April, after which fewer Siskins were trapped (Fig. 1), suggesting that most birds had acquired optimum fat reserves by this time and had journeyed forth. An indication of the length of this journey, and hence the value of stocking up on fat reserves utilising peanuts, is given from notification of one female Siskin found dead on the Bothnian coast of

TABLE 1. A COMPARISON OF SISKINS CAUGHT IN 1984 AND 1986

Year	No. ringed	No. retrapped once	No. retrapped again
1984	155 (101♂, 54♀)	72 (46%)	37 (24%)
1986	133 (60♂, 73♀)	58 (44%)	28 (20%)

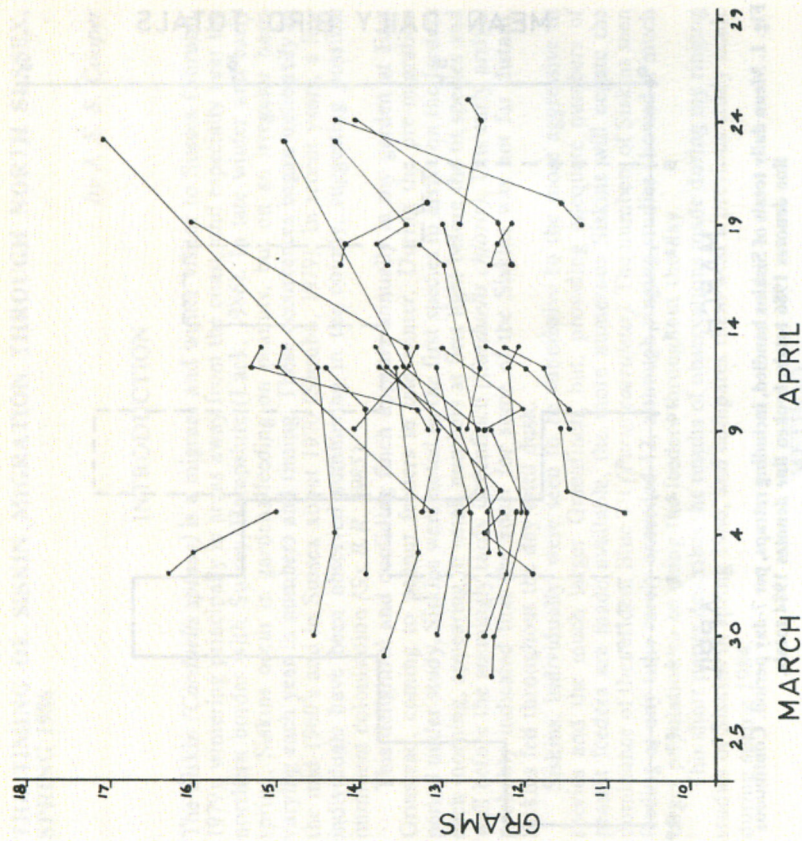


Fig. 2. Bird weights against recapture date (1986). Lines connecting points represent weights at each recapture date for individual birds.

Sweden in June 1986, having been ringed at East Grinstead in early April of the same year; the distance covered was some 1600 km.

It is notable that in spring 1985, only one Siskin, an adult male, was trapped in the same study area.

DISCUSSION

It is known from recapture data (Cooper, 1985) that at least one of the Siskins caught in 1984 was on its nesting ground in south-west Scotland by mid-April of the same year. From Fig. 1, it is unlikely that this timing sequence would be applicable to the 1986 breeding season, as many of the passage birds were still to be found in Sussex in mid-April. This may not, however, have been solely caused by the late arrival of spring weather in 1986 which delayed commencement of the breeding season for many other passerine species (pers. obs.), as Siskins' nesting is equally dependent on food availability (in the form of cone seeds) as on temperature (Newton, 1972).

It is known that females of many passerine species usually arrive at the breeding grounds some two weeks later than males; thus it seems likely that they leave the wintering area later also. The greater incidence (55%) of females being

caught in 1986 may possibly have had a slightly protracting effect on the capture period shown in Fig. 1; however, during the last 14 days of the study, the ratio of males to females captured remained at 29:32 which suggests the effect was not significant.

SUMMARY

In spring 1986, the numbers of Siskins on migration entering the study area to feed on peanuts are shown to have occurred on a similar scale to a previous influx in 1984, but arrival and departure dates were approximately two weeks later.

ACKNOWLEDGEMENTS

My thanks to R. Leverton for constructive criticism of the first draft, and to L. Catchpole for typing facilities.

REFERENCES

- Cooper, J. E. S. 1985. Spring migration of Siskin in North Sussex during 1984. *Ringing and Migration* 6: 61-65.
 Lack, P. C. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. Poyser, Calton.
 Newton, I. 1972. *Finches*. Collins, London.
 Shrubbs, M. 1979. *The Birds of Sussex, their Present Status*. Phillimore, Chichester.
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FERAL GREYLAG GEESE IN SUSSEX

by S. W. M. Hughes

In 1962 Richard Fitter, writing in *The Observer* newspaper (8th July), predicted that the Greylag Goose (*Anser anser*) might soon be breeding again in England as a result of introductions being made by the Wildfowlers' Association of Great Britain and Ireland (WAGBI). In the following year successful breeding took place in the Lake District and WAGBI continued its programme of introductions in several areas. By 1971 more than 1000 geese had been released (Harrison, 1973) and although WAGBI introductions ceased in the early 1970's, the introduced stock and other free-winged offspring from wildfowl collections formed local populations of feral geese, which by 1983 were estimated to total more than 3000 (Owen *et al.*, 1986). No introduction was made in Sussex and only in the last 10 years have feral Greylags become a regular feature in the county. This paper reviews the developments in Sussex in the context of events in neighbouring counties.

INTRODUCTIONS AND STATUS IN NEIGHBOURING COUNTIES

Kent

One of the earliest WAGBI initiatives was at the gravel pits reserve at Sevenoaks, in 1961, and further releases were made there in 1963 and 1964. These were to be the first of several introductions in various parts of the county, for example at the gravel pits at Dungeness in 1968 and at Westbere, in the Stour Valley, in 1969. In the late 1960's feral birds from the low countries were known to be visiting Kent and to encourage these movements a new reserve was established on the southern

banks of the Medway and introductions were made there in 1970 and 1973. The latter was of Belgian birds, of the pink-billed eastern race, in the hope that their cross-channel movements would encourage wild birds wintering on the Continent to be diverted to south-east England. Some of the introduced stock were recovered subsequently in Belgium, Holland and Denmark. A more detailed account of the releases in Kent, the last of which was on the Isle of Grain in 1976, has been provided by Taylor *et al.* (1981). The subsequent development of each flock has been documented in the *Kent Bird Report* and recent editions suggest that those adjacent to the Sussex border have increased substantially. For example, the flock in west Kent totalled 659 in September 1983 and that at Dungeness, after a very slow start, has now grown to approximately 80 birds.

Hampshire

Developments in Hampshire have been on a lesser scale. In 1963 a pair of pinioned birds were released, for ornamental purposes, on the Duke of Wellington's estate at Stratfield Saye (Clark, 1984). Free-flying young reared in 1964 and 1965 bred successfully and eventually the flock colonised new waters on the borders of north Hampshire, Surrey and Berkshire. Most geese in this area return to Stratfield Saye for the autumnal flocking and the *Hampshire Bird Report* for 1985 records numbers in excess of 300. The origin of a second flock based at Wherwell Priory and now spreading along the Test Valley is uncertain. A count in 1984 at Bransbury Common, where these birds spend much of the winter, totalled approximately 200. In 1974 a small flock (*ca.* 10) existed further west in the Avon Valley near Ringwood. These probably originated from a small flock of free-winged birds at the Game Conservancy Research Station at Fordingbridge, but nothing has been published on the fate of the Avon birds in recent years.

Surrey

No significant sporting or ornamental introduction has been made in Surrey. During the 1970's records were confined to one or two birds of unknown origin at widely scattered localities. The 1980's have seen a marked increase in records, mainly in the south-east and south-west of the county. However, feral geese also occur in suburban areas and now nest at Battersea Park in central London where, in July 1985, 20 pairs were present with 70+ young. Flocks of 20-30 birds are reported occasionally in south-east and north-west Surrey and there can be little doubt that these originate from the populations in west Kent and north Hampshire. A few pairs now breed at Buckland, Gatton, Hedgecourt and Holmthorpe and each year there are signs of increasing spring dispersal to potentially new breeding sites.

DEVELOPMENTS IN SUSSEX

As in Surrey, there has been no major introduction in Sussex but a steadily increasing number of records of feral birds since the early 1970's. The majority of these, by virtue of the localities involved, can be attributed to either developments in neighbouring counties or a small population resident in north-west Sussex and the Arun Valley.

South-east Sussex

The first undisputed feral birds in the Rye Harbour/North Point area were 4 reported in April 1969, i.e. the first spring after the introduction had been made at Dungeness. Single pairs, in April 1970 and March 1972, also provided further evidence of spring dispersal. The flock at Dungeness was slow to establish itself and the subsequent records at Rye reflect this. During the years 1973-83 most records were of non-breeding birds, some of which stayed for several weeks during the months April-August. Numbers rarely exceeded 8 but parties of 37 and 31 were recorded in May 1974 and June 1982 respectively. More recently most

TABLE 1. MAXIMUM WINTER (NOV.-FEB.) COUNTS OF FERAL GREYLAG GESE AT PRINCIPAL SITES IN SUSSEX

Rye SSSI/ Principal Site	1975/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
North Point	14	1	—	11	12	6	22	6	22	6	5	13
Arun Valley	2	9	6	12	32	19	24	20	36	21	21	21
Bewl Water	—	—	—	2	3	5	2	2	2	11	7	1
Weir Wood	—	—	—	17	15	9	15	23	30	16	2	2

records have been for the winter months. Numbers have only rarely reached double figures and the birds have usually been associated with the local flock of Canada Geese (*Branta canadensis*).

The recent decline in numbers in the Rye area may be due to the increased utilisation of the gravel pits at Scotney Court which are just 5 km from the Dungeness reserve and lie partly in Sussex and partly in Kent. Breeding now occurs at Scotney and 8 and 12 young were reported in 1984 and 1985 respectively. Elsewhere in the south-eastern corner of the county small parties, sometimes reaching double figures, have been reported from Pett Level and more rarely one or two birds have reached Crowhurst and Filsham. In spring 1981, two were seen in the Tillingham Valley and since 1982 a pair has been reported irregularly from Darwell Reservoir. Whilst the former may have dispersed from Rye, the latter were exceptionally tame and may have come from a wildfowl collection at Bodle Street, which contained 8 free-winged birds in May 1983.

North-east Sussex

Despite the increasing number of geese in west Kent since the early 1960's, there were only 4 records in north-east Sussex in the 1970's. A single bird was at Weir Wood Reservoir in February 1971 and two were seen there in January 1976, two at Pond Lye in May 1974 and one at Bewl Water, just a few months after it had been filled, in September 1979. This picture changed quite suddenly in 1980 when 17 became almost daily visitors to Weir Wood from January to May. The flock had declined to 3 by June and was absent thereafter. During this period geese started to visit Hedgecourt Lake on the Surrey/West Sussex border, 13 being recorded there in February 1980 and 35 in February 1982. Small parties have continued to visit Weir Wood (see Table 1) during the winter months, albeit rather irregularly. Each spring since 1980 one or two pairs have dispersed in the immediate vicinity of Weir Wood and there have also been records for Tilgate Park (1980 and 1981) and Ardingly Reservoir (1985), but there has been no evidence of attempted breeding at any of these sites.

As yet the numbers reported from Bewl Water have been small, usually less than 10. The first spring records were 7 in April 1980 and each year subsequently there have been 1 or 2 pairs, with breeding probably attempted in 1983 and 1984. Since 1983 spring dispersal has included waters at Hewkins Bridge, Groombridge, Withyham, Franchise and Hargate. At the last site, 4 young were reared in 1983 and this water, and that at Buckhurst Park, are now used by small numbers during the winter months. There can be no doubt that the developments in north-east Sussex can be attributed to the increased numbers and gradual breeding range expansion of the flock in west Kent, which has recently become established at Bough Beech Reservoir and Leigh. These sites are only a little more than 15 km from Weir Wood and Bewl Water respectively.

North-west Sussex and the Arun Valley

Throughout the early 1970's one or two Greylags were often reported associating with Canada Geese at Petworth Park and in the Arun Valley. These sightings aroused little interest as they were regarded as escapees from wildfowl collections (and some may have been) rather than feral birds which were potential colonists.

In spring 1974 two, seen on Amberley Wildbrooks, appeared paired but there was no suggestion of breeding. A similar situation prevailed in 1975 and 1976 with sightings from several localities in the Arun Valley. The first significant development was of a pair breeding in Petworth Park in 1977, after which there were many records of small parties of up to 8 birds in the valley. Enquiries were made concerning a possible introduction at Petworth but these proved negative. Breeding did not occur again at Petworth Park in either 1978 or 1979 and the family party was regarded as an isolated curiosity of little significance.

Since 1980 breeding has been reported annually in north-west Sussex. Four new sites have been identified, but never more than 3 sites have been used in any one year. With such a small population it has been possible to maintain accurate records of breeding pairs, breeding success, numbers of non-breeding birds and counts of autumn flocks. The last mentioned are shown in Table 2 and illustrate the fluctuating fortunes of the local birds. It will also be apparent from a comparison of the winter maxima (Table 1) and the autumnal counts (Table 2) that the local population is occasionally joined by visiting geese. Although there is no proof, such as exists in the form of ringing data for Canada Geese (Hughes and Watson, 1986), it seems probable that the visiting Greylags arrive from north Hampshire and that they are part of the feral flock based at Stratfield Saye. Also, with the benefit of hindsight, it seems probable that the Greylags seen in the Arun Valley in the 1970's, and the pair which first nested in Petworth Park in 1977, probably originated from the same source.

TABLE 2. AUTUMN NUMBERS OF FERAL GREYLAG GESE IN NORTH-WEST SUSSEX AND THE ARUN VALLEY

1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
8	6	10	14	16	24	14	18	12	11

Behaviour and breeding in north-west Sussex

The close association of Greylags with Canada Geese has been a regular feature in north-west Sussex as elsewhere in the county. However, as the number of Greylags has increased the small flock so formed has developed its independence and its integrity has usually been maintained, even when feeding or flying in the company of large numbers of Canada Geese. Sometimes the flock has existed as a completely separate entity and fed quite independent of other geese. It seems that independence requires the flock to be of a critical size, of perhaps 10-12 birds, when it no longer needs the added protection provided by the Canada Geese.

Systematic observations throughout the year have shown that this population spends much of its time either in the relative safety of Petworth Park or on the levels between Amberley and Pulborough, with the STNC reserve at Waltham Brooks being particularly favoured. Surprisingly few are noted elsewhere, but they occasionally follow the pattern of local movements established by the Canada Geese and have been reported from Arundel in the south and Knepp, Warnham and Lurgashall in the north.

The first record of breeding at Petworth Park was of a pair nesting on a very small island in the midst of the colonial nesting population of Canada Geese. The young goslings were attacked by their larger neighbours and not surprisingly were kept well away from the creche of young Canadas. Nesting at Lurgashall and Waltham Brooks has also been near Canadas. At Waltham Brooks a sitting female suffered constant harassment and had the nape of her head pecked bald. However, at other breeding sites, e.g. Parham Park and Lodsworth, there has been less pressure from Canadas but the sites have been much more vulnerable to human disturbance. Details of the breeding localities, the years in which they have been occupied and breeding success are given in Table 3. Pairs have also been seen prospecting for nest sites at Wisborough Green (in 1982), and at Shermanbury (1983). Breeding success has been extremely poor, with almost half of the nests

TABLE 3. BREEDING SITES AND NUMBER OF PAIRS OF FERAL GREYLAG GESE IN NORTH-WEST SUSSEX (young reared in brackets)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Petworth Park	1(5)			1(2)	1(4)				2(0)	
Parham Park									1(0)	
Lurgashall						1(0)				
Waltham Brooks						1(4)	1(8)	2(0.0)		2(0.8)
Lodsworth								1(3)	1(0)	

failing, and even where broods have been reared the average productivity has only been 4.5 young per successful pair.

In spring and summer non-breeders usually select a quiet area in the Arun or western Rother Valleys and lead a very sedentary, and for the most part independent, existence but they sometimes attract small parties of non-breeding Canada Geese. Independence has also been a feature of the autumn flocking. For example, in August 1981, the local population of 16 used the Polish pond in Petworth Park whilst 500+ Canada Geese occupied the main lake.

DISCUSSION

Most introductions of Greylag Geese in Britain have prospered but the flocks have often been slow to establish themselves and to increase their breeding range, possibly due to competition with Canada Geese. The developments now occurring in north-east and south-east Sussex can be attributed to the local expansion of the wintering and breeding ranges of the flocks in west and south Kent. In contrast the small population now resident in north-west Sussex and the Arun Valley seems to have been established from a more distant opportunistic colonisation. The viability of this new population must still be rather doubtful as it has yet to find a site where it can achieve good breeding success in most years. One factor in its favour is the possibility of acquiring new recruits from visiting winter flocks and there is also a chance that free-winged birds from ornamental introductions, that have appeared recently in the Adur Valley (1985) and at Broadbridge Heath near Horsham (1985), may link up with the feral birds. In July 1985 the former numbered 9 and by February 1987 the flock at the latter site had increased to 23.

Winter visitors to the Arun Valley can be expected to increase if the population in north Hampshire continues to grow. However, it should be noted that in 1985, for the first time, all nesting at Stratfield Saye was controlled and no young were reared. Both Weir Wood and Bewl Water offer considerable extra potential for the expanding west Kent flock and in the long term these waters could become bases for extensive colonisation of both north-west and east Sussex, assuming that the species can find an ecological niche not filled by Canada Geese, as it must have done in Kent. In the short term it seems unlikely that there will be any dramatic change in breeding status, particularly in West Sussex, unless some as yet unforeseen new factor takes effect which significantly changes the habits or success of the existing population.

The appearance of a flock of 35, presumed feral birds, in the western harbours and along the West Sussex coast in 1985, might be the start of longer distance winter movements by geese from north Hampshire. It is possible that they were driven out in search of food as a result of a combination of severe weather and the large numbers of feral geese (now of four species) wintering in north Hampshire. Previous records of feral Greylags in the extreme west had been of single, or sometimes two, birds in Paghram Harbour, at Chichester G.P. or Aldsworth. These may have been wanderers from the Hampshire Test or Avon flocks and one or two may have been transported to the area with Canada Geese. A flock of 9 in the area in December 1982 had been exceptional.

The Society's files contain several other interesting records which, on account of locality or date, or both, do not fit the normal pattern of records of feral geese.

Some are winter records, often from the Cuckmere, Glynde and Pevensy complex, e.g. 65 at Glynde in December 1982, and the geese are often described as being very wild. These records could relate to cold weather movements of feral stock from the low countries, where widespread introductions have been made since 1955 (Lippens, 1971), but equally they could be unusual movements of feral geese from anywhere in southern England.

Even more tantalising have been the occasional small autumn or spring party, appearing along the coast but staying for no more than a few hours in any locality. Many of these are likely to have been wild geese, but it remains a regrettable fact that as a result of the introductions, it is now impossible to identify true migrants using the west European flyway between the Baltic and Spain. Furthermore, it has been established that even these movements have been infiltrated by feral stock from the low countries (Ellwood *et al.*, 1971). The ethics of establishing feral flocks will long remain a subject of debate but feral Greylags are now a fact of life and in Sussex we are only just coming to terms with the consequences.

SUMMARY

Introductions of feral Greylag Geese in Kent and Hampshire are reviewed briefly. Winter numbers and breeding sites in East Sussex are considered in the context of the steadily increasing ranges of the local populations in west and south Kent. In contrast the small and relatively isolated population resident in north-west Sussex and the Arun Valley is attributed to a longer distance opportunistic colonisation by birds which had probably arrived in the area with visiting Canada Geese from north Hampshire. The breeding success and behaviour of this local population are described and doubts are expressed concerning its future viability. It is concluded that the status of feral Greylags in Sussex is unlikely to change dramatically in the short term. In the longer term Weir Wood and Bewl Water may become important as winter refuges for the expanding population in west Kent, and these waters may then become important as bases for more extensive local colonisation by breeding pairs. Occasionally parties appear in areas outside the normal ranges of the existing feral populations. These parties, which usually occur in winter, may conceivably be wild birds but are more likely to be feral birds of British or Continental origin. Also, as a consequence of introductions in Britain and Europe it is now impossible to differentiate between feral birds and wild migrants stopping off on the Sussex coast in spring and autumn as they travel the west European flyway.

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REFERENCES

- Clark, J. M. 1984. *Birds of the Hants/Surrey Border*. Hobby Books, Fleet.
 Ellwood, J., Harrison, J. G., Moulton, H. and Ruxton, J. 1971. Greylag Geese in south-east England. *WAGBI Annual Report* 1970-71: 61-62.
 Harrison, J. M. 1973. *A Wealth of Wildfowl* (second edition). Corgi, London.
 Hughes, S. W. M. and Watson, A. B. 1986. The distribution, status and movements of Sussex Canada Geese. *Sussex Bird Report* 38: 85-94.
 Lippens, Count Leon, 1971. Reintroducing the Greylag in Belgium. *WAGBI Annual Report* 1970-71: 62-66.
 Owen, M., Atkinson-Willes, G. L. and Salmon, D. G. 1986. *Wildfowl in Great Britain* (second edition). Cambridge University Press.
 Taylor, D. W., Davenport, D. L. and Flegg, J. J. M. 1981. *The Birds of Kent*. Kent Ornithological Society, Meopham.

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UNUSUAL RECORDS

All records of unusual species are considered by the Records Committee and it may be assumed that those published have been fully authenticated. Such reports should be submitted on separate sheets or on special forms available from the Recorder. Reports of rarities as defined by *British Birds* should be submitted on, or in the same format as, the forms obtainable from the Secretary to the Rarities Committee. The following list embodies those unusual species in Sussex for which descriptions are normally required. The Recorder may seek supportive evidence in the case of other species occurring under unusual circumstances. This list is not exclusive and any observer in doubt or needing advice on any species should send details accordingly:

- All divers (except Red- and Black-throated on the coast)
 Red-necked and Black-necked Grebes
 All shearwaters and petrels (except Fulmar)
 Shag (inland records only)
 Bittern
 Purple Heron
 White Stork
 Spoonbill
 Whooper Swan
 Bean and Pink-footed Geese
 Garganey
 Red-crested Pochard
 Ferruginous Duck
 Long-tailed Duck
 Honey Buzzard
 Red Kite
 Marsh and Montagu's Harriers
 Goshawk
 Rough-legged Buzzard
 Osprey
 Peregrine
 Quail
 Spotted Crane
 Corncrake
 Stone Curlew
 Kentish Plover
 Dotterel
 Temminck's Stint
 Pectoral Sandpiper
 Buff-breasted Sandpiper
 Phalaropes
 Pomarine Skua
 Long-tailed Skua
 Mediterranean and Sabine's Gulls
 Iceland and Glaucous Gulls
 Roseate Tern
 Black Guillemot
 Little Auk
 Puffin
 Hoopoe
 Wryneck
 Woodlark and Shore Lark
 Richard's, Tawny and Water Pipits
 Waxwing
 Dipper
 Bluethroat
 Warblers: Cetti's, Savi's, Aquatic, Marsh, Icterine, Melodious, Dartford, Barred, Yellow-browed
 Red-breasted Flycatcher
 Golden Oriole
 All shrikes
 Raven
 Screech Owl
 Scarlet Rosefinch
 Lapland, Cirl and Ortolan Bunting

In addition: all unusual races of Yellow Wagtail and Rock Pipit.