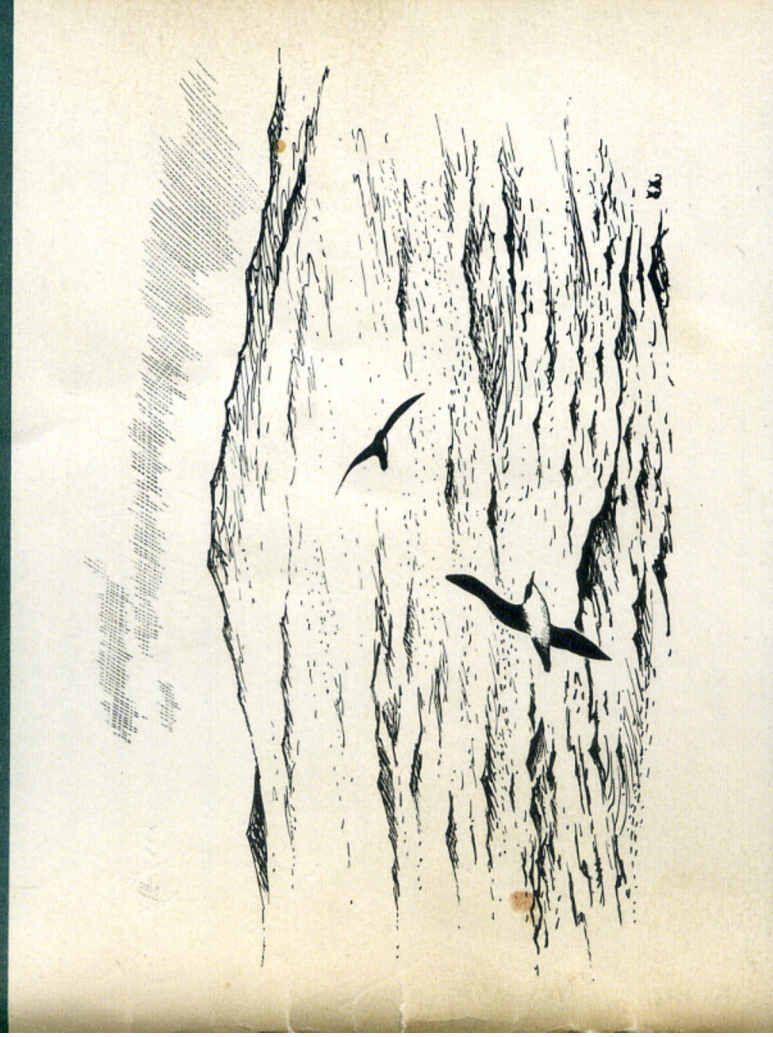


The Sussex Bird Report

No. 36 1983



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**THE SUSSEX BIRD REPORT
NUMBER THIRTY-SIX, 1983**

*Recorder: A. J. Prater
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Cover drawing of Manx Shearwaters by John Reaney

Text illustrations by John Reaney and D. W. Codd

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Society Surveys:

During 1983 the main Society study organised was a comprehensive survey of inland waters to collect information on their waterfowl populations and to carry out a Mute Swan census. Altogether 546 sites were visited and the organiser, S. W. M. Hughes, wishes to thank the 149 observers who took part; their names are marked W in the main contributors list on pages 2 and 3.

National Surveys:

Winter Atlas: 1983/84 was the third and last winter of this major survey, which has produced much very valuable data for Sussex. The county organisers were R. M. Lord and M. I. Banks.

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

Mute Swan: The Society contributed to the national census of breeding Mute Swans in 1983. The survey was organised by S. W. M. Hughes and Dr. A. B. Watson and the contributors are marked W in the main contributors list on pages 2 and 3.

Winter gull roosts: Comprehensive coverage was obtained for the fourth national decadal winter gull census in January 1983. The organiser was Dr. J. A. Newnham and the contributors are listed on pages 67-68.

Wildfowl counts: The counts in Sussex are organised by D. W. Codd, 12 Broome Close, Horsham, who has made them available to the Society for this Report. Counters and the areas covered were:

Adur Levels, P. J. Clay; Alexandra Park, Hastings, Miss C. A. Taylor; Amberley/Pulborough Brooks, S. W. M. Hughes, C. Walder *et al.*; Arun Valley, I. J. Wilson; Ardingly Res., R. N. Argent; Arlington Res., J. Willsher; Barcombe Mills Res., D. C. Lang; Bewl Bridge Res., P. C. Bance; Burton Ponds, J. M. McKelvie; Chichester GP, Miss C. Joyner; Chichester & Pagham Harbours, see estuary counts; Cuckmere Haven/Seven Sisters, P. J. Luffingham; Darwell Res., R. Harris; Glynde Levels, D. R. Codd; Knapp Lake, Mr. & Mrs. A. Simpson; Pett Level, P. Rouse; Petworth Park, D. Sneller; Powdermill Res., K. Blackman; Rye Harbour, R. C. Knight; Swanbourne Lake, D. R. Park; Shillinglee Lake & Lurgashall Mill Pond, Haslemere Nar. Inlet, Soc.; Weir Wood Res., M. Horsfall; WFT Arundel, A. Dawnay.

Estuary Counts: The BTO/RSPB/NCC 'Birds of Estuaries Enquiry' was carried out between August 1983 and March 1984. These counts were organised by A. J. Prater, 4 Church Street, Shoreham-by-Sea, West Sussex. Counters were:

J. Bacon, P. Baines, R. Batchelor, I. Blunt, P. F. Bonham, K. F. Burn, P. Clement, A. de Potier, R. D. M. Edgar, Mrs. J. H. M. Edom, F. J. Forbes, K. George, G. Gowlett, R. Greenhalf, M. P. Hall, S. G. Hamilton, S. P. Hitchings, R. C. Knight, O. and P. Laugharne, R. M. Lord, Mrs. G. D. Marriot, K. Maycock, C. Mayhead, L. Mayhead, C. E. Messer, M. H. Millner, L. Muirhead, K. Noble, D. Owen, D. A. Parmenter, T. W. Parmenter, P. Philpot, J. Reaney, R. J. Sandison, D. Smith, G. Smith, J. Weston, R. Williamson, J. Willsher, P. J. Wilson.

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 O. Mitchell and C. R. Janman, Beachy Head from J. F. Cooper and R. K. Haggard and Rye Harbour from R. C. Knight and also to R. Leverton for his continued work in maintaining detailed records of ringing in the county. We must also thank Miss J. V. Stacey for her continued and invaluable help in maintaining the Society's files, she shared the task this year with Mrs. M. Millner.

The Systematic List was compiled by A. J. Prater with help from the following, to whom go Tony's grateful thanks: R. D. M. Edgar (marshland birds); R. J. Fairbank (divers, scarcer migrants); C. J. Fox (sea ducks); J. W. Houghton (heathland birds); S. W. M. Hughes (inland wildfowl); P. James (terns, woodpeckers); C. R. Janman (auks, misc. sea-birds); R. Leverton (tits and associates); Dr. J. A. Newnham (gulls, Nightingale); K. Noble (wagtails, larks, buntings); R. J. Sandison (owls); M. Shrubbs (raptors); G. E. Tomalin

(*Sylvia* warblers); P. C. Turner (finches); Dr. A. B. Watson (Heron). The list was typed by Mrs. M. Millner.

CLASSIFIED RECORDS FOR 1983

by A. J. Prater

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 summary of bird-ringing. The sea-watch paper (pages 60-63) and breeding count tables (pages 46-47) should be read in conjunction with the summaries for individual species in the following list.

The following abbreviations are used in the List as standard practice. E. W. N. S. etc., cardinal points of the compass; GP, gravel pits; 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; ha, hectares; Km, kilometres. Amberley is used to cover the whole of Amberley Wild Brooks and Waltham 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 were recorded commonly in Sussex during 1983 but the information has not been incorporated into the List:—Pheasant *Phasianus colchicus*, Red-legged Partridge *Alectoris rufa*, Grey Partridge *Perdix perdix* and House Sparrow *Passer domesticus*. Details on these species are still required. **ESCAPES:**—The usual range of escapes was recorded. Full details of these are kept in the Society's files. Records are still required.

NOTE. SWANS, GEESE, DUCKS and WADERS. Readers should remember that the tables presented for all 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 co-ordinated count. The 'Wildfowl Counts' were made on 16 Jan., 13 Feb., 13 Mar., 18 Sept., 16 Oct., 13 Nov., 18 Dec. 1983 and 15 Jan., 11 Feb., 11 Mar. 1984. The 'Birds of Estuaries Enquiry' counts were made on 15 Jan., 12 Feb., 19 Mar., 10 Sept., 8 Oct., 19 Nov., 17 Dec. 1983 and 21 Jan., 18 Feb. and 17 Mar. 1984.

1. **RED-THROATED DIVER (*Gavia stellata*):**—In Jan. only reported from the east of the county with a maximum of 22 off Pett Level on 30th, fewer than is usual. Records were more widespread in Feb. and Mar., mainly ones and twos scattered along the coast with 2 at Bewl Bridge Res. from 19 Feb. to 13 Mar. and a maximum of 8 off Widewater. At least 7 were oiled and 1 was found dead at Dell Quay on 6 Mar. One on the Ouse at Lewes from 17-30 Mar. was slightly oiled. Very few were identified on spring passage (see Diver species), the last being 1 E at Brighton Marina on 17 May.

On 30 Oct. 4 were off Pett Level with 6 there on 20 Nov., increasing to 28 on 7 Dec. and 58 at the end of the year. Away from Pett only 10 were reported in Nov. and 2 in Dec.

2. **BLACK-THROATED DIVER (*G. arctica*):**—In the early part of the year 13 were reported along the coast; 2 at Bewl Bridge Res. on 13 Feb., 1 remaining a month. Again this species was more frequently identified on spring passage from the major seawatching sites than *G. stellata* (see Diver species). This is more pronounced towards the end of the spring with 20 records in Apr. and 16 in May (*cf. G. stellata* with 14 and 2 respectively). The last of the spring was 1 E at Beachy Head on 22 May.

On 21 Sept. 1 passed Worthing but there were no further records until late Oct. when 2 were seen at Worthing and Seaford. Five were scattered along the coast in Nov. with 1

in Chichester Hbr. The only Dec. records were singles at Selsey Bill and on Weir Wood Res. from 9-18th.

3. **GREAT NORTHERN DIVER** (*G. immer*).—Another good year with singles off Pett Level on 16 Jan. (CB) and off Selsey Bill on 22 Jan. and 19 Feb. (BJ, CMJ). This bird may have been 1 of 2 seen in Chichester Hbr. on 26 Feb. (CBC). Two were reported on spring passage (see Diver species). At the end of the year 1 was seen off Church Norton on 18 Oct., 17 Nov. and 18 Dec. (BJ, CMJ *et al.*) with 2 on 20 Oct. (RML). One was present in Newhaven Hbr. on 29 Nov. (TCS).

DIVER SPECIES (*Gavia sp.*).—Few were reported away from regular seawatching sites. Easterly spring passage was noted from 10 Feb. with 22 E past Brighton Marina, but 47 W there and 34 W at Worthing during Feb. may have distorted the true number moving:

	<i>G. stellata</i>	<i>G. arctica</i>	<i>G. immer</i>	<i>Gavia species</i>
Selsey Bill	11	17	—	228
Worthing	—	23	—	301
Hove	—	—	—	55
Brighton Marina	7	12	—	302
Beachy Head	—	—	2	184

While records in Mar. and Apr. were spread fairly evenly over the major sites, those for May show a strong westerly bias:

	Feb.	Mar.	Apr.	May
Selsey Bill	?	48	123	49
Worthing	—	40	143	58
Brighton Marina	—	102	107	16
Beachy Head	?	54	115	13

Few were seen at the end of the year, with 9 E and 19 W at Selsey and 46 E and 110 W at Worthing.

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

	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
Rye Hbr.	16	23	26	56	59	21	39
Chichester Hbr.	19	24	41	12	3	21	33
Pagham Hbr.	27	20	21	13	15	29	27
Lower Cuckmere	10	12	11	6	17	13	24
Weir Wood Res.	0	1	3	8	22	16	1
Bewl Bridge Res.	11	10	9	1	3	15	8
Widewater	15	16	10	3	4	2	1

The only winter record received for Chichester GP was of 30 on 23 Jan. where there were 23 on 10 Sept. At the end of the year minor records included 3 at Arundel on 9 Nov., 6 at Shoreham on 24 Nov. and 9 between Southsea and Lewes on 12 Nov. reducing to 2 in Dec.

Good coverage of breeding sites early in the season, during the inland water survey, located 49-50 pairs: some of these may not have stayed to breed. The only sites with more than a single pair were: Pagham Hbr. 3, Folly Pond 2, Gravetye Manor 1-2, Weir Wood Res. 2 and Rye Hbr. c.14.

A poor breeding season at Pagham Hbr. with only 3 breeding pairs and no sign of young. At Rye Hbr. first young noted on 4 July after usual failure of early nesting attempts. Final breeding success at Ternery Pit excellent with at least 25 young fledging. No breeding season information received for Chichester GP. Information on breeding success elsewhere was also limited due to less good coverage in the summer months but 5 pairs are known to have raised 9 young.

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

	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
Weir Wood Res.	17	21	27	62	55	52	27
Chichester Hbr.	22	2	15	—	—	44	41

	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
Pagham Hbr.	8	—	2	8	10	28	20
Bewl Bridge Res.	8	11	25	25	21	25	21
Rye Hbr.	2	2	6	1	4	23	12
Darwell Res.	11	12	5	21	12	12	10

There were 16 at Chichester GP on 23 Jan. and at Bewl Bridge Res. 2 pairs in full breeding plumage were displaying on 19 Jan. Coastal records included 13 off Goring in Nov., 23 in Rye Bay on 20 Nov. and 33 off Church Norton on 24 Sept.

In the breeding season there were 6-8 in Chichester Hbr. from 21 May to 3 June; similarly up to 6 were reported in Pagham Hbr. at the end of June but these stayed for only a few days. Good coverage of breeding sites was achieved during the survey of inland waters and 65 pairs were found at 29 sites as follows:

Chichester GP	5	Slaugham Furnace Pond	1	Bewl Bridge Res.	9
Burton Pond	1	Slaugham Mill Pond	1	Eridge Park	1
Chingford Pond	1	Balcombe Mill Pond	1	Hargate Forest	1
Petworth Park	1	Ardingly Res.	3	Flattenden Lake	1
Lurgashall Mill Pond	2	Pond Lye	1	Darwell Res.	2
Shillingee Mill Pond	2	Horsted Keynes	1	Powdermill Res.	1
Loxwood Hills Pond	1	Birch Grove	1	Crumbles GP	1
Warnham Mill Pond	1	Fen Place Mill	1	Pett Pools	2
Ifield Mill Pond	1	Weir Wood Res.	c.15	Rye Hbr.	4
Knepp Lake	2			North Point Rye	1

At Bewl Bridge Res. rising water levels caused 9 pairs to build 22 nests of which only 3 were successful and 7 young reared; on 20 Aug. a nest with 3 eggs was found in an exposed position on a grass bank. At Weir Wood Res. 15 pairs bred and c.20 young were raised from 8 broods. At Chichester GP 5 pairs raised 10 young. At Rye Hbr. 4 pairs bred; 2 were successful, each raising one young. Elsewhere 8 pairs are known to have raised 18 young.

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

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

Singles were seen at Pagham Hbr. on 1 and 12 Jan. with 2 there on 23 Feb. One remained at Bewl Bridge Res. from 1982 until 18 Feb. In Apr. 1 was seen at Brighton Marina on 16th and 2 flew E past Selsey on 22nd. The May record relates to 1 at Littlehampton on 16th. All records for the later part of the year came from Church Norton where 2 were first seen on 23 Sept. with a maximum of 5 the following day. Numbers then dwindled and the last was seen on 20 Nov.

9. **SLAVONIAN GREBE** (*P. auritus*).—1982.—The bird seen in June at Weir Wood Res. remained until 29 July.

1983.—Monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
15	12	12	5	—	—	—	—	—	—	2	31

All records in the first half of the year were along the coast in the west of the county apart from 2 at Beachy Head on 13 Mar. and 1 E there on 22 Apr. The highest counts were at Church Norton with 10 on 2 Jan., 6 on 26 Feb. and 7 on 10 Mar. The last of the spring was at Widewater on 26 Apr.

On 20 Oct. 1 was seen at Church Norton, nearly all subsequent records being there or at Selsey (but presumably involving the same birds) except 2 in Chichester Hbr. in Nov. and 5 in Dec. and singles at Pett Level on 19-20 Nov. and Widewater on 27th. At Church Norton 11 on 5 Nov. had increased to 14 by 15th and 27 on 20th but decreased to only 4 by 4 Dec. Ten were off Selsey Bill on 18 Dec.

10. **BLACK-NECKED GREBE** (*P. nigricollis*).—Very few were seen this year, records were as follows: 2 in Chichester Hbr. on 27 Feb., singles off Brighton Marina on 15 Apr., Weir Wood Res. on 7 Aug., Arlington Res. on 23 Sept. and Langney Point on 9 Oct. Two were in Chichester Hbr. on 19 Nov. and 3 Dec.

12. **FULMAR** (*Fulmarus glacialis*):—Breeding season reports were as follows: Portobello to Roedean, at least 4 apparently occupied sites, but about 24 birds present; Peasehaven to Newhaven, 24 occupied sites; Fairlight, 24 occupied sites.

During the spring seawatching at Selsey Bill, 1 Mar-31 May produced 88 E and 428 W, whilst at Worthing 257 E and 278 W were recorded in the same period. Singles were seen inland at Cliff quarry, Lewes on 30 May, going N over Arlington Res. on 15 Aug. and 1 was seen heading inland at Hastings on 29 Aug. The early return of birds to their nesting ledges was seen from 1 Dec. onwards.

17. **SOOTY SHEARWATER** (*Puffinus griseus*):—One W off Worthing on 21 Sept. (JAN).

18. **MANX SHEARWATER** (*P. puffinus*):—A record year for the species with an unprecedented movement noted along the coast on 2 May. The first was one W off Ferring and Selsey Bill on 10 Apr. One passed E off Brighton Marina on 15th with 5 W off Selsey Bill on 23 Apr. Gale force winds on 2 May brought huge numbers moving W along the Sussex coast with counts of 177 at Selsey Bill, 82 at Worthing, 11 at Hove and 159 at Beachy Head, the latter being particularly noteworthy considering the usual dearth of records from the east of the county. A discussion on this movement appears on pages 60-63. During 7-17 May a further 37 passed W off Selsey Bill, and Worthing reported 4 E and 5 W during 9-13th.

In contrast few were recorded in the autumn; singles W off Worthing on 2 Sept. and E off Beachy Head on 18th with 1 E and 2 W at Worthing on 12 Oct.

Birds showing the characteristics of the Balearic race *P. p. mauretanicus* were: 1 W at Beachy Head on 13 Apr. (LGG) and 1 E at Worthing on 23 May (JAN, CJF). In autumn, 1 went E on 7 Aug. at Beachy Head (JFC, DC) and 3 singles flew W on 19 Sept. at Worthing (JAN).

22. **STORM PETREL** (*Hydrobates pelagicus*):—One flew W past Brighton Marina on 17 Oct. (NAGL) and a late bird was picked up exhausted on the beach at St. Leonards on 30 Nov. (JB). These bring the number recorded since 1960 to only 6.

25. **GANNET** (*Sula bassana*):—Recorded in each month of the year. Selsey Bill observations below are compared with those from Worthing beach (in brackets). On an annual basis, both sets of figures give 36% E and 64% W.

Passing E	Jan.-Feb.	Mar.-May	June-July	Aug.	Sept.	Oct.	Nov.	Dec.
14(5)	186(133)	14	9(18)	3(15)	—(6)	—(3)	4(4)	
Passing W	13(10)	329(143)	12	15(14)	23(52)	8(36)	2(—)	13(62)

At Beachy Head the Mar-May movements totalled 111 E and 16 W, while at Brighton Marina 103 went E and 50 W. This shows that in spring there is a steady increase in the percentage of birds moving west as one goes west; the figures were: Selsey Bill 64%, Worthing 52%, Brighton Marina 33% and Beachy Head 13%.

A bird found dead at Selsey Bill on 4 Jan. had been ringed as a nestling at Ailsa Craig, Strathclyde on 6 July 1966 (per RML).

26. **CORMORANT** (*Phalacrocorax carbo*):—Monthly maxima from the main sites were:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chichester Hbr.	31	7	62	9	22	nc	nc	26	51	43	66	14
Rye Hbr.	11	19	9	5	17	24	9	38	35	51	32	16
Pagham Hbr.	12	14	5	4	nc	nc	nc	nc	5	16	33	16

At inland sites virtually all birds recorded Jan-early Mar. and Sept-Dec.: peak counts were 21 at Ardingly Res., 18 at Chichester GP, 14 at Weir Wood Res., 8 at Barcombe Mills Res. and 2 or 3 at Arlington, Bewl Bridge, Darwell and Powdermill Res. Coastal roosting birds were 25 at both the Portobello area and at Ecclesbourne Cliffs, but the roost at Southwick Power Station appears to be less frequently used, and the maximum of 20 birds that feed here may be among the 50-80 which daily fly past Brighton Marina and Hove. Inland roosting maxima included 118 flying up the Arun

Valley on 20 Feb. and 113 on 10 Nov.; 26 roosted on willows at Waltham Brooks on 5 Nov. Pylon roosts on the Pevensey Levels peaked at 10, on the Lewes Levels at 17 in Nov., although up to 25 birds were in the area in Dec.; on the Adur Levels there were 10 in Jan.

Occasional birds were seen moving inland but there was a large movement in the autumn: 15 went S at West Chiltington on 19 Sept., on 1 Oct. there were 10 S over Gossops Green and 80 went S off Beachy Head; the next day saw 17 S over Cissbury.

There is soon to be a national survey of the species, so regular details are required for all diurnal and nocturnal roosting areas and for feeding areas.

27. **SHAG** (*P. aristotelis*):—All records were from the coast. A total of only 17 were recorded as follows:

Feb.	Mar.	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	1	6	6	8	4

Most records came from Brighton Marina where singles on 15-21 Feb. and 16 Mar. were followed by a small gathering of immatures from 5 Sept. to the end of the year. Numbers rose from 3 in Sept. to 4 in Oct., 5 in Nov. and 4 again in Dec. One of these had been ringed as a nestling on the Isle of May, Fife on 20 June 1982. Elsewhere singles were seen at Shoreham Hbr. on 3 Mar., Birling Gap on 7 Aug., Langney Point on 3 and 18 Sept., Selsey Bill on 15 Sept., Newhaven on 27 Oct. and Hove/Southwick/Widewater Oct-Nov.: 2 were at Rock-a-Nore on 1 Nov. with 1 remaining to 15th.

30. **BITTERN** (*Botaurus stellaris*):—Only 3 sightings early in the year — at Arundel WFT on 19 Jan., Glynde Levels on 27 Feb. and Rye Hbr. on 20 Mar. Later, 1 bird was seen regularly from 1 Dec. onwards at Arundel WFT.

33. **NIGHT HERON** (*Nycticorax nycticorax*):—An adult seen at Slinfold on 21 Apr. (NTF, SWMH, MH) was the first since 1975 and only the fifth this century; it has been accepted by *British Birds*.

37. **LITTLE EGRET** (*Egretta garzetta*):—One seen passing E off Portslade on 7 May (RFP) was undoubtedly the bird seen later the same day in the Cuckmere (P JW *et al.*). Both records have been accepted by *British Birds*.

39. **HERON** (*Ardea cinerea*):—All known heronries were counted and nests in the certainly and probably occupied categories totalled 216 (221 in 1982) as follows: Fishbourne, 16 (ETR); Pagham, 2 (RML); Parham, 43 (AD); Henfield, 13 (ABW); Fittle, 41 (ABW); Knepp, 12 (A&S); Eridge, 12 (JWH); Priesthaves, 2 (LG); Westham, 2 (LG); Wartling, 2 heronries, 8 and 10 (LG); Pevensey, 2 (LG); Pett Level, 3 (CHD); Leasam, 50 (CFG, EMC, HARC); Weir Wood Res., none, where 2-3 in 1982 (JESC).

There were scattered records throughout Sussex in all months. Maxima were Pagham Hbr. 15 in Oct.; Weir Wood Res. 35 in Aug. and 26 in Oct.; Rye 18 in Jan., 30 in Feb., 35 in Nov.; Bewl Bridge Res., 13 in Nov.; Chichester Hbr. 35 in Oct.

40. **PURPLE HERON** (*A. purpurea*):—An immature was seen at Chidmere Pond on 5 and 18 June (JHME, AP).

44. **SPOONBILL** (*Platalea leucorodia*):—Five were present at Pagham Hbr. on 12 Apr. (CMJ, PJ), 1 of which remained until 25 Apr.

46. **MUTE SWAN** (*Cygnus olor*):—In the early months c.80 between Amberley and Arundel on 16 Jan. and 61 in Chichester Hbr. on 15 Jan. were the only large herds reported. A census in Apr-May found 185 territorial pairs (133 nests) and 478 non-breeders; a full report appears on pages 69-73. The lowered water level at Petworth Park again proved attractive to the species and 19 were present there on 30 June. Post-breeding season numbers increased at Widewater to 19 on 25 Sept., at Bewl Bridge to 23 on 16 Oct., at Pagham Hbr. to 24 on 10 Oct. and at Chichester GP to 35 on 15 Oct. At Birchen Bridge, Horsham a party of 10 in early Nov. was unusual, elsewhere there were

41 at Rye on 20 Nov., 42 on Horse Eye Level on 28 Dec. and 53 in Chichester Hbr. on 17 Dec.

47. **BEWICK'S SWAN** (*C. columbianus*):—At the beginning of the year there were 98 (including 13 juveniles) at Greatham on 1 Jan. An accurate count for the entire Arun valley on 16 Jan. found 104 and numbers peaked at 115 (including 23 juveniles) at Amberley on 17 Feb. Eight at Hardham on 5 Mar. were the last reported from the Arun valley. On the same day there were 7 on the sea off Beachy Head and the following day 16 were seen to arrive at Bewl Bridge Res. from the SW.

In the autumn the first records were of 10 SW very high over Slinfold and 2 flying down the valley at Wet Level on 9 Nov. In the Arun valley 29 (including 6 juveniles) arrived at Waltham Brooks mid-morning on 12 Nov. and roosted there for much of the day. Numbers in the valley had increased to 63 (including 13 juveniles) by 19 Nov., but no accurate counts for the entire valley are available thereafter. At Arundel 1 SW and 8 N on 7 Dec. Elsewhere, 3 visited Arlington Res. on 3 Dec. and there were 4 on Lewes Brooks and 11 at Chichester GP on 31 Dec.

50. **PINK-FOOTED GOOSE** (*Anser brachyrhynchus*):—A single escaped bird seen throughout the year with Canada Geese at Bewl Bridge Res.

51. **WHITE-FRONTED GOOSE** (*A. albifrons*):—Two adults were at Greatham Bridge from 1 Jan. to 25 Jan., with singles on Pulborough Brooks on 13 Feb. and at Waltham Brooks with Canada Geese on 3 Apr. At Arlington Res. 8 were seen from 11-22 Feb., while 7 flew from the NE into Weir Wood Res. and departed in the same direction on 9 Jan.; 1 went W at Pagham on 19 Feb.

The only records late in the year were both on 12 Dec. when 11 flew NW over Arundel WFT and 90 went S at Arlington.

53. **GREYLAG GOOSE** (*A. anser*):—The only concentration early in the year was 24 in the Arun valley, mostly at Waltham Brooks. Here 1 pair raised 7 young. In the spring and summer, a non-breeding pair was at Bewl Bridge Res.; there were up to 7 at Weir Wood Res. and up to 3 at Rye Hbr. Seawatching revealed a total of 9 moving E between 16-30 Apr. Late in the year, Waltham Brooks regularly had 14 birds while, unusually, 26 were feeding on pasture on Pett Level on 15 Nov.

54. **SNOW GOOSE** (*A. caerulescens*):—A flock of 14 white phased birds were seen regularly in the Pagham Hbr./Bracklesham area from 19 Jan. to 12 Mar.; they flew far out to SE several times and even W to Hampshire, but returned again; perhaps these are our most likely candidates for wild birds. Undoubted escapes were 3 at Plashett Park on 17 Apr. and a blue phase bird at Weir Wood Res. with Canada Geese between 3 Apr. and 10 Sept.

55. **CANADA GOOSE** (*Brania canadensis*):—Maximum numbers at the principal wintering sites are tabulated below. These were similar to numbers reported in 1982; however a flock of 1,028 at Bewl Bridge on 7 Sept. was the largest single flock seen to date in Sussex. Complete counts were not available for Chichester GP.

	Jan.	Feb.	Aug.	Sept.	Oct.	Nov.	Dec.
Bewl Bridge Res.	279	120	658	1028	532	633	240
Arun Valley	628	600	400+	319	250	580	
Arlington Res.	174	400	520	—	213	275	
Barcombe Res.	190	188	—	—	217	75	260
Rye Hbr.	71	72	229	116	65	100	66
Weir Wood Res.	86	142	48	75	198	206	208

Other records of substantial numbers included 121 in Henfield Brooks on 8 Jan., 200 at Lurgashall on 23 Jan., 107 at Chichester GP on 25 Sept., 360 at Duncton on 28 Sept., 130 on Horse Eye Level on 10 Dec. and 114 at Knepp Lake on 26 Dec.

The survey of inland waters showed that this species is now very widely distributed during the breeding season. Numbers of young reared at the main breeding sites were: Petworth Park 61 (number of broods not known); Rye 46 (10-12 broods); Bewl Bridge

Res. 22 (4 broods); Weir Wood Res. 20 (4 broods); Plashett Park 21 (4-5 broods); Pond Leigh 17 (broods unknown); no information was available for Chichester GP. At least 15 pairs attempted to nest at Arundel WFT. Elsewhere 71 pairs are known to have nested at 50 sites and of these, 49 pairs raised at least 200 young and several other pairs may have bred successfully.

56. **BARNACLE GOOSE** (*B. leucopsis*):—The sad tale of escapes or ferals continues with no records of probably wild birds. Three fed with Brent Geese in the western harbours. The rest were with Canada Geese; the main numbers being up to 5 at each of Barcombe Mills Res./Plashett Park, Weir Wood Res. and Bewl Bridge Res., and there were up to 3 at Waltham Brooks. Birds were seen in every month.

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

	1983		1984							
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals*	14977	14680	4727	16	142	9131	14562	16827	13017	7690
Chichester Hbr.	10211	10550	4537	11	114	7113	10816	11849	8707	6308
Pagham Hbr.	2963	3093	184	5	26	1006	1746	2477	2011	382

*The Sept. 1983-Mar. 1984 county total includes an estimate for Bracklesham Bay.

The 1983 breeding season was unsuccessful, but the peak county total in the 1983/84 winter was slightly higher than in the previous year, no doubt influenced by the severe weather to the north and the east. A peak of 2,500 were on Bracklesham by the end of the year. Occasional birds were seen on other coastal grazing marshes, notably 70 at Horse Eye Level, Pevensey, on 12 Jan. and 15 on Pett Level on 22-23 Feb.

Inland migration is clearly a regular phenomenon. This spring there were 100 E at Chichester GP on 19 Feb., 100 ENE over Ashdown Forest on 26 Feb. and 6 at Weir Wood Res. on 1 Mar. At Crowborough they were heard passing over at night on 17 Mar. and 2 days later 300 went E over Arundel WFT. On the coast at least 5,370 were seen passing E in Mar-May; with totals of 1,956 at Selsey, 3,096 at Worthing, 3,826 at Brighton Marina and 1,895 at Beachy Head. Over 75% of birds passed by in Mar.; the peak days were 13 Mar. when Beachy Head had 867, 3 Mar. when Brighton Marina had 758 and 9 Mar. when 509 went past Selsey Bill.

The licences given to shoot Brent Geese on farmland around the western harbours resulted in 5 injured birds overwintering in Pagham Hbr. and 12 in Chichester Hbr. Autumn migration was first noted at Worthing on 27 Sept., and at Brighton Marina and Littlehampton on 30 Sept. The coastal movements were poorly documented, but at Worthing 1,262 went W with a peak of 233 on 29 Oct. Inland, however, another substantial migration was seen at and near Bewl Bridge Res. where 579 birds were counted moving S between 8-13 Nov., including 312 on the 12th. One was feeding here with Wigeon on 18 Dec.; 12 flew E at Steyning on 5 Nov.

Few pale-breasted birds of the race *hrota* were seen. One was at Pagham Hbr. 1-18 Jan. and 1 flew over Worthing on 24 Apr. Another, apparently paired with a dark-breasted bird and accompanied by 1 juvenile of intermediate colour, was at Sidlesham Ferry on 13 Nov.; finally 1 was again here from late Dec. onwards.

Cat. C. EGYPTIAN GOOSE (*Alopochen aegyptiaca*):—The feral bird at Arundel WFT occasionally strayed as far as Waltham Brooks; otherwise only 1 at Weir Wood Res. between 23 Oct. and 10 Nov.

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

	1983		1984							
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	2711	2059	2049	215	359	1522	2048	2859	3014	2274
Chichester Hbr.	2255	1598	1708	200	267	1065	1246	2356	2571	1871
Pagham Hbr.	398	318	258	15	86	424	728	437	374	332
Rye Hbr.	21	94	35	—	5	16	5	41	29	36
Cuckmere	22	23	42	—	—	16	18	23	27	24

The counts were typical of recent years, although perhaps the low figure for Rye Hbr. is due to a movement to the tidal Rother, where 105 were seen on 20 Feb. The very

small numbers seen inland at many major wetlands from Jan. to Apr. were many fewer than seen in the late 1970s.

Breeding was noted for the first time on the Brede Levels where 1 of 5 pairs hatched 6 young. At Waltham Brooks, 1 pair reared 8 young, but at Arundel WFT the 4 pairs lost most of their broods; a pair on Chichester GP raised 6 young. Counts of *pullii* on the traditional coastal areas were of 120 at Pagham Hbr., 78 at Rye Hbr./Northpoint GP and 54 at West Chidham.

Small numbers were seen on migration, with 115 E at Brighton Marina and 101 E at Worthing in spring; in autumn 175 went W at the latter site.

63. **MANDARIN** (*Aix galericulata*):—Early in the year the only flocks reported were 14 at Birchen Bridge on 15 Jan., 16 at Eridge Park on 21 Jan. and 13 in Arundel Park on 29 Jan.

On 26 May there were 3 pairs (2 with broods of 5 and 10) plus 6 drakes at Swanbourne Lake. Pairs nested in boxes at Cotchets Farm, Maynards Green and Possingworth Park, but were successful only at the latter location. Successful breeding was also reported from Eridge Park, Paddockhurst Estate and Selham; other breeding season records arising from the inland water survey included records from Lurgashall, Ebernoe, Bolney, Ashfold, 4 hammer/furnace ponds in the Horsham area, Brockwood Pond, Lindfield, Birch Grove, Weir Wood Res., Buckhurst Park, Parsonage Wood, Blackboys, Buxted, Bayham and Whiligh.

At the end of the year the only flocks reported were of 14 at Swanbourne Lake on 17 Dec. and 9 at Eridge on 23 Dec.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	2277	1955	807	1726	2431	767
Glynde Levels	320	250	120	920	550	235
Chichester Hbr.	693	789	221	713	563	925
Arlington Res.	400	30	—	20	630	30
Cuckmere Valley	329	173	76	101	60	228
Bewl Bridge Res.	215	204	106	9	123	133
Pagham Hbr.	130	205	7	134	60	117
Amberley Levels	52	2	148	70	85	180
						200

The Jan. total was a more normal level of half that of 1982. Additional counts in the early months were c.500 at Glynde on 22 Jan., 325 in the Cuckmere on 10 Feb., 300+ at Arlington Res. on 20 Feb. and 350 at Glynde on 26 Mar. Smaller numbers were recorded from several other regular sites, but 2 pairs wintering at Powdermill Res. was unusual.

Pairs were present at 3 localities in May-June but there was no evidence of breeding. Returning birds were first noted in Aug. with 2 at Bewl Bridge Res. on 15 Aug. and 10 there on 26th. There was a single at Portfield GP on 20 Aug. and 4 there by 3 Sept. Elsewhere 7 had arrived at Rye and 8 on Thorney Deepes by 26 Aug.

At the end of the year an aberrant duck was present at Waltham Brooks from 13 Nov. to 17 Dec. Additional counts included c.300 at Arlington Res. on 30 Nov. and more unusual records of pairs at Brooklands on 2 Oct. and Lurgashall on 13 Nov.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	184	160	45	176	123	151
Swanbourne Lake	43	72	5	32	60	42
Arundel WFT	74	61	31	25	37	15
Bewl Bridge Res.	30	14	7	18	10	37
						43
						27
						8
						2

At the beginning of the year the total had returned to normal levels compared with the cold weather influx of the 1981-82 winter. Additional counts included 72 at Swanbourne on 11 Jan., 14 in Chichester Hbr. on 15 Jan. and 12 at Chichester GP on 23 Jan. Elsewhere there were smaller numbers at Pagham, Barcombe Res., Powdermill Res. and Rye Hbr. A pair on Storrington village pond on 1 Jan. was unusual. No regular counts were received for Chichester GP.

In the breeding season there were 3 pairs at Rye Hbr. and 2 pairs at Waltham Brooks, but no sign of breeding. At Bewl Bridge Res. 10 had returned by 24 Aug. and other counts later in the year included 13 at Chichester GP on 22 Oct., 12 at Waltham Brooks on 10 Oct. and 15 at the Crumbles on 11 Dec. Smaller numbers were also reported from Thorney, Pagham Hbr., Shoreham, Pett Pools, Weir Wood Res. and Rye Hbr.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	3791	2669	1011	310	1182	2621
Chichester Hbr.	1979	1272	504	4	625	1477
Pagham Hbr.	481	257	52	0	87	469
Glynde Levels	120	80	65	6	24	38
Amberley area	387	198	151	17	70	120
						214
						380
						327
						130

The Jan. 1983 total was higher than that for 1982, which was above average. No regular counts were available for Chichester GP or the Arun valley between Arundel and Amberley, but 219 were counted at the latter on 14 Feb. Other interesting counts at the beginning of the year included 550 at Amberley on 8 Jan., 260 at Arundel WFT on 5 Jan. and 44 at Bepton, which is unusual for this small inland water.

The survey of inland waters showed that this species is widespread at such sites, particularly in the NW, during mid-Apr. However at most sites hopes that the species might stay to breed were soon dashed. Successful breeding was reported from Bewl Bridge Res. for 1 of 2 pairs present, and strongly suspected on Pevensey Levels. Elsewhere there were 2 drakes and 3 ducks at Pagham Hbr. during May-July, 2 pairs at Waltham Brooks and single pairs at Burton Pond, Arundel and Wet Level, but breeding was not proven at any of these sites.

At the end of the year additional counts included 495 at Thorney Deepes on 10 Sept., 267 at Arundel WFT on 19 Dec., 300 at Horse Eye Level on 28 Dec. and 165 on 14 Dec. at Chingford Pond following its partial drainage.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	4250	4222	1968	3344	2918	3322
Bewl Bridge Res.	628	536	189	1016	457	405
Arundel WFT	502	780	552	471	564	311
Arlington Res.	200	500	100	—	60	700
Chichester Hbr.	450	391	224	45	299	434
Pagham Hbr.	188	61	99	222	264	412
Rye Hbr.	220	294	104	365	221	382
Darwell Res.	380	366	66	58	69	76
						273
						258
						192
						38

The Jan. total was well below that of 1982 and much nearer the average for recent years. Other counts received included c.500 at Arlington Res. on 20 Jan., c.330 at Rye Hbr. on 19 Aug., c.1,000 at Bewl Bridge Res. on 29 Aug. and c.400 at Weir Wood Res. on 24 Sept.

At Bewl Bridge Res. 33 broods were seen, including 1 of 14 on 12 Apr.; 20 broods were hatched on the floating islands in the nature reserve. At Arundel WFT, a brood of 10 was seen on 13 Dec. but this was depleted to 1 in 3 days.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	387	214	75	99	302	294
Pagham Hbr.	251	82	14	45	272	253
Chichester Hbr.	118	113	46	50	27	31
Amberley	15	13	7	—	—	—
						61
						4
						78
						8

Although lower than in 1982, the Jan. counts were again above average. Other counts received for the beginning of the year included 20 at Waltham Brooks on 8 Jan.

and 5 Mar. Small numbers were also reported from Knepp, Barcombe Res., Weir Wood Res., Bewl Bridge Res., Lower Cuckmere and the Midrips.

Spring and summer records included a drake at Waltham Brooks from 20 May to 3 June; 1 at Rye Hbr. on 10 July and 23-31 Aug.; and a duck at Thorney Deepes on 13 Aug. Sept. records included 3 at Chichester GP on 3rd, 1 at Bewl Bridge Res. on 4th and 1, possibly throughout the month, at Rye Hbr.

At the end of the year 272 at Paghams Hbr. in Nov. was an unusually high figure. Other records included 58 at Waltham Brooks on 24 Dec., 42 at Paghams Hbr. on 5 Dec. and 16 flying down the Adur Valley on 24 Dec. Lesser numbers were reported from Swanbourne Lake, Knepp, Bewl Bridge Res., Barcombe Res., Weir Wood Res., Widewater and the Crumbles.

73. GARGANEY (*A. querquedula*):—A pair at Rye Hbr. on 26 Mar., a drake at Arlington Res. on 28 Mar. and another pair at Rye Hbr. on 30 Mar. were the first records for the year. Other spring records included a pair at Church Norton and a drake at Waltham Brooks on 13 Apr., a pair at Sidlesham Ferry on 23 Apr. and 1 W off Worthing Beach on 30 Apr.

Several records for Rye Hbr. in May but no evidence of breeding. Three drakes were seen in Paghams Hbr. on 5 June and 2 eclipse/juvenile birds on 20 June.

Approximately 35 were seen during the autumn, the best showing since 1969. At Rye Hbr. present from 9 July to 25 Sept.; in Aug. numbers increased rapidly from 7th to a peak of 22 on 19th after which they fell away and in Sept. a maximum of 5 was seen. Four at Pett Pools on 27 Aug. were undoubtedly part of this flock. At Bewl Bridge Res. seen 20 Aug. to 9 Sept. with a peak of 4 on 4 Sept., when 1 was at Weir Wood Res. Singles were in the Cuckmere on 25 Aug. and Paghams Hbr. on 28 Aug. At least 6 different individuals were at Chichester GP between 6 Aug. and the last on 19 Oct.; the peak was 5 on 13 Aug.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	237	104	113	194	144	133
Amberley WB	15	19	5	17	45	30
Arundel WFT	41	31	21	13	23	31
Chichester Hbr.	7	7	2	1	12	8
Arlington Res.	27	—	—	—	37	20
Rye Hbr.	26	15	15	9	6	11
Petworth Park	2	—	—	2	33	2

The total for Jan. was probably about average. Regular counts for Chichester GP were lacking but there were 58 present on 23 Jan. and 120 at Portfield alone on 19 Feb. Other counts in the early months included 35 at Sidlesham Ferry on 1 Jan., 36 at Rye Hbr. on 7 Jan. and 35 at Waltham Brooks on 12 Mar. Smaller numbers were reported from most of the major inland and coastal waters and also from Petworth Park, Warnham and Bepton.

Two pairs bred at Rye Hbr., rearing 3 and 6 young, and this may have been the source of the pair with 6 flying young seen at Pett on 23 July. Elsewhere small numbers were reported during May and June from Sidlesham, Aldsworth Ponds, Waltham Brooks and Warnham, but there was no evidence of breeding.

As usual numbers started to build up at coastal sites during Aug. At the end of the year additional counts included 35 at Arlington Res. on 11 Dec. and 55 there on 28th. Other records included small numbers at Glynde, Weir Wood Res., Knepp, the Crumbles, the Cuckmere valley and, more unusually, from Petworth Park, Burton Pond and Gossops Green.

76. RED-CRESTED POCHARD (*Netta rufina*):—A male was at Scotney Court GP on 9 Apr. In autumn a female/immature sporadically at Rye Hbr. between 14 Sept. and 16 Oct. was followed by an immature male at Bewl Bridge Res. from 23 Oct. to 13 Nov.; a male was at Slaughter Furnace Pond for most of Nov. and Dec. Escapes are always suspected.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	1178	850	320	971	613	368
Arundel WFT	292	30	135	160	213	295
Chichester GP*	227	nc	nc	6	208	79
Rye Hbr.	166	223	71	14	147	96
Weir Wood Res.	165	157	51	8	38	116
Bewl Bridge Res.	74	50	13	87	26	25

*incomplete
The total at the beginning of the year was about average and no additional counts of note were received.

In the breeding season 3 drakes and 2 ducks were present at Bewl Bridge Res. One duck incubated 8 eggs on a floating island, but no young were seen. At Chichester GP numbers rose from 6 in early June to 28 at the end of the month; in late July at least 2 well-grown young were identified. Elsewhere small numbers were present at Rye Hbr. but breeding was not proven; a duck was seen at Swanbourne Lake with 2 young on 26 May and breeding was suspected at Newells Pond.

At the end of the year additional counts included 380 at Portfield GP on 1 Oct. and 300 there on 31 Dec.; 114 and 110 were at the Crumbles on 19 Nov. and 10 Dec. respectively.

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

	1983			1984		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
County totals	1127	531	538	585	659	687
Arundel WFT	239	174	210	144	267	179
Swanbourne Lake	11	19	14	7	44	23
Bewl Bridge Res.	132	62	75	61	60	46
Weir Wood Res.	85	68	75	86	124	80
Burton Ponds	62	38	37	39	71	43
Arlington Res.	68	nc	nc	196	36	5
Chichester GP*	386	nc	nc	50	17	22

*incomplete
The total at the beginning of the year was similar to that at the beginning of 1982. Additional counts included 109 at the Crumbles on 15 Jan. and 83 there on 12 Feb., 73 at Barcombe Res. and 84 at Weir Wood Res. on 19 Feb., 200 at Swanbourne Lake on 17 Feb., 54 at Darwell Res. on 13 Mar. and 129 at Weir Wood Res. on 27 Mar.

During the breeding season young were recorded as follows: 70 at Rye Hbr. (13 pairs), 32 (6 broods) at Chichester GP, 29 (6 broods) at Bewl Bridge Res., 35 (5 broods) at Weir Wood Res. and nearby pond, 14 (4 broods) at Birch Grove, 14 (2 broods) at Graveley, 10 (2 broods) at Scotney Court GP, 5 (1 brood) at Aldsworth Pond. There were reports of 16 other pairs at 8 sites in June-July but this probably underestimates the true breeding population, as at least 79 pairs were found at another 48 sites during the inland water survey in Apr. and some of these may have stayed on breed.

At the end of the year there were 160 at Weir Wood Res. on 8 Oct. and 115 there on 30 Dec., 90 at Bewl Bridge Res. on 27 Nov., 134 at the Crumbles on 19 Nov. and 107 there on 10 Dec.

81. SCAUP (*A. marina*):—At the beginning of the year there were small numbers in the Rye area, with a maximum of 6 at Scotney Court GP on 1 Jan., 1 drake at Paghams Hbr. and a duck at Swanbourne Lake, which was still present in early Feb. A few remained in the Rye area throughout Feb. A very tame duck, possibly an escape, first seen at Weir Wood Res. on 4 Mar. was still there on 2 May.

On 20 Apr. 1 drake and 3 ducks E at Selsey Bill were also seen off Worthing. Similarly one E at Selsey on 6 May may have been the same bird seen on the sea at Pett later the same day.

Single ducks were reported from Weir Wood Res. on 26 Aug. and at Brooklands on 20 Oct. On 24 Oct. 5 restless birds at Brooklands were seen to fly out to sea. In Nov. and

Dec. small numbers were again reported from Brooklands, Widewater and the Rye area, with a maximum of 8 in Rye Bay on 21 Nov.

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

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coastal	152	78	137	159	43	17	17	17	38	43	109	221

As in previous years a flock was regularly noted from Selsey Bill; the peak count of 115 occurred on 16 Apr. Elsewhere there were few noted except off Pett where the count of 40 on 14 Jan. had declined to 22 by 22 Apr.

Spring coastal movements were lower than usual; totals at Worthing were 60 E and 21 W (372 E in 1982), at Brighton Marina 59 E (153 E in 1982) and at Beachy Head 82 E (202 E in 1982).

At Fairlight Cove 10 summering birds were recorded and 7 were noted at Church Norton. After 25 W at Worthing on 30 Sept. small numbers were recorded from several sites. Finally, the flock at Selsey Bill stood at 30 on 9 Nov. and increased to 150 by 29 Dec. Unusually, a female was on Arlington Res. on 3 and 4 Dec.

86. **LONG-TAILED DUCK** (*Clangula hyemalis*):—Approximate monthly totals at coastal and inland localities were:

	Jan.	Feb.	Mar.	Apr.	May	Oct.	Nov.	Dec.
Coastal	3	3	8	6	2	—	6	—
Inland	5	6	7	5	2	—	—	—

This involved about 29 individuals. Inland, 2 overwintering birds remained at Bewl Bridge Res. until 4 May, 1 at Weir Wood Res. until 26 Feb. and up to 3 at Chichester GP until 17 Apr.

At Selsey Bill 2 were present 5 Feb. to 1 Apr. and 5 flew E, including 3 on 14 Apr.; the last was seen on 5 May. One was present around Brighton Marina from 21 Feb. to 3 Apr. and 2 others flew E including 1 on 5 May.

The first of 9 wintering birds late in the year was at Worthing on 14 Nov. and only at the Crumbles and in Chichester Hbr. were 2 birds present.

87. **COMMON SCOTER** (*Melanitta nigra*):—Although 500 wintered off Pett Level during Jan. the coastal movements were insignificant; inland 2 at Bewl Bridge Res. on 22 Jan. and 6 NW at Hurst Green were noteworthy. Coastal stations all recorded a poor spring passage although at Selsey Bill numbers were slightly up, 1,674 E (1,527 E in 1982), as they were also at Worthing, 2,651 E (1,816 E 1982), whereas at Brighton Marina, 2,732 E (3,372 E 1982) and Beachy Head, 2,257 E (4,023 E 1982) numbers were well down. The 3 best days are shown in the table below and demonstrate how the numbers increase as one progresses eastwards through the Channel:

	Selsey Bill	Worthing	Brighton Marina	Beachy Head
Mar. 13	23 (4.2)	13 (6.5)	104 (17.3)	330 (66.0)
Apr. 10	168 (13.4)	346 (31.4)	171 (28.5)	673 (112.2)
Apr. 22	277 (21.3)	210 (16.2)	261 (18.6)	123 (35.1)

Note: (birds per hour in brackets)

Very few noted during the summer and autumn: the only records were 12 E at Selsey Bill on 19 June, 11 at Brighton Marina on 10 July and 3 at Weir Wood Res. on 27 July. The other inland observations were of 1 on the R. Ouse at Southeast on 9 Apr. and 4 on Bewl Bridge Res. on 12 Nov. The largest autumn movement was at Worthing on 30 Oct. when 74 flew E.

89. **VELVET SCOTER** (*M. fusca*):—During Jan. a single bird was present off Pett Level. In Feb. singles were recorded from Newhaven Tidemills on 12th, Rye Hbr. on 19th and Selsey Bill on 26th and a peak of 3 was at Widewater on 27th.

Spring movements were the lowest since 1971, with only 12 E at Selsey Bill, 8 E at Worthing, 10 E at Brighton Marina and 12 E at Beachy Head. At Winchelsea beach 6 were noted on 30 Apr.

In Oct. 2 flew W at Worthing on 23rd and 1 was at Rye Hbr. on 30th. During Nov. there were 7 E at Langney Point on 13th, 1 W at Worthing on 14th, 2 E at Hove on 18th

and a single in Chichester Hbr. on 19-20th. Dec. was poor with only 2 W at Hove on 3rd and singles at Worthing on 4th and 17th.

91. **GOLDENEYE** (*Bucephala clangula*):—The Jan. and Feb. coastal counts produced 61 and 31 respectively, a reduction of over 50% on the Jan. 1982 figures. As usual the majority were in Chichester Hbr. with 49 on 27 Feb. Inland maxima for Jan-Mar. were 5 at Chichester GP, 5 at Bewl Bridge Res. and 5 at Weir Wood Res. At Rye Hbr. in Feb. a maximum of 8 was recorded.

On the coast there were 4 off Selsey Bill in Jan. and 10 in Feb. The last wintering records involved single birds at Chichester GP on 17 Apr. and Weir Wood Res. on 1 May.

The first autumn record of 1 at the Crumbles on 25 Sept. was not followed until 24 Oct. when 4 were noted at West Chidham. During Nov. records came from several inland and coastal sites including 27 W at Selsey Bill on 13th. By Dec. maxima for inland sites were 8 at Weir Wood Res. and 7 at Bewl Bridge Res.; on the coast there were 5 at Rye Hbr. and 34 in Chichester Hbr.

93. **SMEW** (*Mergus albellus*):—Fewer records than in recent years. A redhead was reported at Rye on 19 Jan. In Feb. recorded at Pagham Hbr. with a female on 13th and 2 on 20-21st; and at Bewl Bridge Res. where 2 males on 13th and 1 on 20th. The last seen was at Darwell Res. on 13 Mar.

At the end of the year, single redheads were reported from the Crumbles on 11 Dec. and Weir Wood Res. on 15th. On 18 Dec. there were 2 at Darwell Res. and 1 at Pagham Lagoon which was still there on 31st.

94. **RED-BREASTED MERGANSER** (*M. serrator*):—1982:—One at Weir Wood Res. on 12 Dec.

1983:—The wildfowl counts in Jan., Feb. and Mar. were 78, 60 and 72. As usual Chichester Hbr. held most birds with a maximum of 43 in Feb. Due to wintering birds, the true figures of migration are difficult to assess from coastal stations. The Jan-Feb. totals for Selsey Bill were 109 E and 94 W and at Worthing 174 E and 105 W.

Spring passage, between Mar. and May, was similar to last year with totals of 402 E at Selsey Bill, 338 E at Worthing, 59 E at Brighton Marina and 136 E at Beachy Head. One female offshore at Church Norton on 3 June was presumably a late migrant. In July 1 E off Lancing on 10th might have been the same individual recorded on 11th flying W at Brighton Marina.

One in Pagham Hbr. on 7 Sept. was the first autumn record. During Nov. inland records came from Hurst Green on 13th, when 30 flew SW in V formation, and at Bewl Bridge Res. on 21st when 2 were seen. On the coast, 52 off Thorney Island on 19 Nov. and 44 off West Chidham on 4 Dec. were noteworthy. Estuary counts produced 130 in Nov. and 86 in Dec.

95. **GOOSANDER** (*M. merganser*):—Recorded inland until 5 Mar. and from 21 Nov. although in spring 4 E off Hove on 20 Apr., 1 E at Selsey on 28 Apr., and in autumn 3 off Church Norton on 2 Oct. and 1 off Brighton 15 Nov. Monthly inland totals were:

	Jan.	Feb.	Mar.	Nov.	Dec.
	14	3	1	11	14

Most records related to Bewl Bridge Res., Weir Wood Res., Barcombe Res., the Crumbles, Pett Pools and Rye Hbr., but 1 present at Alexandra Park at the end of 1982 stayed until 13 Jan.; 1 was at Falmer Pond on 3 dates in Jan. and at the end of the year up to 4 at Chingford Pond from 14-18 Dec.

96. **RUDDY DUCK** (*Oxyura jamaicensis*):—Fewer records than in 1982. Present throughout the year at Chichester GP and Arundel WFT. At Chichester GP 8 adults on 2 Jan. were still present in June. A brood of 8 first reported on 26 May had been reduced to 5 by 5 July and 1 on 30 July. Numbers increased in Dec. and had reached 18 by the end of

the year. At Arundel WFT 3 young were raised from a second brood; numbers there reached 7 on 13 Nov. but had fallen to 2 by 18 Dec.

Elsewhere singles reported in spring from Birch Grove on 5 Apr. and Weir Wood Res. on 3 dates between 10 Mar. and 10 Apr. Regular at Weir Wood Res. from 7 Aug. until the end of the year with a maximum of 5 on 22 Sept., and at the Crumbles GP from 9 Oct. to the end of the year with a maximum of 4 on 11 Dec. One was seen at Newhaven on 27 Nov. and there was a pair on the sea off Pett on 31 Dec.

98. **BLACK KITE** (*Milvus migrans*):—One seen over Chapel Common on 2 May (SLG, GH, JWT) has been accepted by *British Birds*. It was our fifth record and the fourth since 1976, indicating its increasing frequency.

99. **RED KITE** (*M. milvus*):—One flew W at Lewes on 5 Mar. (AJH) and 1 at Fairlight on 21 Nov. (GB).

103. **MARSH HARRIER** (*Circus aeruginosus*):—Only 6 were recorded in all, a low annual total for recent years. Records were: a male at Selsey Bill and Church Norton on 21 May and a female around Pagham Hbr. from 24-30th. Single females/immatures at Church Norton on 1 Aug. and Rye Hbr. from 13-28th; a sub-adult male at Beachy Head on 25 Sept. and a bird at the Crumbles on 9 Oct.

104. **HEN HARRIER** (*C. cyaneus*):—Numbers continue to be high, with a total of 33-36 birds recorded. If all were different the number of adult males was unusually large, totalling 13-14 or c.40%. Monthly totals were:

	Jan.	Feb.	Mar.	Apr.	Sept.	Oct.	Nov.	Dec.
Adult males	6	3	3-4	2	1	0	3	6
Others	8	10	5	3	1	3	6	9

The records were again mapped and groups emerged as follows:

Chichester Harbour. Up to 3 birds (1 adult male) until 2 Apr. and from 13 Nov. but only 1 ring-tail consistently present during each period.

Selsey Peninsula. An adult male until 9 Apr. together with a ring-tail until 14 Feb. At the end of the year a female from 14 Nov. was the only bird.

Ashdown Forest. A ring-tail present until 27 Feb. and an adult male until 24 Apr. An adult male was seen on 12 Sept. (CFT); otherwise a ringtail from 27 Nov. and an adult male on 29 Dec. The records suggested that these birds ranged over c.6,000 ha of terrain in and around the Forest.

Ouse valley and Downs. All records came from the Downs between Lewes and Brighton, where a ring-tail present until 30 Apr. Single adult males were seen on 26 Mar. and in December and another ring-tail on 9 Nov. The records embraced an area of c.3,100 ha of downland.

Midhurst area. Single adult males at Woolbeding Common on 20 Jan., 22 Nov., and 1 Dec. and at Elsted on 11 Mar.

Cissbury/Chanctonbury. An adult male and a ringtail from mid-Nov. to at least 11 Dec.

Pevensy Levels. An adult male on 27 Jan. and a ring-tail on 5 Dec.

Amberley Wildbrooks. A ring-tail until 23 Feb. and an adult male and a ring-tail on 27 Dec.

Pett Level. Single ring-tails from 9-23 Feb., on 6 Oct. and 7 Dec.

Rye Harbour. A ring-tail until 2 Apr. and from 24 Oct.

In addition singles at Arlington Res. on 21 Feb., Barcombe Res. on 30 Jan., both adult males, Glynde Levels on 22 Jan., Bishopstone on 20 Feb., Bopeep on 27 Mar., Cuckmere on 30 Jan., Beachy Head on 15 Mar. and 6 Oct. and Bewl Bridge Res. on 7-24 Oct., all ring-tails, make no very clear pattern.

108. **SPARROWHAWK** (*Accipiter nisus*):—Thirteen pairs were proved to breed, 11 of them certainly rearing 28 young, a rather lower success rate than in 1982, underlined by a report from 1 observer that 3 regular breeding sites were unoccupied. Thirty-four further occupied territories were located and birds were seen in 45 other sites during the breeding season.

Individuals were recorded from 47 of the above 89 sites outside the breeding season, when another 45 sites were also noted. Apparently migrant birds at the coast were seen in Apr. (1), May (1), Sept. (5), Oct. (7), Nov. (8) and Dec. (1). See also the paper on page 74.

109. **COMMON BUZZARD** (*Buteo buteo*):—Only 1 bird was recorded as resident, in West Sussex, and another was wintering there. One was found dead, 'wired', in Laughton Churchyard on 11 Dec.

Other records, presumably of migrant or transient birds, were noted in Mar. (4), Apr. (1), May (2), Aug. (4), Sept. (8), Oct. (5), Nov. (1) and Dec. (1).

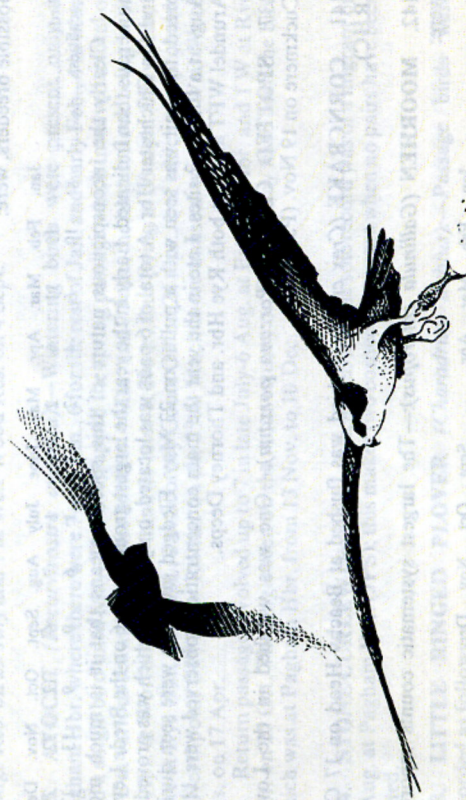
113. **OSPREY** (*Pandion haliaetus*):—One at Bewl Bridge Res. on 21 Apr. and, possibly a second bird, on 24th.

In the autumn a series of records from Bewl Bridge and Darwell Res. possibly only involved 3-4 birds. These were 1 at Bewl Bridge on 20 Aug. which departed S to Darwell, singles at Bewl Bridge on 1, 7 and 23 Sept. and, at Darwell, the bird of 20 Aug., 2 on the 28th and 1 from 18-25 Sept. One flew W at Birling Gap on 2 Oct.

115. **KESTREL** (*Falco tinnunculus*):—In the breeding season recorded from a total of 141 sites. Of these 107 qualified as occupied territories (a minimum of 3 records Apr.-Aug.). Breeding was proved for 25 pairs, 24 of them being known to raise at least 45 young. The average brood size of 1.87+ was well below that of the last 2 years and 4 pairs failed to rear any young. Probably the wet spring contributed to this reduction in breeding success, making it more difficult for males to hunt successfully. A high proportion of the occupied territories were located in a large block of central Sussex extending from Horsham to Worthing. Here a total of 55 territories was found on c.700 sq. Km; at least 30 other known sites in this large area were not reported upon.

Forty-seven per cent of the breeding season sites also held birds in winter and, of 37 other winter sites noted, 73% were known breeding season sites missed in 1983. Thus there was little evidence of any winter influx such as noted in 1982. The largest autumn party noted was of 12 at Lullington Heath on 20 Aug.

As usual a few migrants at the coast, with 4 arrivals, 2 departures and 1 coasting W between 8 Oct. and 9 Nov.



118. **MERLIN** (*F. columbarius*):—Monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	Sept.	Oct.	Nov.	Dec.
5	3	1	1	1	2	6	10	8

Two wintering birds were present on the Selsey Peninsula until 26 Feb. and 1-2 from 8 Oct.; 1 around Chichester Hbr. until 20 Jan. and 1-3 from 8 Oct. Quite possibly these records overlap. One was present around Rye Hbr. until 13 Feb. and 1-3 from 21 Oct. Merlins are often difficult to keep track of when wintering and the above records appear to involve at least 7 birds and possibly a maximum of 12. Other winter records were singles at Baisdean on 22 Jan., Shoreham on 24th, Cradle valley on 3 Dec. Newhaven Tidemills on 19th and Ardingly Res. on 30th.

There were other inland records at Hurst Green on 7 Nov. and Bewl Bridge Res. on 13th which were presumed to be migrants. Otherwise 3 apparently migrant birds were noted in spring at the coast between 3 Mar. and 4 May and 6 in autumn between 22 Sept. and 15 Nov.

119. **HOBBY** (*F. subbuteo*):—Recorded from 21 Apr. to 20 Oct. A total of 7 breeding pairs was located, rearing not less than 11-13 young. Monthly totals of migrants at the coast were:

Apr.	May	June	July	Aug.	Sept.	Oct.
2	11	4	1	3	12	6

123. **PEREGRINE** (*F. peregrinus*):—A first winter male, ringed as a nestling in Hordland, Norway, was found dead in a bramble bush at Balcombe on 5 Jan. (GdF). A female at Thorney Deep on 13 Jan. (PC), 1 in off the sea at Widewater on 13 May (AJP), 1 W over Seaford on 23 July (PJW) and 1 at Beachy Head on 8 Nov. (RHC).

131. **QUAIL** (*Coturnix coturnix*):—Ten heard calling. One was near Cissbury from 22 May to 6 June and another at Rye Hbr. on 15 June flew E along Camber Dunes calling while it flew. The other 8 birds were scattered at typical downland sites and were heard between 3 July and 7 Aug.

Cat. C. GOLDEN PHEASANT (*Chrysolophus pictus*):—A pair was seen at West Dean on 23 Jan.

136. **WATER RAIL** (*Rallus aquaticus*):—Approximate monthly totals, excluding possible breeders, were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
15	19	11	6	2	1	1	7	9	12	32	29
8	10	6	4	2	1	1	6	9	9	13	17

Clearly the inconspicuous nature of this species means that it is much more numerous than indicated. Early in the year the largest groups were 6 on the Brede Levels and 4 in Chichester Hbr. A total of 6 pairs was located, only one of which was proved to breed; this pair was seen with a pullus on 23 May. Fledged juveniles were seen during Aug. at a further 2 sites. Late in the year the main concentrations observed were 11 at Arundel WFT and 6 at both Rye Hbr. and Thorney Deep.

137. **SPOTTED CRAKE** (*Porzana porzana*):—One was watched in the Lower Cuckmere on 19 Nov. (PJW).

141. **CORNCRAKE** (*Crex crex*):—A bird was flushed at Beachy Head on 17 Oct. (RHC).

142. **MOORHEN** (*Gallinula chloropus*):—The largest systematic counts reported were:

Jan.	Feb.	Mar.	Apr.	Sept.	Oct.	Nov.	Dec.
62	53	48	22	12	3	64	30
76	95	43	13	15	30	46	80
30	30	30	15	13	30	71	18

In Jan. there were 98 at Chichester GP where up to 38 fed in one field of winter cereal. Breeding was reported from many inland waters. Late in the year the numbers were low except at that winter cereal field at Chichester GP where numbers increased from 53 on 22 Oct. to 66 on 28th, 123 on 16 Nov. and reached a peak of 153 on 3 Dec.

145. **COOT** (*Fulica atra*):—The principal counts were:

Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.
900	923	453	1084	1200	1358	843
210	282	76	95	139	280	908
656	—	—	832	—	—	—
322	295	152	6	—	19	247
108	118	—	—	223	—	299
225	87	200	—	—	—	—
42	34	44	250	280	250	140
192	190	61	87	121	173	196
129	94	60	30	24	28	39

Early in the year peak counts at other sites included 98 at Ardingly Res., 88 at Burton Pond and 62 at Arlington Res.

Few breeding details were submitted but c.25 pairs were at Weir Wood Res., 23 nests were found at Bewl Bridge Res. and c.20 pairs were at Rye Hbr. SSSI. Later in the year additional peaks were 49 at Barcombe Res., 51 at Swanbourne Lake and 61 at Burton Pond.

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

	1983			1984						
County totals	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chichester Hbr.	2497	1813	1346	1613	2220	1849	2196	2613	2115	1772
Rye Hbr.	1126	1137	470	1158	1440	1044	1172	1286	901	663
Pagham Hbr.	600	370	370	55	305	312	526	699	590	502
Climping	58	200	189	360	320	200	361	328	272	306
	505	198	118	40	154	288	135	300	352	300

Numbers have remained remarkably steady over recent years, but this year there were few noted away from the major sites. Spring passage was thinly spread from Mar-May; totals of 277 went E. at Brighton Marina, 231 at Hove and 224 at Worthing.

Breeding numbers were slightly higher with 25 pairs at Rye Hbr. and 11 pairs again at Pagham Hbr., where they raised at least 6 young. The documented non-breeding flocks were 149 at Rye Hbr. and 50 at Littlehampton. Inland records were of 2 at Bewl Bridge Res. on 29 July and 1 at Weir Wood Res. on 4 Sept.

153. **AVOCET** (*Recurvirostra avosetta*):—Wintering birds were present only at Pagham Hbr. where there were 7 on 2 Jan., 6 for the rest of Jan. and early Feb., 4 in Mar. and a single bird until May. This overlapped the spring passage which involved a total of 24 E at various seawatching sites between 4 Mar. and 7 June, the largest flock being 14 on 10 Apr. at Worthing, then 23 minutes later at Hove, thus flying at 26 mph. Elsewhere, 9 were at Rye Hbr. on 4 Apr., 2 at Scotney Court GP on 24 Apr., 1 of which was probably at Northpoint GP/River Rother on the 25th. Much more unusual was 2 at Weir Wood Res. on 17 Apr.

Return passage involved up to 7 in late July-6 Aug. at Pagham Hbr. and 1 W at Rye Hbr. on 25 Oct. The single seen on the Adur estuary on 12 Nov. may have been the bird which was at Pagham Hbr. from 13 Nov. to 10 Dec.

154. **STONE CURLEW** (*Burhinus oedicnemus*):—The sole record was of a migrant on 5 Aug. at Pagham Hbr. (JPS); this makes two consecutive years when no pairs have been noted.

158. **LITTLE RINGED PLOVER** (*Charadrius dubius*):—Passage birds were recorded as follows:

Mar.	Apr.	May	July	Aug.	Sept.	Oct.
2	7	4	12	14	8	5

Spring passage was noted from 27 Mar., when singles appeared at Hampden Park, Eastbourne and Bewl Bridge Res., until 21 May. Breeding season reports came from 2 localities but only one pair was proved to have bred, raising 3 young.

Autumn passage extended from 2 July, when 1 was back on Sidlesham Ferry, to 8 Oct. with 2 remaining at Chichester GP. Most autumn records came from Chichester GP (up to 6), Sidlesham Ferry (up to 2) and Pett Pools (up to 3).

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

	1983		1984		1983		1984			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	912	522	200	1542	1014	784	748	945	735	252
Chichester Hbr.	270	162	60	824	322	202	388	289	274	54
Pagham Hbr.	178	36	55	374	259	97	11	140	101	37
Goring	122	109	15	97	102	165	93	260	170	—
R. Adur	200	140	8	107	160	182	80	130	109	77
Rye Hbr.	3	3	40	118	64	5	44	5	15	28
Climping	110	69	3	—	20	84	75	50	24	50

The slow increase in wintering numbers, particularly since 1975, has continued; perhaps this is most noticeable in Chichester Hbr. where it used to be unusual to see more than 150 in mid-winter. Similarly, it was as long ago as 1968 that more were recorded in autumn. The spring passage was a record low, with only 26 E at Worthing.

Although several areas were not surveyed for breeding birds, a total of 83 pairs was located. They were at Rye Hbr. (36 pairs), Pagham Hbr. (30), Shoreham beach (c.5), Widewater (4), Selsey West Beach (3), Brighton Marina and Goring Gap (2) and 1 in the Cuckmere. A pair was displaying at Cissbury on 14 Apr. but did not stay. Breeding success was considered to be quite good, except at Pagham Hbr.

During the autumn passage, there were only 2 inland records — at Chichester GP on 23 July and Bewl Bridge Res. on 6 Aug. Birds were widespread at coastal sites in Aug., the following maxima being noted: Chichester Hbr. 614 (14th), Rye Hbr. 134 (14th), Cuckmere 80 (25th), R. Adur 77 (18th), Goring 35 (14th), Pett Pools 30 (18th), Widewater 23 (3rd) and Newhaven 15 (27th). In winter a new roost of up to 20 has become established at Brighton Marina.

165. **GOLDEN PLOVER** (*Pluvialis apricaria*).—Numbers reported from main coastal sites were:

	1983		1984		1983		1984			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	3451	1779	895	90	485	210	155	415	801	935
Chichester Hbr.	1669	237	340	150	200	155	514	224	460	17
Pevensy Levels	900	750	350	0	68	36	515	256	103	0
Pagham Hbr.	570	238	190	0	0	0	0	0	0	0
Rye Hbr.	112	0	0	0	0	0	0	0	0	0
Pett Levels	200	—	15	—	—	—	—	—	—	—

The absence of detailed counts from Pevensy and Pett Levels and Bracklesham Bay prevents a full picture from emerging, but with the mild weather, numbers were clearly low. In Bracklesham Bay 496 on 30 Jan. dropped to 45 by 27 Feb., but the unpredictable nature of the species was demonstrated by 800 being found on 5 Mar. At nearby West Wittering, counted within Chichester Hbr., there were 1,000 on 1 Mar., 450 of which were there on the 29th. More unusual flocks included 120 at Ringmer on 23 Jan. and 36 on the Upper Adur Levels on 8 Jan. The last birds were 1 in the Cuckmere on 16 Apr., 100 at Rye Hbr. on 22nd and a relatively large flock of 22 in Chichester Hbr. on 20 May.

In the autumn, the first was at Rye on 1 Aug. and by the 13th, 9 were on Thorney Island. Numbers remained low.

166. **GREY PLOVER** (*P. squatarola*).—The estuary counts are shown on page 23.

The very large late autumn influx seen in 1982 was not repeated, but mid/late winter numbers were again high. At other coastal sites, no more than 7 were seen. In the winter an unusual movement was 26 E at Widewater on 13 Jan.

The spring movement was very poor, with a total of 105 E at Worthing, 96 at Selsey Bill, but only 25 at Brighton Marina. The peak counts were of 59 at Selsey on 20 Apr. when 25 passed Worthing. One flew E at Chichester GP on 24 Apr.

Potential summering birds included 180 in Chichester Hbr. on 30 May and 60 on 31 May in Pagham Hbr., but the only positive record was of 2 at Rye Hbr. By 14 Aug. 1,157 were back in Chichester Hbr. During the autumn passage there were several inland records, the first being 2 SW over West Chiltington on 30 Aug.; at Arlington Res. 2 were seen on 19 Oct. and singles on 25 Oct. and 11 Dec.

	1983		1984		1983		1984			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	1525	1182	1753	1447	1104	1264	1249	1331	1541	1199
Chichester Hbr.	477	494	303	997	687	1073	1263	1331	1541	1199
Pagham Hbr.	54	13	80	0	406	149	357	627	667	600
Goring	—	—	—	—	—	0	114	268	230	0
Climping	67	41	50	—	—	40	54	52	0	—
Pett Levels	—	—	—	—	—	—	—	—	—	—

169. **LAPWING** (*Vanellus vanellus*).—Counts from coastal sites included:

	1983		1984		1983		1984			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Pevensy Levels	3500	2800	2500	2000	—	717	2193	1404	3062	1541
Chichester Hbr.	2271	1475	176	332	339	1037	2104	1087	1296	261
Pagham Hbr.	2603	975	5	187	—	260	2500	400	900	—
Adur Levels	2000	300	20	—	—	88	60	1400	1400	2
Cuckmere	2500	450	1000	88	60	450	1400	1600	1400	—
Rye Hbr.	986	165	94	189	461	1461	486	700	961	1343

Early in the year no other large flocks were noted, 800 around Barcombe Mills Res. on 2 Jan. being the largest. No substantial cold weather movements were seen.

Few breeding season counts were received, but at Bewl Bridge Res., the Brede Levels and in the Midhurst area, numbers were disappointingly low: intense grazing and agricultural changes were commented upon. However, at Rye Hbr., 80 pairs were located (cf. 69 in 1982). At Arundel WFT the first chick hatched on 28 Apr., but probably only 2 pulli fledged from 5 broods.

First flocking of post-breeders was at Rye Hbr. on 27 May, but elsewhere small flocks were first seen moving on 16 June at Beachy Head, 19 June at Upper Beeding and 21 June at Hastings. The species was relatively scarce late in the year, but on 31 Dec. there were 2,100 in the Barcombe Mills Res. area.

170. **KNOT** (*Calidris canutus*).—Outside passage periods only consistently seen in Chichester Hbr., where the estuary counts revealed:

	1983		1984		1983		1984			
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	580	200	20	16	4	1000	818	450	440	1

The only other early winter records were on 4 Jan. and 1 Feb., when 28 were present in Pagham Hbr. and a single on 22 Feb. at Rye Hbr.

Spring coastal movements were virtually non-existent, with 15 E on 19 Mar. at Littlehampton, 20 E at Brighton Marina on 24 Apr. and only 7 E at Worthing all spring. Up to 11 were seen at this time at Rye Hbr., with 1 summering at Pagham Hbr. 1 was present all May and, unusually, there were 10 on 18 June.

Early returning birds were at Pagham Hbr. on 12 July, Rye Hbr. on 14th and Widewater on 25th. Thereafter seen in small numbers at several coastal sites up to 29 Oct.; maxima were 7 at Rye Hbr. on 28 Aug., 6 at Pett Pools on 12-14 Sept., 4 on the Adur on 19 Sept. An unusual peak of 70 was in Pagham Hbr. on 11 Sept. Inland there was 1 on Weir Wood Res. from 22 Sept. to 2 Oct.

171. **SANDERLING** (*C. alba*).—The fickle nature of the appearance of this species is well illustrated by the numbers at the main coastal sites which were:

	1983			1984		
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.
County totals*	646	329	787	80	404	306
Chichester Hbr.	376	15	385	0	230	160
Rye Hbr.*	235	95	134	75	40	95
Climping	24	134	182	4	0	31
Goring	11	85	71	0	0	4

*Note Jan-Mar. figures update those in the 1982 report.

Some visits to each of these main sites in each month revealed virtually no birds, but on others a good flock was present. The only other flocks seen were 30 at the Cuckmere on 26 Feb. and 15 at Pagham Hbr. on 19 Mar. In spring Rye Hbr. had 98 in late Apr. and 110 up to mid-May, while at least 65 were in Chichester Hbr. on 21 May. Coastal passage was reasonable at Worthing where 286 went E, with a maximum of 47 on 19 Apr., but elsewhere it was poor. Inland 1 was at Chichester GP on 24 Apr.

The last spring bird was seen at Rye Hbr. on 12 June, where the first returned on 2 July, followed by another on the 11th. July brought arrivals to Chichester Hbr. on 17th and the Adur on the 18th and 4 at Pett Pools on 27 Aug., but numbers were then very low.

175. LITTLE STINT (*C. minuta*):—The best showing for several years with approximate monthly totals as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	1	1	1	2	—	—	2	15	74	49	1	—

The wintering individual on the Adur remained until at least 9 Mar. and may have been that seen at Widewater on 9-11 Apr. The other spring record was 1 at Church Norton on 10 Apr. The first of the autumn was at Sidlesham Ferry on 30 July, but few were then seen until late Aug. On 12 Sept. 8 were at Pett Pools with 6 at Sidlesham on 16th, but the main arrival occurred on 25th with 11 at Sidlesham Ferry, 11 at Cuckmere Haven and 9 at Pett Pools, increasing to 13 on 26th. Numbers then dwindled throughout Oct. with 2 still at Sidlesham on 30th and 1 at Cuckmere Haven on 20 Nov. There was a scattering of records away from the usual sites as would be expected in a good year.

179. TEMMINCK'S STINT (*C. temminckii*):—One flew E from Pett Pools on 17 Sept (MSH), it was the only record.

180. PECTORAL SANDPIPER (*C. melanotos*):—Five recorded. The Society's pumping at Pett Pools reaped dividends this year, for after 1 was seen at Northpoint GP on 6 Sept. (CB, BB), it presumably moved to Pett Pools the next day (RKH) and was joined by another on the 8th. On the 9th there were 3; these remained to the 14th, after which 1 was seen regularly until the 18th and again on the 25th and 30th. This flock is probably the largest recorded on mainland Britain. At Waltham Brooks 2 different individuals were seen on 10 Sept. (ARK) and 8-10 Oct. (ARK, DHH, JD). By far our best year ever.

182. CURLEW SANDPIPER (*C. ferruginea*):—A very poor year for this species, made somewhat surprising by the good numbers of Little Stint. The approximate monthly totals were:

	Apr.	May	June	July	Aug.	Sept.	Oct.
	1	1	—	6	8	5	6

Most records came from Sidlesham Ferry with singles on 18-19 Apr. and 21 May. Birds returned here on 12 July. Three which appeared here on 28 July remained to 5 Aug. and 1 was present from 29 Aug. into early Oct. with 2 in late Sept. and on 6 Oct. Away from Sidlesham, singles were seen at Littlehampton, Cuckmere Haven and Rye Hbr. in late July and Aug., with 2 on the R. Adur on 26 Sept. In Oct. records came from Chichester GP on 1st, 2 at Arlington Res. on 5th and 1 on the Adur to 15th. Surprisingly none was reported from Pett Pools.

183. PURPLE SANDPIPER (*C. maritima*):—The numbers at the main sites were:

	1983			1984						
	Jan.	Feb.	Mar.	Apr.	May	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	53	55	48	47	3	1	—	—	38	35
Newhaven Hbr.	33	33	32	32	—	—	—	—	18	22
Bexhill	11	9	5	—	—	—	—	—	9	—
Littlehampton Hbr.	5	10	8	11	2	—	—	—	8	8
Shoreham Hbr.	4	2	2	1	—	—	—	—	—	2
Brighton Marina	2	1	2	2	1	—	—	—	—	2

Early on, numbers were slightly below the record numbers of 1982. The only others seen were 1 at Rye Hbr. on 15-16 Apr. and 1 E on 4 May at Brighton Marina. Birds were quite late departing, with the last at Shoreham and Brighton Marina on 11 Apr.; 28 were still at Newhaven on 19 Apr. and 9 were at Littlehampton on 28 Apr., where the last 2 were seen on 1 May.

An early bird fed in the Cuckmere from 25-27 Aug. but no others were recorded before 5 Nov. and numbers were particularly low.

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

	1983			1984						
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
County totals	32145	14056	5354	632	2522	25427	23233	22721	33198	26600
Chichester Hbr.	25785	9193	2798	144	1707	21883	18870	18280	28293	10688
Pagham Hbr.	4314	2006	1623	329	537	2809	3005	3260	3587	3106
R. Adur	1130	1300	60	—	80	500	425	450	600	620
Goring	—	75	416	2	—	0	280	550	300	0
Rye Hbr.	12	399	73	142	133	159	470	35	350	235
Pevensey Bay	310	180	350	—	—	—	—	—	—	—

The very high numbers at the end of 1982 and in Jan. fell away rapidly through Feb. and Mar. A sharp build-up was apparent between mid-Oct. and mid-Nov., but the numbers did not reach last year's peak. Small numbers were at other coastal sites, with 4 at Waltham Brooks on 26 Feb. being the only inland record early in the year.

On spring migration up to 2 seen at Waltham Brooks between 17 Apr. and 4 May, 1 at Barcombe Mills Res. on 12 Apr. and up to 9 at Widewater. At Worthing 245 passed E with a maximum of 40 on 5 May. Up to 4 remained all summer in Rye Hbr.

The first returning birds were noted on the Adur and Pagham Hbr. on 1 July; at the latter, regular counts showed a rapid build-up to 135 by 10 July. As always, autumn birds were seen widely inland, with up to 17 at Pett Pools on 29 Aug. and Widewater on 7 Aug., up to 5 at Waltham Brooks 19 July-3 Oct., up to 3 at Arlington Res. 18 Sept-5 Oct. and 2 at Bewl Bridge Res. 6 Aug-30 Oct. In winter, low water levels at Weir Wood Res. brought up to 6 between 28 Oct-17 Dec., 4 at Bewl Bridge Res. on 17-18 Dec. and 2 at Waltham Brooks on 27 Nov. At Horse Eye Level there were 35 on 28 Dec. A striking partial albino was at Pett Pools on 16-17 Sept. and caused some identification problems!

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

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	361	81	66	2	1	3	23	37	39	77	171	205
Pagham/Bracklesham	302	81	40	0	0	3	19	21	33	75	171	203
Other sites	59	0	26	2	1	0	4	16	6	2	0	2

The internationally important concentration of birds in the Pagham area was present at both ends of the year. From Oct. many of the traditional feeding fields in this area were vacated but birds returned to roost in the harbour. The only substantial flocks seen elsewhere were 59 in the West Wittering car park on 15 Jan. and the 26 at Chichester GP on 6 Mar. were possibly the same as 26 at Waltham Brooks on the 13th.

189. JACK SNIFE (*Lymnocyptes minimus*):—The mild winter weather at each end of the year meant that few birds were seen. The approximate numbers were:

	Jan.	Feb.	Mar.	Apr.	Oct.	Nov.	Dec.
Number of birds	1	3	1	9	2	2	7
Number of localities	1	3	1	2	2	2	3

Records were all of ones or twos except for up to 7 at Lewes in Apr. and 4 again in Dec. No birds were seen on the Crumbles and there was only 1 sighting on the Cuckmere this year, both sites which have had several wintering individuals in the recent past.

The latest in spring were 2 in Chichester Hbr. on 17 Apr. and the earliest returned on 30 Oct. to Bewl Bridge Res. and the Cuckmere.

190. SNIFE (*Gallinago gallinago*):—Small numbers were present in the county during the early part of the year. In Jan. the total seen was 1,700, in Feb. 1,400 and in Mar. 900. Even the peak count of 750 on Pevensey Levels on 17 Jan. was half that of 1981/82 winter, while the maximum of 100 on the Adur Levels was only a tenth of that winter. Other major concentrations were maxima of 213 at Pagham Hbr., 189 at Chichester Hbr., 150 at Pett Levels and 100-150 at Midhurst, Lewes and the Eastbourne Levels. While numbers decreased rapidly in Mar., there were still 100 at Lewes on 4 Apr.

The only records of drumming birds were singles in Ashdown Forest and at Arlington; there were 2 at Brede Waterworks and Robertsbridge. Obviously this does not indicate the real breeding numbers.

In autumn birds became noticeable at many sites during the first week of Aug. but winter numbers were very low with peak counts of 220 at Waltham Brooks on 5 Nov., 100 on the Adur Levels and Chichester Hbr. and 70 at Rye Hbr. Only up to 56 were seen at Pagham Hbr. but low water levels at Weir Wood Res. brought up to 43 on 19 Nov., a high number for this site.

194. WOODCOCK (*Scolopax rusticola*):—During both winter periods small numbers were present throughout the county. It is difficult to estimate arrival and departure dates, but on the Downs near Lewes, the last spring record was on 11 Mar. and the first autumn bird arrived on 3 Nov. One came in over the sea wall at Pett Level on 12 Nov.

Roding was recorded from 14 Mar. to 8 July in 25 sites, with 4 birds at Iping Common, Isle of Thorns Ashdown, and Stanstead Forest; there were 3 at Bream Wood Ashdown, Gills Lap, Wiggonholt Common and Brede High Woods.

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

	1983			1984		
	Jan.	Feb.	Mar.	Dec.	Jan.	Feb.
County totals	1404	449	639	674	640	537
Chichester Hbr.	787	140	615	347	550	494
Pagham Hbr.	617	307	14	32	57	90

During the first 3 months none was seen elsewhere except for an exceptional flock of 800 on Selsey West fields on 5 Mar.; it is not known if these involved the large Chichester Hbr. flock or were a migrant group.

Birds were seen in every month of the year with 2 at Rye Hbr. on 15 June and a maximum of 33 in that month at Pagham Hbr. Unusually a group of up to 27 were around the Chichester GP from 16 July-19 Oct. During the autumn passage, Chichester Hbr. had 188 on 13 Aug. and at Pagham Hbr. there were 46 on the 15th. Apart from occasional sightings at Rye Hbr. from 9 July to 3 Oct. and 2 at Pett Pools on 13 Aug. and 3-14 Sept., all the rest of the records were from the 2 main sites. Numbers were very low throughout the 1983-84 winter.

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

	1983			1984		
	Jan.	Feb.	Mar.	Nov.	Dec.	Jan.
County totals	648	752	134	304	529	840
Chichester Hbr.	608	751	130	26	300	467
Pagham Hbr.	40	0	4	5	4	20

Again it was very scarce away from Chichester Hbr. where numbers were generally low. Throughout June, 2 summered at Rye Hbr. while 44 in Chichester Hbr. in late May dropped to 23 in June. There were no inland records.

Coastal watchers in the spring were poorly rewarded for their efforts, Selsey Bill having a total of 900 E, Worthing 2,644 E, Brighton Marina 1,991 E and Beachy Head 980 E. The peak day at the last three sites was 24 Apr. when they had 474, 449 and 463 respectively, a day when Selsey recorded only 46; the best day here was the 21st with 351

E. A subsidiary peak was seen between 3-5 May. Passage was only regular between 16 Apr. and 6 May.

198. WHIMBREL (*Numenius phaeopus*):—The first of the spring was seen passing Selsey Bill on 1 Apr., followed by 2 in Pagham Harbour on the 7th; birds were general at coastal sites on the 10th. Sea-passage was variable, being quite good at Worthing where a total of 759 flew E, but moderate or poor elsewhere, with 163 at Selsey Bill, 696 at Brighton Marina and 306 at Beachy Head. Few days brought large numbers, but Worthing had 125 on 19 Apr., while the peak of 243 at Brighton Marina was seen on 22nd; at Beachy Head, the peak was 82 on the 21st, a day when 120 were in Pagham Hbr. The picture is complicated by variations in the coverage at each site as well as by the species often turning to move inland. In the spring 1-4 were recorded in 9 inland sites although 35 over Nyetimber on 6 May is unusual. The Rye Hbr. roost increased from 40 on 24 Apr. to 140 on 26th and 220 on 29th; it reached a peak of 309 on 4 May, but dwindled rapidly to 60 by the 11th and only 2 after the 21st. Spring passage was virtually over by 26 May with occasional birds to 31 May.

There were 3 singles in June, at Pagham Hbr. on 14th, S over Upper Beeding on the 19th and 1 regularly all month at Rye Hbr. The autumn migration was well spread out from early July, with only 4 inland records: at Ashcombe Bottom on 3 July, Waltham Brooks on 12 July, Southeast Bridge on 6 Aug. and Arlington Res. on 30 Aug. Autumn numbers were poor with maxima of 25 at Rye Hbr. on 23 July, 25 at Pagham Hbr. and 23 at Chichester Hbr. on 13 Aug. The last bird was seen on 29 Sept. at Rye Hbr.

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

	1983			1984		
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.
County totals	1888	1389	2048	1080	1147	959
Chichester Hbr.	1023	655	1253	869	1165	510
Pett/Rye Hbr.	496	452	448	224	100	400
Pagham Hbr.	321	168	312	189	222	219
Bracklesham Bay	13	98	35			

The typical late winter peak was apparent as birds gather prior to their return to breeding grounds. Numbers early in the year were average but from autumn onwards they were low. The absence of counts from Pevensey and Pett Levels in the 1983/84 winter has reduced the county totals, but sporadic counts of the nocturnal roost at Rye Hbr., may have included some birds which fed on Pett Level.

In the spring a few passage birds were seen at 5 inland sites. Summering individuals on the coast included 50 at Rye Hbr. and 22 at Pagham Hbr. There were several records from commons in the north-west but breeding was not suspected. On Ashdown Forest, however, occasional birds were seen in 3 areas, in 1 of which breeding was suspected but not proven.

By mid-June migrants had been recorded from 4 sites. The rapid autumn build-up was apparent from 300 at Rye Hbr. on 20 July, 193 at Pagham Hbr. on 1 Aug., while on 13 Aug. there were 1,287 in Chichester Hbr.

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

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	6	11	2	6	0	11	5	16	23	6	4	3
Chichester Hbr.	3	9	1	2	0	6	0	3	14	1	1	0

An average year, although numbers in early winter in Chichester Hbr. were quite high; their absence here at the end of the year is probably due to the excessive disturbance on Thorney Island as 6 were present on 1 Jan. 1984. The Apr. total included singles at Waltham Brooks, Chichester GP and Arundel WFT indicating a small movement; the last was at Pagham Hbr. on 29 Apr. Autumn migrants in superb summer plumage returned to Rye Hbr. on 18 June and on the next day also at Chichester Hbr. and Pagham Hbr. All autumn migrants were at coastal sites apart from 2 at Chichester GP on 6 Aug., 1 there on 3 Sept. and another on the Glynde Reach of the R. Ouse on 11 Sept.

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

	1983		1984		1983		1984	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
County totals	3497	1832	1377	1095	2037	1634	1939	1925
Chichester Hbr.	2516	1000	927	562	1433	1101	1341	1265
Pagham Hbr.	686	420	259	460	354	327	391	403
R. Adur	116	300	43	58	64	68	115	110
R. Arundel	72	52	48	82	78	67	53	55
Cuckmere	43	33	23	41	80	48	45	59

Early in the year there was a very large count at Chichester Hbr. but numbers fell away rapidly. The 300 in Feb. on the Adur was a record high for this area and the 686 at Pagham Hbr. in Jan. was also a notable peak.

No systematic survey was made of breeding numbers, but there were increases from 1982 at Rye Hbr. SSSI (29 pairs *cf.* 23) and on the Adur Levels from 1 to 4 pairs, although this is still well below the 1980/81 level of 10 pairs. A disappointing 2 pairs were on the Brede Levels while 4 pairs bred at Arundel WFT and 3 at Chichester GP.

In autumn 1,131 were on Thorney Island by 24 July and at Rye Hbr. numbers doubled from 62 on 13 July to 120 on the 26th. At Chichester Hbr. the main roost on Thorney was severely disturbed, so numbers were well down.

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

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	5	5	6	6	1	3	67	192	128	58	3	0
Chichester Hbr.	4	4	6	3	0	0	48	137	109	45	2	0

As always, most wintering birds were found in Chichester Hbr.; the only inland migrant in spring was 1 on 29 Apr. at Waltham Brooks. As birds returned in July, the flock on Thorney Island built up rapidly with 48 on 24 July, 88 on 13 Aug. and 137 on 28 Aug. before dropping to 109 on 10 Sept. and 45 on 23 Oct. During the peak month of Aug. they were seen at 14 sites including maxima of 12 at Pett Levels, 10 at Pagham Hbr. and 6 on Glynde Reach.

206. **LESSER YELLOWLEGS** (*T. flavipes*):—An immature gave many observers superb views between 3 Feb. and 7 Apr. at Eastbourne Levels (RKH, AJP *et al.*); it has been accepted by *British Birds*.

208. **GREEN SANDPIPER** (*T. ochropus*):—Recorded throughout the county in slightly higher numbers than last year, the approximate monthly totals being:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	13	12	10	14	2	17	78	63	34	22	16	18

The July-Oct. and annual totals of birds were 172 and 254 with respective 3 year moving averages of 158 and 232 continuing the upward trend since 1975.

No more than 3 were seen together until 5 at Waltham Brooks on 19 June, reaching a peak of 17 there on 10 July when 9 were present at Thorney. Other notable concentrations were 20 at Chichester GP on 23 July and 14 at Chingford Pond on 1 Sept. with 6 still there on 14 Dec.; 6 remained at Darwell Res. from 18 Sept. to at least 18 Dec.

209. **WOOD SANDPIPER** (*T. glareola*):—An average showing, the approximate monthly totals were as follows:

	May	June	July	Aug.	Sept.	Oct.
County totals	—	1	7	13	5	—

One present on Sidlesham Ferry on 23 June presumably was the vanguard of the return passage. It was followed by 2 on 7 July at Waltham Brooks and 3 there from 11-14th. One was reported from Rye Hbr. LNR on 10th with 1 at Weir Wood Res. from 23rd and 2 at Sidlesham on 31st. In Aug. singles were recorded from Thorney, Pagham Hbr. (with 2 on 18th), Arundel, Weir Wood Res., Southsea and Rye Hbr. with up to 4 at Pett Pools from 18-23rd. In Sept. 2 were at Waltham Brooks on 10-11th with singles at Sidlesham on 18th, Rye Hbr. from 17-19th and Pett Pools on 19th and 25th.

211. **COMMON SANDPIPER** (*Actitis hypoleucos*):—Exceptional numbers were recorded in Aug. in what was an otherwise unexceptional year. The approximate monthly totals were as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
County totals	3	3	1	31	29	5	97	265	22	10	1	2

In Jan. 1 was present on the R. Ouse and 2 on the Cuckmere with 1 at each locality in Feb. and a third at Shillinglee Lake. One was at Littlehampton on 5 Mar. but otherwise the first migrants were not until 3 Apr. when 2 were seen on the Adur and 1 at Arundel WFT. Small numbers were recorded from many localities in a quiet spring, the last being at Ambersham on 7 June; the only records of note were 7 at Brighton Marina on 18 Apr. and 1 in a factory yard on Hollingbury Industrial Estate.

A few were recorded between 27 June and 4 July but it was mid-July before the species was widespread; the highest counts were 16 at Littlehampton and 11 on the Adur on 28th. Large numbers were seen throughout Aug. with a huge count of 66 in the Rye area on 14th; other high concentrations were 30 at Northpoint GP on 3rd; 16 at Southsea on 5th; 19 at Pagham Hbr. on 11th; 15 at Chichester GP on 13th; 18 at Waltham Brooks on 20th; 22 at Thorney on 24th and 14 at Bewl Bridge Res. on 29th. Sept. was very quiet in comparison with only 3 records after the 17th. Oct. records were widely scattered and the last migrant was at Selsey Bill on 5 Nov. Singles were seen at Pulborough and Piddinghoe in Dec., the latter possibly being the R. Ouse individual back again.

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

	1983			1984		
	Jan.	Feb.	Mar.	Sept.	Oct.	Nov.
County totals	817	362	680	561+	430+	280+
Pagham Hbr.	130	72	62	301	351	160
Pett Levels	280	60	200	—	—	—
Rye Hbr.	0	0	0	226	5	5
Chichester Hbr.	217	48	126	26	115	129
Pevensay Bay	180	140	160	—	—	—

In addition, during the first winter period, a flock of 200 at Littlehampton in Jan. decreased to 50 in early Feb. There were 63 at Selsey Bill on 27 Mar.

The up-channel spring movement between 16 Apr. and 16 May was the worst on record with only 27 passing E at Selsey Bill, 23 E at Worthing and 11 at Brighton Marina.

At Pagham Hbr. about 30 summered, as did 6 at Rye Hbr. Early autumn gatherings were poorly documented with maxima of 251 at Rye Hbr. on 8 Aug., 107 in Chichester Hbr. on 13 Aug. and 70 at Pett Pools on 20 Aug.

216. **GREY PHALAROPE** (*Phalaropus fulicarius*):—1982:—One present at Pett Pools 7-10 Jan. (KB, CHD); 1 at Ardingly Res. on 27 Sept. (MJH).

1983:—One was seen at Nutbourne Marshes on 7 Jan. (JDHE). While few were seen in the autumn, 1983 will be remembered for the long stay of 2 very obliging pairs of individuals. One on the Cuckmere oxbow from 17 Sept. (GNO *et al.*) was joined by a second on 22nd, both remaining to 24th and 1 to 25th (MO). Not to be outdone, Sidlesham Ferry had an even more watched pair. One on 15 Oct. (ACM *et al.*) being joined by a second on 16th and both remaining until 28th (MO). One was seen on the sea at Brighton Marina on 18 Oct. (NAGL).

217. **POMARINE SKUA** (*Stercorarius pomarinus*):—One off Widewater on 7 Jan. (AJP) was exceptional, being the first winter record since 1924, but just 1 of several skuas in Sussex in early Jan. Spring passage along the south coast was very poor, see pages 60-63 for a discussion of this subject. On 20 Apr. an early individual was seen off Worthing and passed Hove 37 minutes later (travelling at c.27 Km per hour). Another passed Hove on 26 Apr. but between 4-11 May only 14 were identified with 3 at Selsey Bill; 4 off Widewater (on 9th); 3 at Brighton Marina and 3 at Beachy Head. On 17 May 2 flew past Brighton Marina, at least 1 of which passed Worthing 35 minutes earlier (travelling at c.34 Km. per hour). The last were 2 W at Worthing on 23rd.

There were 3 autumn records: singles at Pagham Hbr. on 7 Sept. and W past Selsey Bill on 23 Aug. and 15 Oct.

218. **ARCTIC SKUA** (*S. parasiticus*):—One at Newhaven on 2 Jan. (DN, RGB) was the first winter record for 9 years, but see also other skua records at this time. One passed E off Worthing on 3 Apr. and spring passage between 10 Apr. and 12 May was exceptionally heavy, as follows: Selsey Bill 180, Worthing 163, Hove 31, Brighton Marina 126, Seaford 10 and Beachy Head 94. Peak passage occurred from 21 Apr. to 4 May with peak daily counts of 20 at Selsey Bill on 21 Apr., 24 at Beachy Head on 23rd and 21 at Brighton Marina on 26th. Further details can be found in the paper on pages 60-63. It is difficult to determine the amount of duplication in these records, but at least 270 birds must be involved. Three passed E off Brighton Marina on the late date of 30 May with 1 there on 19 June. Other summer records were singles off Worthing on 6 June and at Rye on 17 July.

Autumn passage was poor. Singles passed E off Brighton Marina on 9, 10 and 22 Aug. with 2 at Bexhill on 20th. All other records were in the period 29 Aug. (8 at sea c.8 Km S of Newhaven) to 29 Oct. but only 52 were reported in all. Of note were 2 SW over Crowborough on 23 Sept. (PCB), inland records being rare. An adult W off Worthing on 18 Dec. (JAN) provided another rare winter record.

220. **GREAT SKUA** (*S. skua*):—Singles in Jan. at Friars Bay, Newhaven on 1st-2nd, Selsey Bill on 6th and Ferring on 11th may have referred to 1 individual as might 1 at Selsey Bill on 13 Feb. and Brighton Marina on 26th. Spring passage was good, extending from 1 Apr. to 30 May with birds recorded flying E as follows: Selsey Bill 18, Worthing 18, Brighton Marina 9 and Beachy Head 21. A minimum of 43 birds was involved in the movements and peaks were 10 passing Beachy Head on 23 Apr. with 4 there and 5 at Worthing on 24th. Further details appear on pages 60-63.

In the autumn between 15 Sept. and 15 Oct. a total of 19 were reported along the coast including 5 at Beachy Head on 18 Sept. Dec. records were singles at Selsey Bill on 20th and at Brighton Marina on 25th and 30th.

222. **MEDITERRANEAN GULL** (*Larus melanocephalus*):—A remarkable year with a record 66 individuals noted comprising 32 adults, 8 sub-adults and 26 first year birds. The minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	—	6	13	23	2	2	7	6	4	6	5

There was no firm evidence to suggest overwintering although the first year recorded at Waltham Brooks and Arundel on 16 Jan. may have been the individual at Arundel on 18 Mar., and records of an adult at Chichester on at least 3 dates between 23 Oct. and 31 Dec. may refer to the same bird.

The spring records were very confusing, particularly between Seaford and Beachy Head where at least 4 adults, 2 sub-adults and 6 immatures were noted between late Apr. and early May. A further 16 individuals were recorded passing other regularly watched coastal sites between 15 Mar. and 31 May. Four adult pairs were recorded at separate sites during the summer months, but none remained for more than a few days.

No clear pattern emerges from the scattered summer and autumn records, and observations indicate that few birds stayed for long periods at any site, the possible exception being an adult at Rye between 29 June and 17 July and an adult at Pett between 23 Aug. and 27 Oct. During the year only 6 were recorded away from coastal areas, the most notable being 2 first year birds roosting at Weir Wood Res. from 26 Nov. to 5 Dec.

225. **LITTLE GULL** (*L. minutus*):—Winter records from Selsey Bill were a single W on 1 Jan., an exceptional 15 W on 6 Jan. and another single W on 2 Feb. Elsewhere the only winter record was 1 W at Brighton Marina also on 2 Feb.

Despite several days of fresh onshore and easterly winds spring passage was poor; the totals at the regularly watched coastal sites were 12 E at Selsey Bill, 29 E at Worthing and 22 E at both Brighton Marina and Beachy Head. At least 49 birds were involved but

the mediocrity of this is emphasised by the peak of 9 E at Beachy Head on 5 May being the lowest peak spring day since 1969. Singles at Chichester GP on 23, 28 and 30 Apr. were the only spring records away from the coast.

An immature stayed in the Rye area throughout June and into July when a few others were seen at different coastal sites. During autumn migration over half the records came from inland sites. At Arlington Res. up to 2 were recorded between 2 and 6 Aug.; at Weir Wood Res. many sightings between 13 Aug. and 20 Sept. suggested at least 4 individuals, with another on 16 Oct. On 23 Aug. 6 immatures were at Chichester GP, and there were 2 at Ardingly Res. on 12 Sept. No marked coastal movement was observed and the last autumn bird was noted at Chichester GP on 23 Oct. No more were observed until 3 Dec., after which a further 12 were seen along the West Sussex coastline and a single inland at Arlington Res. on 19 Dec. The minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	1	—	36	21	2	5	16	14	7	—	13

226. **SABINE'S GULL** (*L. sabini*):—1980:—An immature flew E at Selsey Bill on 2 Nov. (DJH, GRH, JVH).

1983:—An immature passed W at Worthing on 11 May (PH, MPH, JAN). These are the first seen in these months and only the second and third since 1971.

228. **BLACK-HEADED GULL** (*L. ridibundus*):—The total specifically identified during the co-ordinated roost count on 22-23 Jan. was 84,741 (see the summary on pages 64-68). Other large winter counts include 6,250 at Portobello on 12 Feb. and 1,400 inland at Faygate on 5 Feb.

The main dispersal of wintering adults from Worthing Beach had occurred by 20 Mar. and thereafter eastward passage was noted from there until late May with a total of 3,461 E and a peak movement of 658 E on 27 Apr. Fewer were noted from Brighton Marina and the peak movement there was 140 E on 23 Apr. Many of the parties seen passing E along the coast contain a high proportion of immature birds and the same observation was made on the 600-1,000 which roosted at Rye in Apr. and May.

A census of the breeding colonies revealed 1,069 pairs at Chichester Hbr., 1 pair at Pagham Hbr., 70 pairs at Rye Hbr. and 177 pairs at Scotney Court GP.

Breeding failure after the hailstorm was blamed for the unusual influx of 250 adults to Pagham Hbr. in mid-June and the high number of adults amongst the 849 at Worthing on 27 June. However, at Rye the late June roost of 500 were all immatures. A steady increase in numbers was noted throughout July at Brighton Marina; the roost at Rye Hbr. had increased to 2,000 by 22 July and the count on Worthing Beach had reached 5,220 by 13 July.

Significant counts later in the year include 2,000 following a downland plough on 28 Oct. and roost counts at Bewl Bridge Res. of 1,500 on 27 Nov. increasing to 8,000 on 29 Dec.

233. **COMMON GULL** (*L. canus*):—The co-ordinated gull roost count on 22-23 Jan. totalled 7,820 with the main concentration of 3,800 occurring between Angmering and Ferring beaches (see the paper on pages 64-68).

Counts on 4 Apr. included 250 at Small Dole refuse tip, 160 on the Downs near Devil's Dyke and 500 on downland near Lewes; this flock was only present for 1 day. On the coast, most evidence of migration also occurred in Apr. with the peak movement of 302 E at Brighton Marina on 21 Apr. An unusual leucistic first year was noted at Shoreham and Worthing between 17 and 24 Apr.

The numbers diminished throughout May, so by June very few were noted summering with a maximum of 12 at Rye Hbr. and only 3 along the entire length of Worthing beach on 27 June. By 9 July, adults were reported from 3 sites and by 13 July the count at Worthing had risen to 142.

Later in the year there were no counts to suggest unusual numbers.

234. **LESSER BLACK-BACKED GULL** (*L. fuscus*):—The total noted during the co-ordinated gull roost count on 22-23 Jan. was 115, with the maximum of 83 at Pevensy

and none recorded roosting inland. However, the largest numbers in the county occurred inland as revealed by the count of 190, including 40 of the Scandinavian race (*fuscus*) at Faygate on 2 Feb. Elsewhere winter records involved small numbers of both Scandinavian and British (*graelisii*) race.

Spring passage was unremarkable with only 45 noted passing Worthing during Apr. and May. Most of these were of the race *fuscus* as were the 14 at Pett Pools on 8 Apr.

Single breeding pairs were noted on the cliffs at Fairlight and on a Worthing roof top and 3 pairs occupied roof top sites in the Hastings/St. Leonards area.

Autumn records from mid-July involved only small numbers, the largest flock being 35 NE over Lullington on 29 Oct. By 31 Dec. at least 120 were gathered at Chichester GP.

235. **HERRING GULL** (*L. argentatus*):—The co-ordinated count on 22-23 Jan. revealed 3,476 roosting with the main concentration of 1,050 between Brighton and Saltdean and few roosting at the inland reservoirs (see the report on pages 64-68). At inland roosts the peak count of 54 at Bewl Bridge Res. occurred on 11 Feb. and at Darwell Res. the maximum number of 151 occurred on 18 Feb. During early Apr. 400 were still feeding at Beddingham refuse tip and 80 at Small Dole refuse tip.

An incomplete breeding survey revealed 697 pairs. Roof top sites were the most numerous with a total of 569 counted at Hastings, St. Leonards, Bexhill, Peacehaven and Worthing. The cliffs at Fairlight and Newhaven held 83 pairs, 38 pairs nested in gravel pits in the Rye area and 7 pairs on a chalk face near Lewes.

Mid-summer counts along the coast revealed maxima of 350 at Rye, 80 at Brighton, 299 at Worthing and 200 at Pagham, most of which were immature birds. Although clearly numerous and widespread during the autumn and winter, no counts were received.

The yellow-legged sub-species considered to be *michellii* was recorded regularly during the autumn in the Adur valley and Selsey peninsula, but counts suggest fewer individuals were involved than in 1982. The minimum monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1	—	—	—	8	43	36	21	27	2	1

236. **ICELAND GULL** (*L. glaucoides*):—The first summer individual at Littlehampton on 28 Apr. (KWM, AJP, MJWH *et al.*) was probably the same noted at Biring Gap on 5 May (RKH, MK *et al.*). Another first year was seen at Beachy Head on 5 Nov. (SPH, AJP, RKH).

237. **GLAUCOUS GULL** (*L. hyperboreus*):—A good year, the confusing picture suggesting a minimum of 9 and possibly as many as 17 different birds involved. The first year bird at Selsey Bill at the end of 1982 was seen from 1 Jan. until 17 Apr. although apparently absent during Feb. Presumably this bird was at Donnington on 22 Feb. and at Pagham Harbour on 14 Mar. Several observers felt this was the same individual recorded at Worthing and Shoreham on several dates between 14 Apr. and 19 May. Presumably a different first year was at Portslade on 15 Jan. and at Brighton Marina on 26 Jan. Another first year was at Langney Point between 15 Jan. and 27 June and this possibly was seen at Pett between 30 Jan. and 12 Feb. and at Biring Gap on 13 Mar. An adult was found dead at Pagham on 26 Feb. and a second year was seen at Rye on 4 Apr.

By 5 June the bird at Langney Point was showing a rusty coloured band along the rear edge of the coverts and this was also a marked feature on a first year which frequented the Adur Valley and Small Dole refuse tip from 28 June until 6 Aug. when it was moulting into second year plumage.

A first year arrived at Pagham on 21 Aug. and was recorded there until the end of the year and probably was the bird noted at Selsey between 8 Sept. and 30 Oct.

During Dec. a number of sightings of single first year birds probably relate to only 2 individuals; at Rye on 4 Dec., at Worthing on 11 Dec., at Bognor on 24 Dec. and at Littlehampton between 29 Dec. and 3 Jan. 1984. A second year at Small Dole refuse tip on 30 Dec. was considered to be smaller than the July bird and presumably a different, very large, second year was at Chichester GP on 21 Dec.

238. **GREAT BLACK-BACKED GULL** (*L. marinus*):—The co-ordinated roost count on 22-23 Jan. recorded a total of 825 with the largest concentration of 300 occurring between Brighton and Saltdean and only 7 noted roosting inland. (See the paper on pages 64-68). Inland counts in the winter usually involved small numbers; examples include 20 at Darwell Res. on 16 Jan., 80 at Glynde Reach on 16 Jan. and 38 at Faygate on 5 Feb. whereas coastal counts of 300 at Shoreham on 5 Jan. and 357 at Rye on 13 Feb. were not unusual.

Few were recorded in the spring and summer except at Rye where counts of the evening roost were 100 immatures on 24 Apr., 270 immatures on 19 May, 150 throughout June and 200 throughout July. On 19 May only 2 adults were noted, but by 14 Aug. half of the 200 roosting birds were adults.

During the autumn the pre-roost gathering on the R. Adur increased from 140 on 13 Sept. to 530 by 12 Oct. but on 21 Dec. only 360 were noted.

240. **KITTIWAKE** (*Rissa tridactyla*):—Small parties occurred offshore in the early months, the largest being 65 following a fishing vessel into Rye on 23 Jan., 30 at Brighton Marina on 24th and 28 offshore at Shoreham on 25th. Coastal movements were predominantly W: at Worthing 416 went W in Jan. with a peak of 111 in 3½ hours on 11th, likewise at Selsey Bill the Jan. total was 69 W and 15 E and at Rock-a-Nore a steady westward movement of between 5 and 10 per minute was observed on 4 Feb.

By Mar. offshore movements were E and most notably seen from Brighton Marina where 102 went E in 4½ hours on 3rd, 251 E in 5 hours on 12th and 629 E in 6½ hours on 13th. Much smaller E movements were noted further west continuing into Apr. and May, except at Selsey where the May movement was predominantly W.

The breeding colony on the cliffs between Newhaven and Peacehaven had almost doubled since 1981 to 597 occupied nests on 19 June.

The only inland records were 2 immatures at Arlington Res. between 2 and 15 Aug. Large coastal movements during the autumn are usually observed with fresh onshore winds; the 2 largest movements this year, atypically, occurred in fresh NE winds with 200 E at Brighton Marina in 1½ hours on 10 Aug. and 159 E at Worthing in 3½ hours on 14 Nov. Brighton Marina was used as a regular resting site during the autumn and winter, peaking at 105 on 4 Oct.

241. **GULL-BILLED TERN** (*Gelochelidon nilotica*):—1982:—An extraordinary flock of 7 birds flew E at Beachy Head on 13 May (BEC, RKH, TWP); they have been accepted by *British Birds* and are the first since 1978. This is the largest flock recorded in Britain (*cf.* 6 also in Sussex in 1952) and the most in a year since 1960.

245. **SANDWICH TERN** (*Sterna sandvicensis*):—One at Shoreham Harbour on 17 Feb. and 1 off Brighton on 25 Feb. were the fourth and fifth county records for the month. Easterly spring passage occurred from 13 Mar. to 31 May and involved a minimum county total of 7,054. Selsey Bill recorded a total of 3,713; Worthing 5,926; Brighton Marina 4,525; and Beachy Head 2,410. By far the best days were 10, 20 and 22 Apr. The details of counts on these days and a general summary for the species is given on pages 60-63.

At Chichester Harbour 36 pairs bred, raising at least 20 young to the flying stage. A single pair laid an egg at another site in the county, but this was later found smashed.

Autumn numbers at Rye Hbr. fell gradually from 230 on 31 July until the end of Sept. A single bird remained to 7 Oct. Coastal passage was small, Selsey Bill recording a total of 226 W between 3 Sept. and 17 Oct. (peak 86 on 5 Sept.). Inland records of up to 3 birds were received from 6 localities. On 23 Sept. 40 flew S over Weir Wood Res. and 32 passed in the same direction over Arlington Res.

246. **ROSEATE TERN** (*S. dougalii*):—Single birds flew E at Brighton Marina on 20 and 30 May. At Rye Hbr. there was a pair on 29 June and single adults on 25 Apr., 14-17 and 30 May and 5 June.

247. **COMMON TERN** (*S. hirundo*):—At Bewl Bridge Res. an exceptional 270 were seen on 20 Apr., a day of heavy 'Comic' Tern passage at coastal sites.

In Chichester Hbr. 70 pairs nested but details of breeding success are not known. The first birds arrived at Chichester GP on 21 Apr.; some 14-15 pairs nested on the Society's rafts, raising 15 young to the flying stage. At Rye Hbr., where the first record was on 21 Apr., 75 pairs nested, raising an estimated 60 young to the fledging stage. Autumn birds included a number passing over Weir Wood Res., where 69 in 2 flocks passed S on 23 Sept. The last were 2 in Chichester Hbr. on 23 Oct.

248. ARCTIC TERN (*S. paradisaea*):—One at Lancing on 24 Apr. At Seaford, a flock of 49 passed E on 6 May (RDME). One was seen at Rye Hbr. on 2 July and an adult was recorded at Bewl Bridge Res. on 7 Aug. In Sept., single birds were seen at Chichester GP on 3rd, at Pagham Hbr. on 5th, at Littlehampton on 8th, off Selsey Bill on 10th and off Hove on 18th. Up to 3 immatures were present at Chichester GP between 17-25 Sept. Oct. records were of 1 at Brighton Marina from 17th to 23rd and 1 in Chichester Hbr. on 19th.

247/248. COMMON/ARCTIC TERN (*S. hirundo/paradisaea*):—Spring passage occurred between 6 Apr. and 7 June, and involved a minimum county total of 12,636. Selsey Bill recorded a total of 2,368 E; Worthing 10,502; Brighton Marina 7,358; and Beachy Head 3,402. The largest movement took place very early on 20 Apr.; other good days were 22 Apr. and 4, 6 and 15 May. A discussion of the year and details of the peak days is given on pages 60-63.

Autumn passage was very light. At Selsey Bill a total of 267 W was recorded between early Aug. and 16 Oct. (peak 66 on 10 Sept.). The largest movement at Worthing occurred on 8 Sept. when 38 flew W. The last recorded was one at Chichester Hbr. on 19 Nov.

251. LITTLE TERN (*S. albigrons*):—First recorded in spring at Selsey Bill on 13 Apr. Easterly passage totals at the main localities between 13 Apr. and 27 May were: Selsey Bill 485 (peak 93 on 4 May); Worthing 687 (peak 109 on 4 May); Brighton Marina 196 (peak 35 on 5 May); and Beachy Head 53 (peak 19 on 6 May).

In Chichester Hbr. 22 pairs nested, but details of breeding success are not known. At Pagham Hbr. 20 pairs were present in early June, but no young were raised after being decimated by a freak hail storm in June. At Rye Hbr. LNR 67 pairs nested, rearing at least 50 young to the flying stage.

The number of birds seen on autumn passage was small. At Chichester GP 2 were present on 3 Sept. The last for the year was a single bird at Pagham Hbr. on 15 Oct.

253. BLACK TERN (*Chlidonias niger*):—First recorded in spring at 5 coastal localities on 20 Apr. Easterly passage totals at the main sites between 20 Apr. and 30 May were: Selsey Bill 13 (peak 5 on 22 Apr.); Worthing 35 (peak 15 on 20 Apr.); Brighton Marina 20 (peak 8 on 20 Apr.); and Beachy Head 40 (peak 33 on 6 May). Single birds were seen at Pagham Hbr. on 22 Apr., at Chichester GP on 22-23 Apr., and at Rye Hbr. on 5 May. Five were present at Bewl Bridge Res. on 5 May and up to 2 were seen in Chichester Hbr. between 15-24 May.

June records were of 1 W off Selsey Bill on 15th; 1 in Chichester Hbr. on 15th; 1 at Pagham Hbr. on 25th; and up to 2 at Rye Hbr. between 17th-21st. In July single birds were seen at Rye Hbr. on 10th and from 29th-31st. One was present at Pett Level on 28th. During Aug. some 36 were reported, whilst in Sept. the total was about 35. In Oct. up to 2 birds were present at Chichester GP between 1st-19th. Singles were seen at Pett Level on 1st and at Pagham Lagoon on 9th. A total of 6 was recorded at Selsey Bill between 1st-11th.

255. GUILLEMOT (*Uria aalge*):—Records from the coast were:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Dead	—	5	1	1	—	—	—	—	—	—	—	—
Oiled	—	5	1	1	—	—	—	—	—	—	—	—
Dead and oiled	—	25	2	—	—	—	—	—	—	—	—	—
Others	10	53	8	1	4	—	—	—	—	1	7	26
												15

257. RAZORBILL (*Alca torda*):—Reported from various coastal localities as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Dead	—	—	—	3	—	—	—	—	—	—	—	—
Oiled	—	—	—	—	1	—	—	—	—	—	—	—
Dead and oiled	—	—	—	2	1	—	—	—	—	—	—	—
Others	4	6	4	6	22	1	—	—	—	—	4	2

260. LITTLE AUK (*Alle alle*):—Four singles were recorded as follows: at Church Norton on 13 Feb. (CM), at Worthing on 23 Feb. (RJS), E off Widewater on 17 Nov. (NGM) and an exhausted bird at East Chiltington, Lewes on 20 Dec. (NC, CLH) was released at Beachy Head on 20 Jan. 1984.

261. PUFFIN (*Fratracula arctica*):—One on the sea at Worthing on 23 Feb. (RJS) was the only record.

AUK SPECIES:—Small numbers of unidentified auks were recorded moving east and west off Selsey Bill during Jan-Apr. but the main spring passage occurred in May, totalling 14 E and 175 W, with a peak of 40 W on 9th. Monthly totals from the Worthing coast were as follows:

	Jan.	Feb.	Mar.	Apr.	May	Sept.	Oct.	Nov.	Dec.
Passing E	13	19	5	8	33	1	5	8	11
Passing W	22	5	—	3	30	1	12	4	15

Cat. C. RING-NECKED PARAKEET (*Psittacula krameri*):—The flock based on Hollingbury Woods, Brighton reached a maximum of 8 late in the year; 1 pair bred, raising 3 young. Other records were 2 at Dell Quay on 17 Jan., 1 at Arundel on 27 June, 1 at Three Bridges on 12 July and 1 at Chichester GP on 8 Oct.

264. STOCK DOVE (*Columba oenas*):—Gatherings in the early part of the year included 7 of 50 or more, the largest being 100 on Thorney Island on 30 Jan. and a late flock of 107 on 23 Apr. at Hooe on Pevensey Levels. Small numbers were reported breeding or calling in many parts of the county, but the only systematic count was of 5 pairs in 60 ha at West Chiltington.

No immigration was suspected despite substantial movements of Wood Pigeons in Oct., but there were 200 at Beachy Head on 27 Oct. During the second half of Dec. numbers were high with 5 flocks of 50 or more reported, the largest being 100 near Shoreham, 100 at Rye Hbr. and 161 at Midhurst.

265. WOOD PIGEON (*C. palumbus*):—There were substantial movements in the autumn though few actual departures were noted. The main activity was on 20-23 Oct. during which time inland sites saw a predominantly S movement, i.e. 1,280 at Maynards Green and 4,420 through the Hurst Green/Crowborough area. On the coast, most turned E with 6,790 passing Brighton Marina and 650 at Selsey Bill. However it also included a W component with 3,000 W at Middleton on 22nd. After this up to 4,000 were on Beachy Head on 29th while in Dec. flocks of between 1-2,000 were at Ambersham Common, Pagham Hbr., Pyecombe, Saddlescombe and Shoreham.

266. COLLARED DOVE (*Streptopelia decaocto*):—At the start of the year there were only 3 gatherings of 50+, the largest being 100 at Rye Hbr. grain store and 84 at the Shoreham sanctuary. Late in the year 6 flocks were in this category with 100 at both Falmer and Cluntying, 106 at West Dean and the Rye Hbr. flock reached 300. Around East Grinstead, 35 territories were located in 1 sq. Km.

267. TURTLE DOVE (*S. turtur*):—The first bird arrived at Bishopstone on the average date of 20 Apr., followed on the 22nd by birds at Church Norton and Woods Mill and 2 days later at Cissbury and in the Cuckmere. At Rye Hbr. the main movement took place during the late period of 27 May to 7 June. The earliest singing was on 27 Apr. at Barcombe. Counts of breeding birds from defined areas appear on pages 46-47. Other counts included 5 pairs on Ambersham Common and 4 pairs in Park Farm, Ringmer.

No autumn concentrations of more than 10 were noted and the last birds in most coastal sites were seen during the period 3-8 Oct. The last birds were at Clipping on 31 Oct. and 1 was with Collared Doves at Somerley on 9 Nov.; this latter association sometimes leads to birds remaining for the winter, but apparently not in this case.

271. **CUCKOO** (*Cuculus canorus*):—Arrival was a little later than 1982 with the first at Cripps Corner on 10 Apr. and singles at Burgess Hill on 11th, Hurst Green on 12th, Kingston near Lewes and Cooksbridge on 15th and Stanmer Park on 16th; the species was noted at 9 localities on 17 Apr. Breeding season reports were widespread and more numerous than in 1982; in the two cases where foster parents were noted, they were Dunnocks.

Nearly all autumn records, up to 23 Sept. were of single birds on or near the coast. Late birds were at Windover Hill near Wilmington on 1 Oct. and East Brighton Golf Course on 3rd and 4th.

274. **BARN OWL** (*Tyto alba*):—The figure of 24 young raised is the highest recorded and shows an increase of 13 over 1982. These were produced from only 7 sites, 5 of which were in the west and north-west of the county. The reports of 23 known and probable pairs, 21 breeding season singles and 30 winter individuals were similar to last year. Two seen at West Wittering on 21 Aug. were considered to be dark breasted (MJ), whilst a clutch of 6 eggs at Northchapel also contained a duck's egg — presumably suitably despatched by FRS. Whereas some old-established sites were unused, new ones were established and overall coverage was again widespread, with no road deaths reported.

279. **LITTLE OWL** (*Athene noctua*):—From records received, there was a welcome upturn in this owl's fortunes. 52 pairs were known to have bred, an increase of 20, probable breeding pairs remaining static at 18. The figure of 45 young raised however, is the highest ever recorded. Breeding season singles decreased from 45 to 38 and isolated winter records rose by 4 to 29. The disaster at Rye LNR (SxBR 34: 34) was unfortunately repeated in 1983 when 12 adult and 30 young Little Terns were believed to have been predated by 4-5 pairs of Little Owls. There was 1 further rabbit burrow site reported.

280. **TAWNY OWL** (*Strix aluco*):—Counts of 44 pairs or calling birds last year indicated that this owl is still in decline, 89 pairs having been reported in 1979 and 1980. Fortunes were mixed however, as 21 young were raised from 11 sites — an increase of 12 juveniles, whilst breeding season singles declined by 10 to only 11, whereas isolated winter records increased by 15 to 30. There were 4 records from urban sites, 2 being successful. The number of breeding localities remained static at 40 and coverage was again low.

281. **LONG-EARED OWL** (*Astio otus*):—1982:—A migrant was at the Midrips on 9 Oct.

1983:—During the early months of the year wintering birds were found at only 3 sites with a maximum of 4 birds. Two of these sites were on the Downs, the third on the coastal plain.

In the breeding season a single bird was in the extreme east of the county on 1 date in June and a pair bred on the western Downs raising 2 young. This is the first confirmed breeding since 1979.

A maximum of 7 birds was present in the latter part of the year in 5 sites, 2 of which held 2 birds. One of these sites was on the Downs, the others being in river valleys on the coastal plain.

282. **SHORT-EARED OWL** (*A. flammeus*):—1982:—Up to 3 were at the Midrips from 9 Oct. to 31 Dec.

1983:—Approximate monthly totals were:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	10	14	16	5	2	—	—	2	5	14	12

The records indicate an average early part of the year with a small spring movement. The Jan. total includes 5 at Newhaven Tidemills (1 dead) and 4 were at Thorney Island in Apr. Two of the May birds were observed flying at considerable height (over 200 ft.) as was 1 on 13 Nov. which came in from the sea at Cuckmere Haven. Both Sept. records were on the 25th at Beachy Head and Pagham Hbr. LNR. The numbers late in the year were rather low.

284. **NIGHTJAR** (*Caprimulgus europaeus*):—Two early males were churring on territory at 2 sites in West Sussex on 6 and 8 May respectively. During the summer there were random records, nearly all from traditional sites, of 53 pairs or churring males, including 18 in East Sussex. The East Sussex figures included 14 from Ashdown Forest which was only partially covered, and the numbers compare not unfavourably with the last full count in 1981 when 23 pairs or males were found. Despite the warm summer, its belated general arrival probably explains the lack of any records suggesting double breeding. The last record was 1 at Woods Mill on 10 Sept.

289. **SWIFT** (*Apus apus*):—The first bird was seen at Chichester on 21 Apr. and at Chichester GP 7 were present the next day. During the following 4 days individuals were noted at Beachy Head, Arlington, Shoreham and Mannings Heath where 1 arrived on 24 Apr., the earliest date for this locality. No concentrated spring movement was seen, but there were peak counts of 525 at Rye Hbr. on 10 May, 300 at Bewl Bridge Res. on 18 May and also 300 at Barcombe Mills Res. on 28 May.

Arrivals at colonies were noted at Mannings Heath on 24 Apr., at Crowborough on 3 May and Brighton on 4 May. Departures from these were in the first week of Aug., 1 Aug. and 13 Aug. respectively; at East Grinstead they left on 30 July. Southward passage was underway by 16 July, when 10 were seen going S well offshore. Small numbers were seen thereafter, with a maximum of 110 at Beachy Head on 20 Aug.; very few stayed after 28-29 Aug., the latest being singles at Crowborough on 23 Sept. and at East Dean and Beachy Head on 25 Sept.

291. **ALPINE SWIFT** (*A. melba*):—One over Rye Hbr. on 8 May (JWH, DM, MJS-H *et al.*) has been accepted by *British Birds*.

293. **KINGFISHER** (*Alcedo atthis*):—There was a good response to the appeal for records in the last report. During Jan. and Feb. only about 16 birds were seen, at 7 inland sites. In the breeding season birds were proved to breed at a maximum of 5 sites and suspected of breeding at a further 7. In addition, birds were recorded at a further 22 sites. In the last 2 months of the year some 43 birds were present at 13 coastal and 22 inland sites.

The following table indicates that the population is probably relatively stable (allowing for the effects of cold winters and perhaps lapses in reporting by observers). However, the species is obviously scarce and confirmed breeding takes place on ponds and lakes rather than along rivers.

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Confirmed breeding	1	4	2	6	—	4	3	—	5	6	8	5
Sites with records in breeding season....	35	36	25	19	29	30	17	19	32	32	20	34

295. **BEE-EATER** (*Merops apiaster*):—A superb flock of 4 were at Beachy Head from 26-28 June (KM *et al.*); they have been accepted by *British Birds*.

297. **HOOPOE** (*Upupa epops*):—The total of 8 is slightly below average, but a welcome improvement on last year. All records were widely scattered with singles at Camber on 14 Mar. (Mrs. Bolton); near Southsea on 21 Apr. (MH); Beachy Head on 15 May (MLC *et al.*); Rushlake Green on 17th (NAD); Kingley Vale on 30th (JKC); East Grinstead on 10 June (JP); Selsey Bill on 18 Aug. (Mr. and Mrs. Thompson) and a late bird at East Hill, Hastings on 20 Oct. (SCW).

298. **WRYNECK** (*Jynx torquilla*):—Three spring records, at Paghham Hbr. on 17-18 Apr., 23-24 Apr. and 14 May, were the first since 1979 but autumn reports were very few for the second year running. Singles at Beachy Head on 20-21 Aug. and 21 Oct. and in Worthing on 9 Sept. were the only records.

300. **GREEN WOODPECKER** (*Picus viridis*):—Approximately 93 pairs or territorial males were recorded. Breeding season counts in defined areas were of 2 pairs in 60 ha at West Chilmington and 3 pairs in 60 ha N of Weir Wood Res. Elsewhere 4 pairs were present at Ambersham Common, at least 12 pairs at Eridge Park and 5 territories along 8 Km of the Bluebell Railway.

302. **GREAT SPOTTED WOODPECKER** (*Dendrocoptes major*):—Breeding season counts received were of 3 pairs in 60 ha at West Chilmington, 2-3 pairs in 60 ha N of Weir Wood Res. and 2 pairs in 40 ha at Ashburnham. An estimated 10 pairs were present at Eridge Park.

In the autumn possible migrants were seen at Beachy Head on 6 dates between 13 Aug. and 5 Nov. and at Hastings singles were seen moving W on 6 and 20 Oct. Sussex clearly was not graced by the unprecedented movement of this species evident in Kent during Oct.

303. **LESSER SPOTTED WOODPECKER** (*D. minor*):—During the breeding season the species was reported from 20 widely scattered localities; at other times of the year reported from a further 31 localities. One was seen at Selsey Bill on 14 Jan., an unusual location for the species.

310. **WOODLARK** (*Lullula arborea*):—1982 Correction:—The birds seen on 21 and 22 Nov. were observed in 1981.

1982:—One at the Midrits on 28 Dec. (HC).

1983:—In the west of the county a pair was present on 28 Feb. and 1 Mar. when the male was singing, and again on 12 Mar., but the birds were not found later (LWO, JO). Singles were noted over Beachy Head on 4 and 17 Oct. (RHC), during a period when an unusual number was seen on the E. Kent coast.

311. **SKYLARK** (*Alauda arvensis*):—The largest flock reported in Jan. was of 260 at Patcham Court Farm. In the cold weather of early Feb., about 2,000 flew W at Pett Level during the snowy morning of 9th and a total of at least 340 was in the Rye Hbr. area on 13th.

Details of breeding season counts from defined areas appear on pages 46-47. Other counts included 15 males at Iping Common and 50-80 pairs were estimated at Rye Hbr. Small numbers were moving W on the coast in Sept. Larger numbers during Oct.

included 700 in an hour across Paghham Hbr. on 20th; some inland movements were noted. Flocks of around 350 were at Kingston Gorse on 5 Nov., Cissbury on 2 Dec. and Jack and Jill on 4th.

312. **SHORELARK** (*Eremophila alpestris*):—A single at West Wittering on 26 Oct. (PDJ, JJ) was the first since 1979.

313. **SAND MARTIN** (*Riparia riparia*):—First arrivals were at Chichester GP and Rye Hbr. on 19 Mar., at Arundel WFT on 23rd, Bewl Bridge Res. on 24th and Shoreham on 25th, but very few were seen until the end of the second week of Apr. when 110 were at Chichester GP on the 11th. Small numbers were present thereafter. Again 20 pairs bred at the artificial sites at Rye Hbr., while breeding was noted at Stedham Common and Coates Sandpit. Much more information is required on the breeding status of this species.

In autumn the main concentrations were of 700 at Rye Hbr. on 29 July, 500 at Weir Wood Res. on 29 Aug., 400 at Chichester GP on 10 Sept. and 1,000 at Bewl Bridge Res. on 11 Sept. The last birds were 27 at the Crumbles on 8 Oct., 1 at Bewl Bridge Res. on the 11th and 3 at Rye Hbr. on the 18th.

314. **SWALLOW** (*Hirundo rustica*):—There was a very late but simultaneous arrival throughout the county on 10 Apr.; this is the latest arrival date on record. After this passage was light, with maxima of only 500 at Bewl Bridge Res. on 19 Apr. and 150 at Arlington Res. on 17 Apr.; 378 flew N over Selsey Bill during the spring. The general story was of low breeding numbers.

Return passage was more pronounced with 5,000 roosting on Thorney Deepes on 29 Aug., 800 roosting at Southeast on 10 Sept., 1,000 at Bewl Bridge Res. on 11 and 18 Sept., 800 at Rye Hbr. on 26 Sept. and a passage of 2,000 E per hour at Ferring on 29 Sept. In Nov. there were 4 records to the 12th and then just 1 very late individual at West Beach, Littlehampton on 1 Dec.

316. **HOUSE MARTIN** (*Delichon urbica*):—First reported at Chichester GP and Arundel WFT on 11 Apr., a fairly late date, and they were only seen at 5 other sites before 20 Apr. Generally considered as being late and scarce on breeding sites this year, although 700 gathered at Bewl Bridge Res. on 2 May and a total of 127 went N over Selsey Bill during the spring.

The main autumn concentrations were 1,500 at Bewl Bridge Res. on 29 Aug. and 6,000 there in stormy weather on 11 Sept., and 400 at Ashcombe Farm, Lewes on 28 Aug. The largest coastal movements were seen at West Beach, Littlehampton on 24-25 Sept., where up to 3,000 passed W, while at Ferring on the 29th, 2,000 moved E per hour. Few remained by late Oct. and there were only 2 Nov. records, on 12th at Brighton and on 24th at Worthing.

317. **RICHARD'S PIPIT** (*Arenaria novaeseelandiae*):—1977:—A belated record of 1 at Littlehampton on 26-27 Sept. (RG *et al.*) has been accepted by *British Birds*.

318. **TAWNY PIPIT** (*A. campestris*):—1982:—Two at Ovingdean on 3 Oct. (NAGL) have been accepted by *British Birds*.

1983:—Seven recorded. A flock of 4 was at Beachy Head on 24 Sept. (JFC, DC *et al.*) and 1 flew W there on 2 Oct. (CFW *et al.*). At West Beach, Littlehampton there were 2, also on 24 Sept., with 1 remaining to the next day (RG, PAR *et al.*).

320. **TREE PIPIT** (*A. trivialis*):—Very few spring migrants were noticed along the coast again this year; the first being at Birling Gap on 1 Apr., the last at Selsey Bill on 14 May. During the breeding season there were widespread reports of 181 males or pairs. Ashdown Forest was well covered and there were probably over 70 pairs, which is in line with the 1967-70 census of 86. (SxBR. 24: 68-79).

The first autumn passage involved 2 birds ringed at Charleston Reedbed on 6 Aug. and continued until 6 Oct. (Belle Tout Wood), but in total fewer than 200 birds were noted. The main passage was seen between 20-22 Aug. at Cissbury and Beachy Head while the latter also had 10 on 13 Sept. At Moulsecroomb there were 15 on 6 Sept. and at Selsey Bill, 8 on 24 Sept.

322. **MEADOW PIPIT** (*A. pratensis*):—As in previous years few were reported in the early months, with a maximum of 121 at Chailey Common on 17 Feb. Spring migration continued through Mar. and the first half of Apr. and 1,481 flew N at Selsey Bill between 7 Mar. and 12 Apr., peaks 361 on 1 Apr., when 100 also moved N in 1 hour at Beachy Head, and 801 on 4 Apr.

Apart from counts from defined areas, on pages 46-47, the only notable breeding season counts of pairs or singing males were 20 at Rye Hbr. SSSI, 27 at Bewl Bridge Res. and 56 at Ashdown Forest.

Autumn passage was most notable in Sept. and early Oct., Sept. maxima being 300+ at Swanborough Hill on the 7th, 350 E on 28th at West Beach, Littlehampton and 200 at Cissbury on 29th. In Oct. at East Brighton Golf Course there were 400 on the 4th and at Cissbury 300 on the 8th and 800+ on the 10th. The Chailey Common roost held 428 on 10 Nov. The species was notably absent at Rye Hbr. SSSI in Nov. and Dec. and the only large Dec. count was 200 at West Wittering car park on 17th.

324. **ROCK PIPIT** (*A. spinoletta*):—Low numbers were recorded in Jan-Feb. with a maximum of 16 at Rye Hbr., 7 at Thorney and 6 at Shoreham Beach and between Eastbourne Pier and Beachy Head. On 30 Mar. 1 was at Bewl Bridge Res.

In the breeding season 6 pairs were recorded from a six mile stretch of coast between Cliff End (Pett) and Rock-a-Nore (Hastings). Two pairs were at Newhaven.

Return to wintering sites was first recorded on 25 Aug. at Widewater increasing to 4 in Oct. Six at Brighton Marina on 30 Sept. increased to 9 in late Oct-Nov. and 6 were at Selsey Bill on 4 Oct. Westerly passage occurred at West Beach, Littlehampton with 3 on 13 Oct. and 2 on 29 Oct. The use of river saltings in winter was shown by birds at Rye Hbr., on the R. Ouse south of Lewes, R. Adur and Pagham Hbr. LNR.

Accepted records of birds of the Continental races *spinoletta* (Water Pipit) or *littoralis* (Scandinavian Rock Pipit), with characteristics closest to *spinoletta*, again increased. At Barcombe Mills Res. the 3 recorded in 1982 increased to 4, the last remaining to 31 Mar. Two were at Willington Drive, Eastbourne in Feb-Mar. with 1 last seen on 14 Apr. One at Sidlesham Ferry from 3 Jan. was joined by a second on 11 Apr. Singles were at Midrips/Wick on 13 Mar. and on 3 Apr. at Pett Levels. From a flock of 7 Rock Pipts at Filsham reed bed on 8 Apr. 1 at least was one of these races. In the second half of the year 1 remained at Sidlesham Ferry from 8 Nov. to the end of the year and 1 (possibly 2) at Barcombe Mills Res. from 26 Nov. to 31 Dec. One was at Waltham Brooks on 26 Nov. and 4 on the Adur Levels on 30 Dec.

325. **YELLOW WAGTAIL** (*Motacilla flava*):—Early birds reached Church Norton on 28 Mar. and the Crumbles on 1 Apr. On 7th 1 was at Horse Eye Level and on 9th 4 birds at 3 localities; there were 20 at Horse Eye Level by the 14th. Spring passage at Selsey Bill totalled 35 and at Brighton Marina 13.

In the breeding season there were 30 pairs at Rye Hbr. (as last year), 15+ pairs at Lewes Brooks, 8 at Horse Eye Level, 6 in the lower Ouse valley, 3 at Waltham Brooks, 2 at Rackham and 2 or 3 at Arlington Res.

Autumn passage was less marked than in 1982. As then, the species was most widely reported in the last week of Aug. when the largest numbers were 60 at Pagham roost on 24th, 58 at Beachy Head and at least 100 around Pagham Hbr. on 25th, 45 at Newtimber on 28th and 50 at Rye Hbr. on 31st. At Selsey Bill passage was 'unremarkable' with a peak of 31 on 29 Aug. and parties of up to 20 in Sept.; numbers were low at Cissbury with peaks of 35 on 5 Sept. and 40-50 on 20th. At Beachy Head there were 70 on 22 Sept., but the autumn total in Whitbread Hollow was only 57. On 2 Oct. there were still 20 at Selsey Bill, with smaller counts until the last 2 on 16th, when 2 were also at Rye Hbr. One roosted at Pett Level on 18th and the last was at Rye Hbr. on 22nd.

A pair showing the characters of the Blue-headed Wagtail *M.f. flava* was present in the lower Ouse valley from 31 May and continually carrying food on 30 June and 3 July. Other individuals were at Horse Eye Level on 14 Apr., near Southsea on 19th, at Sidlesham on 24th and at Rye Hbr. — a male on 4 May, a female on 17th. Single males were at Coombe Haven on 25 May and Widewater on 25 July. At Langney Point on 1 May a flock of 20 *flava* wagtails included 2 males resembling Sykes Wagtail *M.f. beema* with 2 or 3 females 'probably *beema* or *flava*' (AQ, MEN).

327. **GREY WAGTAIL** (*M. cinerea*):—Reported from 4 coastal and 21 inland sites in Jan. and Feb. and 9 coastal and 28 inland sites in Nov. and Dec. Mainly single birds were involved but up to 3 together were noted and up to 7 roosted at the Pells, Lewes from Oct. to Dec.

About 58 territories were noted in the breeding season as against the poor showing of 25 in 1982.

Autumn passage at coastal sites was mainly between 21 Aug. and 4 Oct.; a total of 19 flew W at Whitbread Hollow and 14 W at Selsey Bill. At West Beach, Littlehampton 60 were recorded but both E and W movements were seen. Peak movements were 9 E at Pett Level on 1 Oct. and 7 (4E) at Littlehampton on 20 Sept.

328. **PIED WAGTAIL** (*M. alba*):—A large reedbed roost at Framfield, in use since 15 Nov. 1982, held between 460 and 477 birds in Jan., 444 on 9 Feb., 150 on 13th and none thereafter. In Feb. up to 20 roosted at Horam, and 36 flew to roost at Slimfold on 26th. At both ends of the year they were quite common on West Sussex beaches, for instance 40 at Shoreham Fort on 1 Mar.

A pair at Bewl Bridge Res. successfully reared young from a nest under the steering column of a motor boat, the young being parted from their parents every time the boat was used. At an East Grinstead roost there were 50 on 25 June, 60 on 20 July; among the birds netted on the first date, was a breeding female with the characteristics of the White Wagtail *M.a. alba*.

Autumn gatherings of up to 46 were noted and some passage was visible, for instance at Littlehampton West Beach where 22 flew E on 28 Sept. and 36 E on 30th. In Nov. and Dec. flocks of over 30 were at Arlington and Hurst Green, 40 at Ferring, 50 at Bewl Bridge Res. and 60 at Warbleton. Up to 37 flew to roost over Sharpthorne, 30 over Horsham and at least 70 were in reeds at Arundel WFT on 16 Nov.

As well as the breeding female above, 15 birds showing the characteristics of the White Wagtail *M.a. alba* were noted at 10 coastal sites between 19 Mar. and 14 May; inland at Arlington Res. there were 2 on 12 and 14 Apr. and at Bewl Bridge Res. 1 on 27 Apr. The coastal records were of singles, except for 3 at Selsey Bill on 14 Apr. and 4 in the lower Cuckmere on 21st. In autumn at Selsey Bill there were 2 on 24 Sept., 1 on 26th and 1 on 3 Oct.

331. **WREN** (*Troglodytes troglodytes*):—Counts of numbers breeding in defined areas are shown on pages 46-47. Ringing totals in the county were up by 40% on 1982, indicating a good winter survival and/or breeding season.

333. **DUNNOCK** (*Prunella modularis*):—Counts of numbers breeding in defined areas are shown on pages 46-47. Ringing totals in the county showed a 19% increase on 1982, following the mild winter.

336. **ROBIN** (*Eritriacus rubecula*):—Counts of numbers breeding in defined areas are shown on pages 46-47. Ringing totals showed a 35% increase over 1982.

338. **NIGHTINGALE** (*Luscinia megarhynchos*):—The first records of the spring were 5 singing at Lullington Heath on 16 Apr. followed by a single at Beachy Head and 2 at Oreham Common the following day. Although the arrival date was the same as 1982, few were noted until late Apr.

Incomplete breeding season data revealed 87 territorial males in 40 different tetrads, 10 of which had no previous breeding records.

Autumn migrants were recorded at Beachy Head between 6 Aug. and 13 Sept. with the maximum of 4 on 6 and 21 Aug. Elsewhere only 10 were noted with the last at Moulsecoomb on 20 Sept.

340. **BLUETHROAT** (*Luscinia svecica*):—The first to be seen since 1977 were noted at Beachy Head on 30 Aug. (NAGL, R.J.F, MK) and Pagham Hbr. on 7 Sept. (DJSG).

342. **BLACK REDSTART** (*Phoenicurus ochruros*):—1982:—Singing birds were heard at 4 sites in East Sussex and an apparent family party of 5 on 14 Sept. may indicate late successful breeding.

1983:—A good spring was followed by a quiet autumn, approximate monthly totals being:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
10	15	35	17	14	4	1	1	1	1	11	17

Most wintering individuals were widely scattered singles along the coast with 3 at Cuckmere Haven and singles inland at Barcombe and South Heighton. The first migrant was at Selsey Bill on 5 Mar. with 3 there on 13th; the first at Beachy Head on 12th. Spring

reports came from many localities. Five were at Beachy Head on 19 Mar. when 3 were still present at Cuckmere Haven. Records continued to be scattered through Apr. and into early May with singles at Newhaven and Coldean mid-month. One was present at Beachy Head on 3-4 June and breeding season reports were received from the east of the county with a pair feeding 4 young at 1 site, with another pair nearby. A lone male was seen in June at another locality.

Autumn passage was poor with scattered singles from 9 Oct. to early Nov. when 3 at Brighton Marina on 5th and 4 at Selsey Bill on 6th were the peak counts. Later records could well have been coastal wintering birds although only 6 remained in Dec.

343. REDSTART (*P. phoenicurus*):—In the spring there were 17 records from coastal localities, principally in the west, between 10 Apr. (Beachy Head) and 17 May. During the breeding season there were reports of 33 pairs, or males, from likely breeding sites in the north, north-east and West Sussex. In the north-east a pair, having been frustrated attempting to build in a car, built a nest in a bag in a garage and raised 6 young.

Autumn migration noted on the Downs and at the coast was first reported on 14 Aug. at Eastbourne and in all more than 300 birds were reported. The main passage at Beachy Head was 8-22 Sept. with a peak of 35 on the last date. Other substantial counts were 9 at Cissbury and 8 at Newtimber Hill on 28 Aug. and 6 at Paghham Hbr. on 27 Aug. and 7 Sept. The last was at Fairlight on 30 Oct.

344. WHINCHAT (*Saxicola rubetra*):—Recorded as follows (the autumn totals being rough estimates):

Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
8	14	—	—	300	150	32	1

First in spring were 2 at Church Norton on 16 Apr. and passage was noted until 14 May; 3 at Beachy Head on 5 May was the highest count. No breeding season reports were received.

Autumn passage was below average and noted from 10 Aug. with 1 at Selsey Bill, 9 being seen at Cissbury on 13th. The main arrival occurred in the last week of Aug. with 25 at Thorney on 20th; 25 at Lullington Heath, 25 at Pyecombe and 22 at Street Hill Farm on 21st; 32 at Cissbury on 28th and 20 at Beachy Head on 30th. Many remained into Sept. with another small arrival later in the month with 22 at Beachy Head on 22nd and 14 at West Beach, Littlehampton and 25 at Rye Hbr. LNR on 24th. Numbers quickly dwindled in Oct., the last being at Balmer Down on 17th and West Beach, Littlehampton on 18th.

345. STONECHAT (*S. torquata*):—The numbers reported in the early months were 22 in Jan., 15 in Feb. and 14 in Mar. These were mainly from the coast, but birds were present at Ashdown Forest, Arlington and a garden in Haywards Heath in Jan. The breeding season was exceptional and, although no detailed survey was undertaken apart from Ashdown Forest, there were reports of 85 pairs. The previous highest recorded figure was 54 in 1969. In 1983, 25 reports came from West Sussex where 37 young were raised, and 60 from East Sussex where there were at least 40 fledglings. The Ashdown total of at least 39 pairs was more than twice the number (18) found during the peak year, 1972, during the 12 year survey between 1962-73 (*SxBR*, 26: 50-56). It would appear that the mild winter followed by an exceptionally wet spring prevented the usual spate of fires.

During the autumn months, dispersal, or migration involving 80 birds was noted from the Downs and the coast. Numbers remained high during early winter: *i.e.* Oct. 92, Nov. 54 and Dec. 55, including up to 5 birds being reported from Chailey and Old Lodge.

346. WHEATEAR (*Oenanthe oenanthe*):—The wintering individual at Shoreham Fort remained until 2 Feb. The first migrant was recorded at Sidlesham Ferry on 4 Mar. with 1 at Selsey Bill on 6th and an influx on 9th with 18 at Selsey Bill and a further 6 elsewhere along the coast. Passage was then quiet until mid-Apr. with peak counts of 20 at Sidlesham Ferry, 13 at Worthing, 13 at Brighton Marina and 19 at Beachy Head on 14th and 39 at Selsey Bill on 18th. Few were seen after the first week of May.

In the breeding season 12 pairs at Rye Hbr. raised *c.* 25 young, all but 2 pairs in nest boxes. One pair was present at Pett Level. Isolated June reports came from Dyke Road, Brighton on 2nd and Church Norton on 3rd.

Autumn passage started in early Aug. with 7 on Brighton Golf Course on 3rd, the first at Selsey Bill being 2 on 6th. Autumn passage was considered to be very poor by observers from all major localities, peak counts being 46 at Beachy Head on 25 Aug. and 20 at West Beach, Littlehampton on 24 Sept. Selsey Bill only recorded 131 all autumn (*cf.* 120 there on 28 Aug. 1982). Few were seen after late Sept. there being 28 Oct. records and 3 in Nov. The last of the year were singles at Selsey Bill on 15 Nov., Littlehampton on 20th and Salts Farm, Shoreham on 3 Dec. — a late date.

359. RING OUZEL (*Turdus torquatus*):—A slight increase in records on last year, but still well below average. One was seen at Beachy Head on 20 Mar., the earliest in Sussex since 1971 and coincidentally the same day as 1 at Dungeness. Any early promise did not materialise with only 7 further spring records, between 11-24 Apr.

First of the autumn were singles at Selsey Bill and Paghham Hbr. on 17 Sept. and there were 2 other Sept. records. In Oct. 4 were at West Beach, Littlehampton and 3 at Beachy Head on 1st, records then becoming fairly numerous with 32 reported up to 29th from 8 localities including 8 at Beachy Head on 10th and 4 at Cold Coombes, Lewes on 14th. One at Climping on 5 Nov. was the last of the year.

360. BLACKBIRD (*T. merula*):—Counts of numbers breeding in defined areas are shown on pages 46-47. A fairly poor autumn migration was most noticeable between 18 Oct. and 5 Nov.

364. FIELDFARE (*T. pilaris*):—Early in the year numbers remained very low, the largest flocks being 500 at Wisborough Green on 6 Feb., 260 at Shillinglee on 22 Feb. and 250 at Barcombe Res. on 28 Mar.; the last was, surprisingly, the latest date reported.

An unprecedented record of an adult feeding all day on 6 Aug. at Beachy Head (RDME, AJP, SPH) was by far our earliest autumn bird. One at Church Norton on 31 Aug. was also very early, but after that there was a small and sporadic passage. The largest numbers were 500 at Horsham on 23 Dec., 512 at Horse Eye Level on 28 Dec. and 600 W at Hurst Green on 9 Dec.

365. SONG THRUSH (*T. philomelos*):—Counts of numbers breeding in defined areas are shown on pages 46-47. Again a very poor autumn migration.

366. REDWING (*T. iliacus*):—Very few were present early in the year, 300 at West Chilington on 24 Jan. being the largest flock. The latest birds were singles near Chichester on 17 Apr. and in the Cuckmere on 1 May.

The first did not return until 10 Oct. and the main passage was noted in late Oct. and early Nov. At Crowborough/Hurst Green, 3,500 passed W between 20 and 31 Oct., mostly on the 20th and 21st. Counts of birds calling at night over Hastings revealed 50-100 per hour going over on the nights of 29 Oct. and 7, 9 and 19 Nov. Low winter numbers were again recorded, 500 at Horsham on 23 Dec., 455 at Pevensy Levels and 400 in Moulsecomb Park being the maxima.

367. MISTLE THRUSH (*T. viscivorus*):—Details of breeding season counts from defined areas are shown on pages 46-47. Visible movement was noted at Beachy Head where 2 came off the sea on 24 Apr., at Brighton where 19 SW on 25 Oct. and at Crowborough where 28 went SW on 22 Oct. and 7 SW on the 23rd. Largest gatherings were 70 at Chiddingfold on 30 Aug., 42 on Horse Eye Level on 28 Dec., 32 at Hurst Green on 21 June and 31 at Stanmer Park on 15 Oct. At Lewes, full song was heard on 29 Dec.

369. CETTIS WARBLER (*Cettia cetti*):—The overwintering bird at Pett Pools remained until 5 Feb. (CHD) and 1 remained at Arundel WFT until 26 Apr. (RMB *et al.*). The first of the autumn was an adult female trapped on 6 Aug. which remained until

30 Oct. At another site 2 females were trapped on 13 Nov., at least 1 remaining to 19th (localities and observers' initials withheld at their request). Two birds were present at Arundel WFT from 12 Oct. until the end of the year (RMB *et al.*) and 1 from 18 Oct. at Pett Pools also until the end of the year (CHD, MSH).

373. **GRASSHOPPER WARBLER** (*Locustella naevia*):—The first arrival was located on 14 Apr. at Woods Mill, and the last was ringed at Whitbread Hollow on 2 Oct. In between there were 4 records of spring migrants and 13 in the autumn. During the breeding season there were reports of 26 reeling males, or pairs, with all but 5 coming from the Downs and coastal regions. Breeding season records appear to have stabilised during the last few years: 1980—24/26, 1981—22 and 1982—18.

377. **AQUATIC WARBLER** (*Acrocephalus paludicola*):—An immature was trapped in the Cuckmere valley on 16 Aug. (JW, TWP) and another seen at Climping on 17 Sept. (BS, RG).

378. **SEDGE WARBLER** (*A. schoenobaenus*):—The first was at Church Norton on 10 Apr. followed by Arundel WFT on 14 Apr. Arrivals became more widespread between 15-17 Apr.

The Inland Wetland Inquiry and other counts revealed 144 pairs. Counts of defined areas appear on pages 46-47 and other, larger, concentrations of pairs or territorial males were:

Pagham Hbr. LNR	.....17	Selsey West Fields	.....14	Rye Hbr. SSSI	.....16
Arundel Brooks	.....18	Cuckmere (Arlington to A27)	.....10	Brede Levels	.....8

Near Arlington 4 adults and 26 first year birds were trapped between 24 July and 17 Aug. At Beachy Head the extremely low total of 15 were trapped between 7 Aug. and 1 Oct. Elsewhere, numbers were again very low with a maximum count of 13 on 13 Sept. at West Beach, Littlehampton. A few were recorded at various sites up to 9 Oct. and 1 at Church Norton on 22 Oct. was a very late date.

382. **REED WARBLER** (*A. scirpaceus*):—First recorded on 21 Apr. at Pett Pools and Pagham Hbr. and by the 27th recorded at the Cuckmere, Chichester GP and Arundel WFT.

The Inland Wetland Inquiry and other counts revealed 260 pairs. Counts of defined areas appear on pages 46-47 and other, larger, concentrations of pairs or territorial males were:

Arundel Brooks	.....15	Rye Hbr. SSSI	.....30	Newhaven Tidemills	.....17
Arundel WFT	.....30	Brede Levels	.....50	Knepp Lake	.....8
Arlington	.....10	Pagham Hbr. LNR	.....39		

At a reed bed near Arlington 16 adults and 25 first year birds were trapped between 24 July and 17 Aug. At Beachy Head 48 were trapped between 31 July and 7 Oct., 13% fewer than 1982. The maximum count there was 12 on 21 Aug. and the following day 20 were in the "wood" at Rye Hbr. SSSI. The last record was on 16 Oct. at West Beach, Littlehampton.

387. **ICTERINE WARBLER** (*Hippolais icterina*):—Three records. Singles were seen at Beachy Head on 11 Aug. (RHC), Woods Mill, Hemfield on 21 Aug. (DK) and West Beach, Littlehampton on 13 Sept. (RG). A good year.

388. **MELODIOUS WARBLER** (*H. polyglotta*):—One at Church Norton on 16-17 Sept. (BJ, CMJ, PJ).

389. **DARTFORD WARBLER** (*Sylvia undata*):—A bird was heard in the autumn at the 1981 breeding site, but had not been present during the summer. Following a good breeding season elsewhere, migrants were seen at West Beach, Littlehampton on 2 Nov. (RG, ASC) and at Beachy Head on 30 Nov. (CLH).

396. **BARRED WARBLER** (*S. nisoria*):—An immature was seen at Climping on 17 Sept. (RG, PAR).

397. **LESSER WHITETHROAT** (*S. curruca*):—First for the year were singles at Beachy Head on 14 Apr. and Pett Level on 21st, followed by a general arrival during the last week of Apr. and the first week of May. Breeding season reports of 1-7 pairs came from 27 localities and included only 3 single records in the north of the county. Details of counts from defined areas appear in the tables on pages 46-47.

Autumn passage was widely reported from many coastal and downland areas from late July until the end of Sept. but with notably lower totals than in some recent years. Maxima at Beachy Head were 100 on 20 Aug. and 60 on 21st; the numbers ringed were 23% down. At Shoreham Sanctuary 10 were counted on 1 Aug., at Rye Hbr. 25 on 28 Aug., at Hastings Country Park 15 on 3 Sept. and at Littlehampton 5 on 13 Sept. On the Downs the peak at Ashcombe Bottom, Lewes was 11 on 21 Aug., at Cissbury Ring 40 on 22nd and at Newtimber Hill 12 on 7 Sept. Several Oct. stragglers were reported singly and finally 4 at Beachy Head on 6th.

398. **WHITETHROAT** (*S. communis*):—First recorded in spring at Pagham Hbr. on 12 Apr. and Somerley on 13th with sightings further inland at Cissbury Ring on 16th and Oreham Common on 17th. During the breeding season, the species was very widely reported and often in considerable numbers throughout the county. In downland at Ashcombe Bottom, 29 juveniles were ringed (*cf.* 47 in 1982 and 17 in 1981). Details of counts from defined areas appear in the tables on pages 46-47.

Autumn passage from early Aug. to late Sept. was very comprehensively reported, probably as a result of the exceptionally fine weather. Beachy Head had maxima of 100 on 14 Aug. and 75 on 21st, with 60 on 22 Sept.; 78 were ringed, 60% down on 1982. At Cissbury Ring there was a maximum count of 35 on 18 Aug., while smaller peaks fell at Seaford Head on 1 Aug., Hastings Country Park on 11th, Ditchling Beacon on 21st, Selsey Bill on 27th, Newtimber Hill on 28th and Littlehampton West Beach on 13 Sept. The last for the year were singles at Hurst Green on 1 Oct., Bewl Bridge on 4th and Beachy Head on 6th.

399. **GARDEN WARBLER** (*S. borin*):—First in spring was 1 at Woods Mill on 17 Apr. followed by 2 at Bewl Bridge on 26th and another at Linch on the 27th. The main arrivals were during the first half of May.

Breeding season reports of 1-8 pairs came from only 25 localities, but were well spread throughout the county. Details of counts from defined areas appear in the tables on pages 46-47.

Return passage was noted from mid-Aug. to late Sept. at many places on coast and downs. At Beachy Head there were peaks of 60 on 6 Aug. and 40 on 21st; 83 were ringed, 32% down on 1982. Other coastal areas in both the east and the west, also recorded very low numbers. On the Downs, the only sizable counts were 22 at Moulsecoomb on 9 Sept. and 8 at Cissbury Ring on the 15th. Last for the year were singles at Slinfold on 11 Oct. and Ecclesbourne on the 16th.

400. **BLACKCAP** (*S. atricapilla*):—From Jan. to mid-Mar. 22 wintering birds were reported from 9 coastal and 6 inland localities. The first presumed migrants arrived in late Mar. and by late Apr. the species was widespread. In the breeding season it was very widely reported from mainly inland localities. At Ashcombe Bottom a "fair" breeding season was noted, 30 juveniles being ringed (*cf.* 49 in 1982 and 10 in 1981). Details of counts from defined areas appear in the tables on pages 46-47.

Autumn passage at Beachy Head was similar to 1982 and produced maxima of 300 on 11 Sept. and on 6 Oct. Peak numbers at Moulsecoomb were 50 on 14 Sept. and at Cissbury 42 on the 15th. Smaller counts occurred in many coastal and inland localities from late July until mid-Nov. A total of 17 probably wintering individuals was reported from mid-Nov. onwards from 10 coastal and 2 inland areas.

Wintering birds reported at both ends of the year were predominantly males;

Systematic Counts of breeding pairs or territorial males	Adur Levels (APP) permanent pasture (55 ha)	Lullington Heath NNR (ALB) downland with scrub (156 ha)	Pagham Harbour (JFT) coastal grazing fields, hedgerows, ditches (39.7 ha)	Burton Pond LNR reedbeds, fringing vegetation (9 ha)	Kingley Vale NNR (RW) yew, mixed wood, grassland (57.9 ha)	Kingley Vale NNR, exrn. (RW) mixed woodland, scrub (60 ha)	Sindles Farm Copse (ADP, PB) mixed woodland (6.2 ha)
Turtle Dove.....	1	4	3	—	3	2	—
Skylark.....	32	4	1	—	2	—	—
Meadow Pipit.....	29	—	1	—	—	—	—
Wren.....	3	37	8	5	19	17	5
Duncock.....	5	20	4	—	11	9	—
Robin.....	—	12	3	—	52	30	6
Blackbird.....	13	15	7	—	24	26	9
Song Thrush.....	1	5	2	—	5	5	2
Mistle Thrush.....	—	2	—	—	3	1	1
Sedge Warbler.....	17	—	—	5	—	—	—
Reed Warbler.....	25	—	10	24	—	—	—
Lesser Whitethroat.....	—	2	2	—	3	2	—
Whitethroat.....	—	22	—	—	4	6	—
Garden Warbler.....	—	—	—	—	2	—	1
Blackcap.....	—	3	—	3	6	8	1
Chiffchaff.....	—	—	—	2	2	7	—
Willow Warbler.....	—	21	3	1	17	12	—
Goldcrest.....	—	2	—	—	3	9	—
Spotted Flycatcher.....	—	—	—	—	—	—	—
Long-tailed Tit.....	—	3	—	1	2	1	—
Marsh Tit.....	—	—	—	1	2	4	—
Blue Tit.....	1	2	3	—	5	3	5
Great Tit.....	1	7	2	—	12	9	1
Treecreeper.....	—	—	—	—	—	—	—
Jay.....	—	—	—	—	1	3	—
Magpie.....	2	5	2	—	3	2	—
Chaffinch.....	6	29	5	—	24	22	8
Linnet.....	20	17	1	—	3	—	—
Greenfinch.....	6	—	4	—	1	1	—
Bullfinch.....	—	3	2	—	5	6	—
Yellowhammer.....	4	12	3	—	6	7	—

NOTE: These are based on Common Birds Censuses;

Systematic Counts of breeding pairs or territorial males	West Chillington (FWD) wealden farm with copses (60 ha)	Bluebell Railway (MJM) railway scrub (8 Km)	N. Weir Wood Res. (DJWS) grass, hedge, copse farm edge (60 ha)	Hellingly-Heathfield (PCT) disused railway, scrub (11 Km)	Finches Wood, Nuthurst (GET) coniferous plantation (50 ha)	Cote Street, Worthing (LM) mixed scrub on chalk (14.2 ha)	Highbury Woods (MLC et al.) mixed woodland (37 ha)	Moulscobomb Wild Park/ Hollingbury Woods (MLC et al.) mixed scrub and woodland on chalk (180 ha)	Wyeh Cross (CFT) mixed scrub and woodland (14.2 ha)
Turtle Dove.....	3	6	—	—	6	2	—	—	—
Skylark.....	4	—	—	—	—	9	—	3	—
Meadow Pipit.....	—	—	—	—	—	—	—	1	—
Wren.....	—	28-38	—	—	16	14	32	36	10
Duncock.....	10	6	27	—	10	8	1	31	3
Robin.....	—	22-34	—	—	18	13	26	35	10
Blackbird.....	—	11-16	—	—	18	18	12	56	6
Song Thrush.....	—	4-10	11	—	17	2	3	14	3
Mistle Thrush.....	5	1-3	5	—	2	3	1	5	2
Sedge Warbler.....	—	—	—	—	—	—	—	—	—
Reed Warbler.....	—	—	—	—	—	—	—	—	—
Lesser Whitethroat.....	3	—	1	6-7	1	2	—	2	—
Whitethroat.....	6	1-2	2	7-8	14	6	—	9	—
Garden Warbler.....	3	1-6	13	7-8	7	—	1	1	—
Blackcap.....	6	1	12	8-9	5	5	2	11	—
Chiffchaff.....	6	2	13	6	4	3	5	4	—
Willow Warbler.....	8	17-20	28	20	21	5	6	17	4
Goldcrest.....	2	1-2	—	—	16	—	3	—	5
Spotted Flycatcher.....	2	—	—	—	—	—	—	—	—
Long-tailed Tit.....	6	4-6	—	—	—	—	3	2	2
Marsh Tit.....	1	1	—	—	—	—	3	—	—
Blue Tit.....	—	22-28	—	—	—	4	19	26	9
Great Tit.....	—	48-55	—	—	—	8	15	15	12
Treecreeper.....	5	2	—	—	—	—	—	—	2
Jay.....	8-9	—	—	—	2	—	—	2	1-2
Magpie.....	11	—	—	—	3	—	—	13	1
Chaffinch.....	—	16-23	49	—	14	15	7	31	9
Linnet.....	—	—	—	—	—	—	—	12	—
Greenfinch.....	1	—	—	—	—	—	—	—	—
Bullfinch.....	6	1-3	—	—	—	—	—	—	—
Yellowhammer.....	7	13-18	—	—	10	3	—	14	—

NOTE: These are based on techniques other than CBCs.

preferred foods mentioned included honeysuckle and ivy berries, also apples put out for thrushes.

403. **PALLASS'S WARBLER** (*Phylloscopus proregulus*):—An individual of this superb bird was at Beachy Head from 6-8 Nov. (R.J.F., MK *et al.*).

404. **YELLOW-BROWED WARBLER** (*P. inornatus*):—Singles were seen at Beachy Head on 1 Oct. (J.F.C., DC *et al.*) and on 6-7 Nov. at Climping (R.G., P.A.R.).

408. **WOOD WARBLER** (*P. sibilatrix*):—The first of only 5 spring passage migrants was a singing male in Stanmer Wood on 23 Apr. There were 20 reports (15 in East and 5 in West Sussex) from potential breeding areas in the interior of the county. Breeding was proved at one site and was probable at 4 others. In the autumn there were just 4 records, all from the coast between 2 and 11 Aug. when the last was at Ecclesbourne Glen. The species is subject to a national survey during 1984.

409. **CHIFFCHAFF** (*P. collybita*):—During Jan. and Feb. at least 22 birds were seen at 16 sites, all within ten miles of the coast. There were at least 4 in the Shoreham area, 3 at Church Norton and 2 at Chichester GP and in Brighton. Only 5 individuals were recorded in Feb., 1 of which in Eastbourne finally left on 9 Mar. Then singles at Selsey Bill on 2 and 5 Mar. were probably arrivals but the widespread appearance of birds between 9 and 13 Mar. undoubtedly represented the first main influx. Arrivals continued to appear to at least 20 Apr. On 1 May a very brown, northern type, was present at Beachy Head.

Numbers breeding in defined areas are shown on pages 46-47 but clearly the species is widespread, for example additional counts at Stanmer Park found 16 singing males.

The autumn migration was rather poor at all regularly covered areas; in Whitbread Hollow, Beachy Head 176 were ringed, 14% below 1982, and the maximum count was 200 on 6 Oct. At Moulsecomb there were 142 on 14 Sept. Numbers tailed away to leave 9 wintering birds in Dec. with 3 at Chichester GP and 2 at Arundel WFT.

410. **WILLOW WARBLER** (*P. trochilus*):—The first birds were seen at Arundel WFT on 1 Apr. and the next day at Weir Wood Res.; many other sites had their first sightings between the 3rd and 9th but arrivals continued to the second week of May. Spring passage was light but 150 were at Bewl Bridge Res. on 19 Apr. when rain brought many down; here, on 26 Apr., a greyish-brown and whitish individual apparently of a northern race was found singing and it remained to 1 June. Breeding season counts from defined areas are shown on pages 46-47.

Return migration was first noted at Selsey Bill on 28 July. Passage was poor at Shoreham, Cissbury and Ashcombe, fair at Beachy Head but quite good at Pagham Hbr. At Cissbury the peak day was 13 Aug. with 110; at Beachy Head the next day produced a large fall with 750 estimated in Whitbread Hollow alone, and this day also brought Rye Hbr. its peak count of 55. Migration had virtually ceased by late Sept. with 1 at Beachy Head on 6 Oct. and 1 calling at Devil's Dyke, Brighton on the late date of 28 Oct.

411. **GOLDCREST** (*Regulus regulus*):—Far higher numbers than usual were reported in Jan. and Feb., mainly from the commons. In late Jan., 19 were seen at Rackham, 22 at Ambersham, 21 at Old Lodge and 17 near Newtimber, while on 6 Feb. there were 33 in Houghton Forest and 22 at Maidenhurst. This may represent increased observer activity as well as high numbers. Singing males from the same areas included 7 at Graffham, 7 at Ambersham, 9 at Rackham and 16 at Duncton. Counts from defined areas are on pages 46-47.

On spring passage, the maximum was 6 at Beachy Head on 9 Apr. compared with peaks of 500 there on 6 Oct. and 200 on 20 Oct. Elsewhere autumn peaks were 33 at Pett on 2 Oct., 42 at Cissbury on 8th and 35 at Pagham on 20th, with 30 at West Beach, Littlehampton on 7 Nov.

Thereafter some very high counts were again made on the commons, with 78 at Old Lodge NR on 24 Nov. and 110 at Ambersham Common on 8 Dec.

412. **FIRECREST** (*R. ignicapillus*):—Many more than usual were present at the beginning of the year and spring passage was good although autumn passage was below average. The approximate totals outside breeding areas were as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	14	33	29	3	—	—	—	11	21	11	3

Wintering birds in the early months included up to 3 at Church Norton, 2 in Stanmer Park, 2 at Piddinghoe, 2 at Selham and 3 at Pett Level with singles at a further 11 localities. Spring passage was noted from 12 Mar. with 1 at Fairlight closely followed by singles at Chichester GP, Eridge, Hove and Pett on 13th. Eight were seen at Beachy Head on 24th and 5 at Cuckmere Haven on 26th. Passage continued into Apr. with 4 at Beachy Head on 4th, 3 there on 10th and 5 as late as 22nd; 2 on Brighton seafront on 11th. The last of the spring were singles at Beachy Head on 15 May and at Moulsecomb on 22nd.

During the breeding season 1 pair was reported in the west of the county.

First in the autumn were singles at Fairlight on 9 Sept. and at Rye Hbr. and Beachy Head on 11th. Apart from 4 at Fairlight on 11 Sept. few were seen until late Oct. with 5 at Beachy Head on 23rd and singles at 5 other sites. Nov. records included up to 3 at Church Norton, 1 remaining into Dec., and 2 at West Beach, Littlehampton, and singles at Horsham, Kempton, Beachy Head, Cliff End, Hastings and Upper Beeding. The Dec. records were at Church Norton, Lewes and Hainaker.

413. **SPOTTED FLYCATCHER** (*Muscicapa striata*):—Four were reported in Apr., the first at Bewl Bridge Res. on 21st. On 1 May 4 were seen at Sidlesham Ferry and 6 from various localities on 2nd.

Breeding season counts from defined areas appear in the tables on pages 46-47. At least 40 pairs were reported but little information was forthcoming on breeding success. One nest was destroyed at Gunn Hill by scrub clearance.

Autumn passage was below average, the first being 3 at Selsey Bill on 11 Aug. Peak counts were 17 at Selsey Bill on 27 Aug. and 67 at Beachy Head on 22 Sept. Seven were seen in Oct., the last at Climping on 24th.

414. **RED-BREADED FLYCATCHER** (*Ficedula parva*):—One at Beachy Head on 4 Oct. (R.H.C. *et al.*).

416. **PIED FLYCATCHER** (*F. hypoleuca*):—Eleven were seen in spring, between 17 Apr. (Selsey Bill) and 26 Apr.; 5 were seen on 23rd including 3 at Beachy Head.

In the autumn, passage was recorded from 7 Aug. to 16 Oct. the last being at Chichester GP. Monthly totals were 51 in Aug., 6 in Sept. and 4 in Oct. No clear arrivals occurred, the peak counts being 8 at Beachy Head on 12 Aug. and 3 at Cissbury on 13th. Most of the records were of widely scattered singles in mid-Aug.

417. **BEARDED TIT** (*Panurus biarmicus*):—Two at Pett Pools on 30 Jan. and 5 Feb. were the only records for the early part of the year.

The first of the autumn was 1 at Pagham Hbr. on 14 Sept. A distinct immigration in late Oct. produced 2 at West Beach, Littlehampton on 18th, 5 at Pagham Hbr. on 20th, 4 at Rye Hbr. LNR on 21st with singles at Charleston Reed Bed on 22nd, flying W at Pett on 23rd and at Sidlesham on the same date. On 26 Oct. 2 were at Thorney Island. Through Nov. 6 were at Pagham Hbr. and 5 flew W at Pett Pools on the 5th, when a maximum of 15+ were recorded at Rye Hbr. LNR decreasing to 1 on 20th. Near Hastings 2 were present on 13 Nov. and 2 at Pett Pools on this date remained to Dec. during which month 2 were at Thorney Island and 1 at Rye Hbr. LNR on 7th. The approximate monthly totals were: Oct. 14, Nov. 30 and Dec. 5.

418. **LONG-TAILED TIT** (*Aegithalos caedatus*):—Ringing data suggested a continuing increase in the county, the total having risen from 103 in 1979 to 223 in 1983. This was confirmed by more reports than usual of breeding pairs. Counts from defined areas are given on pages 46-47.

In autumn a survey by DJWS of the Weir Wood Res. and Forest Row areas reported presence in 43 out of 57 1 Km squares visited in TQ33 and 38 out of 63 1 Km squares in TQ43, with the comment of 'almost plague proportions everywhere'.

Whereas no abnormally large flocks were seen before or after the breeding season, a notable feature was the reports from many observers of several different parties in the same area, such as 3 flocks totalling 80 in Stanmer Woods, Brighton on 9 Nov.; 5 flocks of 8 or more between Nuthurst and Mannings Heath on 28 Nov.; and in Dec. 24 in 4 flocks at Ambersham Common; 53 in 5 flocks in the Greatham area; 31 in 4 flocks at Balcombe; and 30 in 2 flocks at Paddockhurst Wood.

419. **MARSH TIT** (*Parus palustris*).—In a survey of the Weir Wood Res. and Forest Row areas, DJWS found it present in 22 out of 57 1 Km squares of TQ33 and 26 out of 63 1 Km squares in TQ43. Breeding season counts from defined areas are given on pages 46-47. See also Tits: general.

420. **WILLOW TIT** (*P. montanus*).—This remains a difficult species to assess. The county ringing totals for the past five years, drawn from up to 30 scattered sites, show it as frequent as Marsh Tit (141 to 142 respectively) yet field work (see Tits: general) suggests otherwise. Willow Tits are quieter and more secretive than other tits, tending to feed out of sight in low vegetation and less often joining the noisy and conspicuous mixed autumn flocks. Thus in Ashcombe Bottom near Lewes, Winter Atlas counts totalling 24½ hours recorded only 18 Willow Tits to 68 Marsh, yet ringing data at the site suggested equality, with 18 of each caught.

Nonetheless, evidence of the continuing range expansion referred to in Shrubb 1979 was provided by more records from near the coast than usual. Sightings included 4 on 2 May in Arundel Park; 4 on 11 Dec. in Angmering Park; Apr. and June records from Cote Street, Worthing; many sightings from Moulsecobomb, Stanmer and Falmer on the outskirts of Brighton; a pair courtship feeding at Herstmonceux; at least 2 pairs in the Hastings Country Park area; and 1-2 at Marsham near Pett on various spring and autumn dates.

422. **COAL TIT** (*P. ater*).—Records again confirmed that commons with Scots Pine (e.g. Rackham, Ambersham, Graffham, Greatham, Paddockhurst Wood) are the chief haunts of this species. Even here it is generally outnumbered by Blue Tit, except at the Old Lodge NR in the Ashdown Forest (see also Tits: general).

Reports from elsewhere were few, the only sign of coastal movement being 5 W on 19 Oct. at West Hill, Hastings.

423. **BLUE TIT** (*P. caeruleus*).—Breeding season counts from defined areas are given on pages 46-47. Three observers reported possible autumn movements. At Bewl Bridge, 7 flew S on 7 Oct.; at Hastings 5 groups totalling 31 went W on 19 Oct. and westerly movement was also noted on several Oct. dates at Ovingdean and Brighton, again in small groups, for a total of 46, as against only 4 E. See also Tits: general.

424. **GREAT TIT** (*P. major*).—Breeding season counts from defined areas are given on pages 46-47. A melanistic male was seen at Shoreham on 13 Nov. and presumably a different, but identical, dark bird was at Goddards Green from 15 Oct. to the end of the year.

In late autumn, high numbers fed on beechmast on the outskirts of Brighton, with 300 in Stanmer Great Wood on 5 Nov. and 165 there on 26 Dec. Out of 84 netted for ringing in the area during Dec., 64 were females and only 20 were males, an imbalance not found in earlier years. See also Tits: general.

TITS: GENERAL (*Parus sp.*).—The following table shows the relative numbers of the five species as seen on counts in different localities by the same observers (MLC *et al.*).

	Marsh	Willow	Coal	Blue	Great
Houghton Forest (6 Feb.)	17	—	31	250	150
Stanmer Great Wood (5 Nov.)	4	—	18	250	300
(26 Dec.)	5	—	15	267	165
Old Lodge, Ashdown (24 Nov.)	1	—	96	21	—
(22 Dec.)	3	—	52	13	6
Ambersham Common (8 Dec.)	7	—	130	220	20
Greatham Common (15 Dec.)	9	2	53	191	31
Balcombe (17 Dec.)	14	—	24	108	26
North Ebermoe (17 Nov.)	22	6	25	n/c	n/c
Sussex ringing totals 1979-83 (full-grown only)	142	141	417	9423	3381

425. **NUTHATCH** (*Sitta europaea*).—An unusual sighting on the late date of 4 Apr. was 4 birds around a bird table at Bexley Hill. Birds bred again at the isolated Berwick Wood at Arlington and Market Wood at Pett. Counts from defined breeding areas were 3 pairs on 40 ha of farmland at West Chillington and 10 pairs in 100 ha of rural East Grinstead. Other estimates of pairs were a minimum of 21 in Eridge Park, 3 at Coates Common and 1 pair bred in Arundel WFT. One on 18-20 Aug. at Cissbury was the first for that area and 1 was on Beachy Head on 22 Sept.

427. **TREECREEPER** (*Certhia familiaris*).—Apparently an unexceptional year. Though over 70 reports were received from a wide scatter of areas, virtually all were of ones and twos, including a bird climbing the side of a suburban house in Lewes on 16 Jan. Counts of breeding birds from defined areas are on pages 46-47.

430. **GOLDEN ORIOLE** (*Oriolus oriolus*).—Three males were heard calling; at Balsdean on 20 May (GAS), St. Leonards on 5 June and at Beachy Head on 27 June (AQ). Perhaps the good spring weather encouraged these overshoots of this very scarce species, the last coinciding with the flock of Bee-eaters there.

432. **RED-BACKED SHRIKE** (*Lanius collurio*).—Another poor year with only 3 records, all autumn immatures. Singles at Cissbury on 22 Aug. (FJF), at Birling Gap on 30th (MK *et al.*) and at Crowlink on 22 Oct. (CAT).

434. **GREAT GREY SHRIKE** (*L. excubitor*).—The 3 records were singles at Dell Quay on 16 Jan. (BJ, CMJ), Chichester GP on 7 Apr. (CBC, MAC) and at Beachy Head on 19 Oct. (RHC).

435. **WOODCHAT SHRIKE** (*L. senator*).—Recorded in Sussex for the fourth year running with a juvenile present at Selsey Bill on 6 and 7 Sept. (BJ, CMJ *et al.*). This has been accepted by *British Birds*.

436. **JAY** (*Garrulus glandarius*).—On 60 ha at West Chillington 8-9 pairs bred. 1983 will be remembered for the Jay invasion, the first indication of this was between 17 and 24 Sept. with birds moving in several areas and on the 25th, 119 were reported throughout the county moving mainly between NW and NE. On 29th a similar but smaller movement was seen while 103 went N at Hurst Green on 30th.

The first few days of Oct. brought the largest movements, starting with 110 W at 4 sites on the 1st. The total on the 2nd was 596 including 417 N at Cissbury in 4 hours and 52 W at Patcham. A lull on the 3rd brought only 65 SE at Woodingdean, and the main movement was on 4th, when 733 went S or W at 9 sites including 300 at Beachy Head. 165 at East Brighton Golf Course, 122 over North Brighton and 113 at Parham. After that, apart from 21 at Fairlight on the 5th, there were only scattered sightings of high flying birds. For the rest of Oct. and early Nov. slightly larger numbers than normal were seen and birds appeared at several widely scattered sites where they are rare.

The reason for this massive movement is unknown and is undoubtedly more complex than the speculation that exists about acorn failure due to a gall wasp. In Kent the pattern was similar to, though larger than Sussex, with a start on 24 Sept. and a peak on 2 Oct.

437. **MAGPIE** (*Pica pica*):—There were several substantial gatherings noted; the largest early in the year were 72 in a 6 hour "Atlas" count around Midhurst on 20 Feb., 60 at Milland Marsh on 23 Jan. and a roost on 24 Mar. of 34 at Bewl Bridge Res. Later 98 went to roost in Moulsecomb on 9 Nov. although only 63 on 12 Dec.; at Whitbread Hollow the flock reached 43 on 2 Oct. The only defined breeding count was 11 pairs in just 60 ha at West Chiltington, twice as many as last year.

438. **JACKDAW** (*Corvus monedula*):—This species deserves more attention than it usually gets from birdwatchers. Jan. and Feb. pre-roost gatherings noted included 2,500 at West Chiltington, 1,500 at Westhampnett, 350 at Mountfield and 250 at Arundel. At Brighton Marina 2 came off the sea on both 4 Mar. and 12 Apr.

A noticeable movement was seen between 20 Oct. and 13 Nov., with 120 W at Brighton and 100 W at Paghham Hbr. on 20 Oct. At Slimfold 110 went SW at a great height on 29 Oct. Larger numbers than usual were at Amberley on 12 Nov. and 126 at Pett on 13 Nov. In Kent record immigration was noted between 22 Oct. and 10 Nov. and no doubt the Sussex movements are related to that influx. In late Dec. the West Chiltington roost held 2,000 and there were 500 at Arlington.

441. **ROOK** (*C. frugilegus*):—Pre-roost gatherings included 6,000 at Westhampnett on 18 Jan., 5,000 at Arlington on 27 Dec. and 1,500 at West Chiltington on 9 Jan. where there were 1,000 on 22 Dec. Several flocks of 500+ were noted but there was no sign of any Oct. movements, unlike Jays and Jackdaws. Too few breeding records were submitted to enable monitoring of the population changes although in Lewes 96 nests were found, an increase of 15 on 1982 and reversing a previous decline.

442. **CARRION CROW** (*C. corone*):—There was no evidence of spring immigration but on 20 Oct. 50 at Brighton Golf Course which went NW may have been migrants, see Jackdaw. There was an exceptional number of 68 on 13 Nov. at Marsham Valley, Pett.

442b. **HOODED CROW** (*C. c. cornix*):—The only record was 1 at Rye Hbr. on 13 Apr.

444. **STARLING** (*Sturnus vulgaris*):—Roost gatherings noted included up to 10,000 at Lower Dicker on 25 Jan. where there were 7,100 on 6 Dec. At the Southlands Hospital roost, Shoreham there were 5,000 on 12 Jan., at Rye Hbr. 8,000 on 13 Nov. and 3,000 were at Waterhall on 14 June. Small numbers were involved in the Oct. corvid movement, most obviously between the 10th and 31st.

445. **ROSE-COLOURED STARLING** (*S. roseus*):—An adult at Hassocks on 22 July (PAG, BWH, CCG) fits in with normal vagrancy pattern for adults and has been accepted by *British Birds*.

448. **TREE SPARROW** (*Passer montanus*):—Early in the year only 152 were reported from 13 sites, with the largest numbers being 30 at Barcombe Res. and at Crowborough. The autumn numbers, however, were higher; 500 and 200 moved W at Hastings on 19 and 21 Oct. respectively. At the end of the year 435 were seen at 14 sites with maxima of 200 at Rye Hbr., 63 at Wisborough Green and 40 at Ashcombe Bottom; at this last site, this contrasted strongly with their complete absence in 1982.

451. **CHAFFINCH** (*Fringilla coelebs*):—During Jan. 580 were recorded from 9 localities; flocks ranged from 17 to 100, averaging 64. Feb. records totalled 1,040 with 440 at Houghton Forest, 200 at Stansted Forest, and 400 from 7 other localities; flocks ranged from 25 to 120 and averaged 57. On 3 Apr. a strong NE movement of 100 birds per hour was recorded at Pett Level. Counts of breeding birds in defined areas are given on pages 46-47.

Autumn movements were first noted on 27 and 30 Sept. but it was not until late Oct. that the main passage W was observed. Counts made between 20 and 30 Oct. in the Crowborough/Hurst Green area revealed 1,854 W mostly on the 20th and 21st. On the

20th, 600 also went W at Swanborough Hill and 160 at Ovingdean; at Beachy Head there were 200 W on 29 Oct. A few birds were observed moving along the coast in early Nov. but 1,500 were recorded from 11 other localities in Nov. and 1,550 in Dec.; the average flock size was 147. The largest flocks were 550 at Stanmer Great Wood and 325 at Wiggonholt Common and Moulsecomb.

452. **BRAMBLING** (*F. montifringilla*):—The Jan., Feb., Mar. and Apr. recorded totals were only 9, 27, 9 and 7 respectively (cf. 8 and 6 in Nov/Dec. 1982). After 1 at Beachy Head on 2 Oct., 40 were recorded migrating from 19-31 Oct., with 7 NW at Hurst Green on 20 Oct. and 10 W at Beachy Head on 29 Oct. At Pett Level 33 E were recorded on 13 Nov. However the total for Nov. rose to approximately 290 with c.200 around the Stanmer area and 50-60 at Rye. In Dec. the number in Stanmer Park declined to 135 but there were 85 in Withdean Park, Brighton so, with up to 23 at Rye Hbr., numbers remained around the 300 mark.

453. **SERIN** (*Serinus serinus*):—Six birds recorded. Three different males were at Beachy Head on 6 Mar., 7 June and 18 July (RHC) and, at Selsey Bill, a probable adult male on 22 Apr. (RS), an adult female on 5 May (OM, NC, MJ) and a female on 7 Aug. (MJWH).

455. **GREENFINCH** (*Carduelis chloris*):—During the first 3 months of the year, apart from 200 at Easebourne on 30 Jan., only 200 were recorded from 5 other localities. Breeding counts from defined areas are on pages 46-47.

Coastal movement was light during the autumn with a maximum of 150 W at Hastings on 19 Oct. However 1,650 were recorded from coastal and downland localities during the month, with 1,000 at Rye Hbr. LNR, 300 at Climping and 200 at Portslade. The Nov. and Dec. totals from the first 2 were 1,270 and 340 respectively, the Rye flock reducing to 800 by mid-Nov. and 150 by mid-Dec. The Oct., Nov. and Dec. totals elsewhere were only 60, 40 and 85 respectively.

456. **GOLDFINCH** (*C. carduelis*):—During Jan., Feb. and Mar. recorded totals were 75, 128 and 40 respectively, with monthly maxima of 30 at Rotherfield on 16 Jan., 65 at Chidham on 2 Feb. and 40 at Barcombe on 26 Mar.

Post-breeding flocks during Aug. totalled 464, including 100 at both Filsham and Shoreham. Predominantly westward coastal passage was recorded between 4 Sept. and 6 Nov. with "flocks up to 70 all day" at Beachy Head on 22 Sept.; in Oct. and Nov. the total W was 1,684 with 300 and 900 at Fairlight on 5 and 19 Oct. respectively. Other flocks in the county during Sept., Oct. and Nov. totalled 1,050, 790 and 114 respectively. During Dec. 464 were recorded from 14 localities, the largest flocks being 110 at Hellingly and 68 at Weir Wood Res., both feeding in alders.

457. **SISKIN** (*C. spinus*):—The Jan. total of 181 (cf. 149 in Dec. 1982) included 35 at Midhurst, 30 at Tilgate, 20-30 at Lower Beeding and 20 at Worth Lodge Forest. The totals for Feb. and Mar. reduced to 54 and 24 respectively. April's total of 63 included 40 at Darwell Res. and on 3 May a single was in Ashdown Forest. A male was recorded in north-east Sussex on 20 June.

Coastal movement between 2 Oct. and 30 Oct. totalled only 41; with 164 from inland areas, including 50+ at Mannings Heath and 50-70 in the Cuckmere valley. In Nov. 175 were recorded from 16 localities, flocks ranged up to 35 and averaged 11; in Dec. 250 were recorded from 21 localities with flocks of up to 30, averaging 12.

458. **LINNET** (*C. camabina*):—Jan., Feb. and Mar. recorded totals were 117, 247 and 60 respectively, including 149 at Stedham on 24 Feb. and a flock 35-60 at Bewl Bridge Res. throughout the period. Spring passage was poorly documented. Apart from counts from defined areas on pages 46-47, other estimates of breeding numbers included 30+ pairs around Belle Tout, Beachy Head and 23 pairs on Southwick Hill.

After an initial flock of 130 at Truleigh Hill on 28 July, the Aug. and Sept. totals were 102 and 213 respectively. Autumn passage recorded during Oct. was as follows: 30 S

at Bewl Bridge Res. on 4th; 200 W at Fairlight on 5th; 327 SW at Cooden on 11th; 189 W at Beachy Head and 500 W at Cornish Farm on 13th; 1,700 W at Hastings on 19th; 200 S at Crowborough on 20th and 500 W at Pagham Hbr. on 28th. Nov. and Dec. totals were 111 and 453 respectively, including 130 at Bewl Bridge Res. on 16 Dec. and 200 at Rye Hbr. on 18 Dec.

459. **TWITE** (*C. flavirostris*):—Only reported from the R. Adur at the start of the year with 6+ on 2 Jan. and 18 there on 13 Jan. In late Oct. 10 were at Cuckmere Haven on 26th and 4 on East Brighton Golf Course on 28th. In Nov. 21 were at Sidlesham Ferry on 6th, increasing to 28 on 13th; they were present into 1984. Also on 13 Nov. 18 were back on the R. Adur, increasing to 22 on 24th and 3 at Cuckmere Haven. Eighteen were still on the Adur in mid-Dec. with 7 at Rye Hbr. and 3 still in Cuckmere on 31st. Another below average showing.

460. **REDPOLL** (*C. flammea*):—Nearly all the early winter reports came from the north of the county with peak counts of 73 at Tilgate, 100 at Rotherfield, 120 at Eridge Park in Jan.; 20 at Ashdown Forest in Feb.; 35 at Mannings Heath in Mar.; 50 at Brightling Wood, 30 near Haslemere in Apr. and more than 30 in Ashdown Forest at the beginning of May. There were no reports of spring movements from the coast.

During the summer there were approximately 130 potential or breeding records, including more than 50 from Ashdown Forest where good coverage was obtained. The remaining records were from the commons and heathland in the West, north Sussex and the High Weald. No details were received from south-east Sussex.

Between late Sept. and early Nov. movement involving over 200 birds was reported along the coast from Rye to Selsey. Late in the year they were widely reported. The larger flocks noted were up to 60 in the Crowborough area during Oct. and Nov., 65 at Rotherfield and 42 at Chailey during Nov., 92 at Old Lodge and 88 at Wych Cross in Dec., while flocks first noted at Three Bridges in Nov. and Gossops Green in Oct. built up to 74 and 50 respectively by the end of the year.

463. **CROSSBILL** (*Loxia curvirostra*):—In late summer, a male was seen at Bewl Bridge Res. on 14 June and several were at Wakehurst Place 23-30 Aug. A substantial, but undoubtedly under-recorded, influx after 2 barren years, was noted between 23 and 31 Oct., with a total of about 150 seen at 10 sites. These involved about 60 in the Midhurst area, about 40 in Worth Forest, 38 at Footlands Wood, Sedlescombe, 6 at Hurst Green and 5 at Peasmarsh. Numbers near Midhurst and Worth Forest remained high to the end of the year; others were seen on Ashdown Forest, 15 on 19-20 Nov., and on the Parham estate where 21 were seen on 15 Dec.

467. **SCARLET ROSEFINCH** (*Carpodacus erythrinus*):—A male in song at Beachy Head on 2 June (RHC) is our first spring record. A male was singing at Dungeness, Kent, only 2 days later.

469. **BULLFINCH** (*Pyrrhula pyrrhula*):—Few flocks were noted. During Jan. 70 were recorded from 6 localities; flock size ranged from 6 to 21, averaging 11. In Dec. there were 33 from 5 localities; the flock sizes were 3-10 and averaged 7. Counts of breeding birds in defined areas are on pages 46-47.

470. **HAWFINCH** (*Coccothraustes coccothraustes*):—Recorded in small numbers throughout the year with 2 at Arundel in Jan., 1 at Cripps Corner in Feb., up to 8 at Wakehurst Place in Mar-Apr. and 1 at Bewl Bridge Res. on 24 June; 5 on the Downs near Storrington on 21 July was unusual. In the autumn, singles were at Loughton in late Aug. and at Fernhurst. One or 2 were seen at Wakehurst Place at the end of the year with 1 at Crowborough on 4 Dec.

493. **LAPLAND BUNTING** (*Calcarius lapponicus*):—1977:—Two at West Beach, Littlehampton on 12 Oct. (RG) have just been received.

1983:—Singles seen at Pagham Hbr. flying SW on 27 Oct. (RJF), at West Beach, Littlehampton on 28 Oct. (ASC) and at Beachy Head on 4 Nov. (RHC).

494. **SNOW BUNTING** (*Plectrophenax nivalis*):—1982:—One was on the Adur Levels on 9 Jan.

1983:—Two remained at Pagham Hbr. from 1982 to 10 Mar. On 26 Feb. 5 were seen on Pevensey Levels with one at nearby Langney Point on 12 Mar.

In late Oct. there were 2 W at Devil's Dyke on 20th and singles at Bewl Bridge Res. on 25th and Steyning Round Hill on 26th. Subsequent records were all of single birds: at Brighton Marina on 16 Nov., Pett Level on 20th and 29th, Worthing on 21st, Nutbourne on 26th and finally at Thorney on 4 Dec.

496. **YELLOWHAMMER** (*Emberiza citrinella*):—Following 657 recorded in Dec. 1982, the Jan. figure from 11 localities was 477; flocks ranged from 17 to 62, averaging 43. Feb., however, produced only 4 records totalling 225, including 121 at Pagham Hbr. and 85 at Chyngton Farm; in Mar. 3 records totalling 116 including 80 at Alfriston. Breeding season counts from defined areas are shown on pages 46-47.

After flocks of 50+ at Hurst Green on 28 Sept., 42 at Newmarket Plantation on 20 Oct. and 75 at Seaford on 30 Oct.; Nov. records totalled 391 comprising 250 at Cissbury and 141 from 6 other localities. In Dec. numbers were reduced to 215 involving 141 at Newmarket Hill and 74 from 5 other localities with a maximum flock size of 27.

497. **CIRL BUNTING** (*E. cirlus*):—The only documented record was of a male at Glynde on 18 Aug. (PJW).

499. **ORTOLAN BUNTING** (*E. hortulana*):—Three records. One at Beachy Head on 6 May (RHC) and another there between 8-10 Oct. (RDME, SPH, RHC *et al.*). An immature was at Climping on 24 Sept. (RG, TPI).

506. **REED BUNTING** (*E. schoeniclus*):—Much the largest winter gatherings were at Ashdown Forest; 106 in an "Atlas" count N of Isle of Thorns on 23 Jan. and 170 roosting there on 30th. Elsewhere there were 40-45 at Hampden Park Brooks on 9 Jan. and 28 at Pagham Hbr. on 21 Feb.

The species was widely reported by the Inland Wetland Inquiry in the breeding season; a total of 256 singing males or pairs was located with the largest concentrations being 40+ at Bewl Bridge Res., 40 at Rye Hbr., 30 at Pagham Hbr., 15-20 at Lewes Brooks and 19 (as 1982) on 55 ha. of the Adur Levels.

Some autumn passage was evident in late Sept. and Oct. For instance peaks at Climping were of 13 on 25 Sept., 15 on 30th, 21 on 18 Oct. At Selsey Bill there were 6 on 24 Sept., at East Brighton Golf Course 4 on 6 Oct., 10 on 20th and at Cuckmere Haven 12 on 23rd. Up to 85 were back near the Isle of Thorns through Nov. and Dec., with 23 scattered around Nutley and Duddleswell. At Steyning Round Hill 30 were in a stubble field in Nov.

510. **CORN BUNTING** (*Miliaria calantra*):—Early in the year, flocks included about 50 going to roost at Berwick on 2 Feb., up to 33 around Amberley and 30 at Pagham on 12 Feb.

At various downland sites between Beachy Head and Southwick, 86 singing males were reported. There were also 5 each at Rye Hbr., above Storrington and at Selsey West Fields.

The larger numbers late in the year were 150 on the Downs behind Seaford on 30 Oct. at which time 50 were at the East Brighton Golf Course, 210 at Rye Hbr. on 20 Nov., 51 near Shoreham on 26 Nov., 51 at Thorney Deepes on 3 Dec. and 74 roosting at Southeast on 17th.

Key to symbols and terms

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

Details were received of 20,557 birds ringed of 98 different species, the highest totals since 1977. Resident birds thought to have been affected by the 1981/82 hard winter (see 1982 report) showed a good resurgence: Kingfishers rose from 3 to 14 ringed, while other increases included Pied Wagtail, up by 86%, Wren by 40%, Dunnock 19%, Robin 35% and Song Thrush by 20%. Evidence that ringing totals can reflect real changes in abundance was provided by the record Sparrowhawk tally of 15 netted, and by the 30 full-grown Jays ringed, compared with a steady 6 to 9 in the four preceding years. Interestingly, the dates of capture suggested a high Sussex population even before the autumn disruptive movements.

Most of the birds ringed in Sussex are small passerines caught with mistnets. Although the massive efforts of the Study Group have shown that adult gulls can be cannon-netted in large numbers, the only practical time to ring many seabirds is at the nestling stage. While Sussex has 140km of coastline, over 60% is built-up, and even on the more natural stretches few species breed. Thus many common seabirds are never ringed in the County, and we are dependent for information about this important group on recoveries of nestlings ringed elsewhere. The following series demonstrates the origins of seabirds recently found in Sussex:

Red-throated Diver 1 04.08.79 North Mainland, Shetland
 x 21.01.81 Off Seaforth 1095km S

Though Fulmars colonised Sussex in 1976, not all those seen are local birds:

- Fulmar* 1 23.07.82 Fair Isle
 x 25.01.83 Rye Harbour (SJRR) 967km S
- The next group included a midwinter Gannet which perhaps died of old age, in contrast to the typical misadventures of inexperienced young birds:
- Gannet* 1 03.07.66 Ailsa Craig, Strathclyde
 x 04.01.83 Selsey Bill (RML) 580km SSE
 1 07.06.81 Les Echreous, Channel Isles
- Cormorant* 1 25.09.81 Hastings 2500km NE
- Cormorant* 1 20.06.82 St. Margaret's Isle, Tenby, S. Wales
 x 21.04.83 6 miles SW of Hastings (SJRR) 383km E
- Shag* 1 18.07.79 Isle of May, Fife
 x 04.03.82 Bewl Bridge Res. 599km SSE
- Razor-bill* 1 23.06.81 Bardsley Island, Gwynedd, Wales
 (sick) v 16.04.83 Fairlight Glen, Hastings (SJRR) 429km SE

The Gull Study Group has now had three breeding season recoveries of Great Black-backed Gulls in Norway, one as far as 70°N, well beyond the Arctic Circle. These are complemented by the finding of a sick immature ringed as a nestling in Norway, though much further south:

- Great Black-backed Gull* 1 16.06.80 Austevoll, Hordaland, Norway
 v 10.10.82 Rye Harbour (RK)

It is well established that the wintering Herring Gulls in the London area are of the large and heavy Scandinavian type with a darker mantle than our own.

Measurements of Herring Gulls trapped in coastal Sussex in winter suggest that a few also belong to this race, as has now been confirmed by a recovery:

- Herring Gull* 6 26.11.78 Sompting Tip (GSG)
 + 18.08.83 Kvalavag, Kalimoy, Rogaland, Norway 1009km NE

There is very little information from ringing about waders in Sussex. Wintering Redshanks outnumber the breeding population several times over, so it is of interest that two wing-tagged birds seen at Hayling Island on 8.3.81 had been ringed in 1976 and 1977 at Banks Marsh on the Ribble Estuary, where they have been sighted every summer up to 1983.

Though not strictly a seabird, the Peregrine was very much a falcon of the sea cliffs when it used to breed in Sussex, in the pre-pesticide era. Nationally the Peregrine has made a heartening recovery and is almost back to its former numbers everywhere apart from southern England. It still remains a very scarce visitor to Sussex, and it is likely that even the few seen annually (and the even fewer accepted by the Records Committee!) offer very little hope of recolonisation. Ringing evidence suggests that passage and wintering birds in south-east England originate from the migratory Scandinavian population and will return there to breed. Up to 1951, two Norwegian and six Swedish birds had been recovered in Britain, but (because few were ringed?) the next example was not until 1983:

- Peregrine* 1 04.07.82 Rost Isle, Nordland, Norway
 x 05.01.83 Stone Haul, Haywards Heath (GdeF) 1957km SW

A male, it was found entangled in a bramble bush, probably after too heedless a pursuit of its prey; an ignominious end for a fine bird.

After Peregrines, small passerines are an anticlimax, but as usual some interesting movements were recorded. An abnormally long-distance Wren should be added to the cold winter examples given in the 1982 ringing report:

- Wren* 3 04.07.80 Read, Lancashire
 x Jan. 82 Bognor Regis 355km SSE

Blackbirds from the Low Countries regularly reach Sussex, and the following would be entirely typical, except that it was ringed in a suburban garden. Previous records, mainly from the Downs, suggested that the shy immigrant Blackbirds avoid residential areas.

- Blackbird* 3 ♀ 10.10.82 Pateham, Brighton (RH)
 v 04.05.83 Aveleghen, West-Vlaanderen, Belgium 253km E

The tendency of departing summer visitors to aim for the shortest crossing of the Channel, and hence the favoured position of Sussex on migration routes, are both well known. Even fliers as expert over water as Sand Martins, and as far west as Ireland, seem regularly to make this detour through the south-east before reorientating southwestwards (Mead and Harrison, 1979):

- Sand Martin* 3 16.07.83 Glenville, Cork, Eire
 v 05.09.83 Fisham (DO'K) 637km ESE

Being the last stop before a sea crossing, the south coast is important for its fattening grounds for many small migrants. Careful conservation work is improving the habitat at one such site, the Severals Reedbed, and those performing this strenuous and messy task may feel rewarded by the following controls. These show that the benefits are appreciated by more than the local birds:

- Sedge Warbler* 3 30.07.83 Queenzieburn, Strathclyde
 v 21.08.83 Church Norton (CRG) 618km SSE
- Sedge Warbler* 3 05.08.83 Errol, Tayside
 v 21.08.83 Church Norton (CRG) 648km SSE

Is it merely coincidence that Sedge Warblers from a similar part of Scotland were at Church Norton on the same day? It is possible that warblers may migrate through Britain in stages of different lengths according to species. Figure 1 contrasts the far-flung locations of Willow Warblers moving to or

from Sussex over the past five years (average distance 382km) with the much more limited catchment area shown by Blackcap recoveries (average distance 159km).

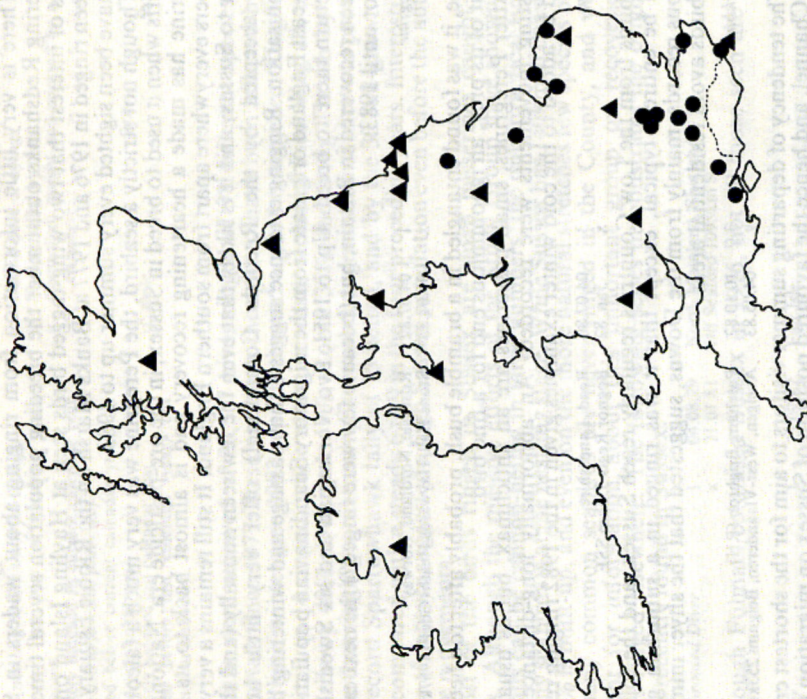


Figure 1. Ringing or recovery sites of Blackcaps (●) and Willow Warblers (▲) passing through Sussex 1979-1983.

The map may simply reflect that Blackcaps are commonest in southern and eastern England, becoming increasingly scarce northwards, whereas Willow Warblers are abundant throughout Britain. Nonetheless, the paucity of short distance Willow Warbler movements to or from Sussex does suggest that they migrate in relatively long stages compared with Blackcaps.

However, such a strategy may cause its own problems — species using it are more likely to fly too far. Overshooting seems the only feasible explanation for a Sussex-bred Willow Warbler ringed as a young juvenile which was controlled the next spring in Finland, an unprecedented event. Willow Warblers normally return very faithfully to their natal areas:

Willow Warbler 3J 21.06.82 Ashcombe, Lewes (RL)
v 17.05.83 Lagskar, Aland, Finland 1602km NE

Finally among the warblers, a Blackcap controlled in East Germany may be linked with the now-familiar tendency of some Continental ones to winter in Britain:

Blackcap

3 ♀ 25.09.81 Beachy Head (BHRS)
v 09.07.83 Bad Salzungen, Suhl, GDR 687km E

A similar change in wintering grounds may apply less noticeably to another species — the Firecrest, which has increased considerably in Sussex in recent years (Shrubbs 1979). It may be that the autumn influxes along the Sussex coast, which are generally termed "passage", reflect instead the arrival of birds which will stay to winter in Britain. As yet, ringing evidence is sparse, with only seven Firecrest recoveries nationally up to the end of 1982, but both an October immigrant in 1979 (SxBR. 33: 69) and the next proved to be overwintering, though not necessarily in Sussex:

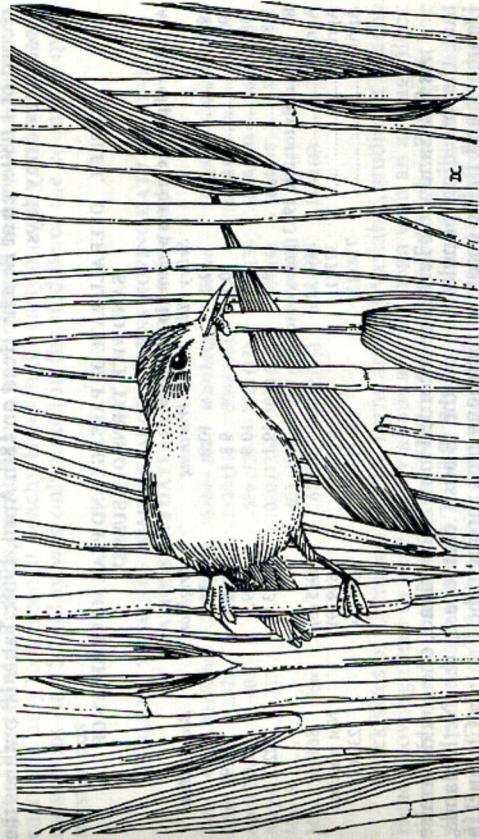
Firecrest 3 ♀ 30.10.82 Beachy Head (BHRS)
x 25.02.83 Guildenford, Burford, Oxon 177km NW

Even in Sussex, few ringers are fortunate enough to be able to handle birds like Firecrests regularly. Yet there is always hope that the more mundane species will provide an interesting recovery. British Starlings are relatively sedentary, and the next was a very long and adventurous movement by a juvenile, but which profited it not:

Starling 3J 27.05.83 East Grinstead (JC)
(drowned) x 05.07.83 Billingham, Cleveland 394km N

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SOME ASPECTS OF THE SEA-BIRD MOVEMENTS OBSERVED FROM THE SUSSEX COAST DURING THE SPRING 1983

by J. A. Newnham

The spring months of 1983 were wet and cold; April temperatures were below average and many parts of the county recorded double the usual rainfall in May. There were no long, settled periods of weather as Atlantic depressions were always close to the British Isles, their associated frontal systems bringing periods of rain and strong winds. In early April predominantly cold northerly winds blew but after mid-April the wind direction alternated between south-east and south-west providing conditions which frequently bring sea-birds within sight of the Sussex coast.

Prolonged periods of sea-watching were carried out between March and May at Selsey Bill (471 hours), Worthing (352 hours), Hove (61 hours), Brighton Marina (284 hours), and Beachy Head (111 hours). During these observations many thousands of birds were logged and details of the numbers of each species seen are documented in the systematic list. The spring, however, was dominated by a large tern and skua passage and a record number of sightings of Manx Shearwaters; these aspects are described below.

It was a particularly good spring for Sandwich Terns, at least 7,054 being recorded. Characteristically these birds pass in a steady stream close to the shore and therefore one could expect only small variations in the numbers recorded at each site. This is clearly demonstrated in Table IA which shows comparatively little change in the rate of passage between west and east Sussex or from year to year, except in 1983 when all stations, except Selsey, recorded higher rates of passage than recent years and most were seen in East Sussex.

The numbers recorded on peak days during 1983 were also greater than the peak days recorded in recent springs and compare well with the county record of 1,080 seen at Beachy Head on 18th April, 1968; Table IB outlines the most noteworthy days.

TABLE I. OVERALL RATE OF PASSAGE AND PEAK MOVEMENTS OF SANDWICH TERNS OFF SUSSEX

A. Rate of passage in birds per hour in April/May	Sandwich Terns off Sussex		
	Selsey Bill	Worthing	Brighton
1980	11.1	10.8	14.9
1981	10.1	9.8	9.1
1982	5.9	10.9	9.8
1983	9.5	19.1	23.9
B. Peak daily totals in 1983 (hours watched)			
April 10	849 (12%)	1248 (11)	1015 (6)
April 20	377 (11)	758 (13)	659 (9)
April 22	774 (13)	864 (13)	1000 (14)
			Beachy Head
			10.6
			8.9
			10.0
			22.3
			861 (6)
			Not watched
			232 (3%)

As few Sandwich Terns are recorded moving overland, one could surmise that the breeding populations of the British east coast, the Netherlands, Denmark and Baltic coasts of Germany pass through the English Channel in spring and the whims of the weather dictate the numbers within sight of the shore. Clearly, on 10th April, an early date for a large movement, the weather conditions were ideal for viewing Sandwich Terns. A low pressure area moved eastward through the English Channel producing light easterly winds at dawn which rapidly backed to south-south west and freshened; during this morning most sites noted a phenomenal rate of 300 Sandwich Terns passing per hour. Interestingly, farther west this large movement was not detected as, in Hampshire, only 65 were seen at Keyhaven and 26 at Titchfield.

Sandwich Terns typically move in small parties; the average found at Beachy Head during the late 1970s was 3.7 birds per flock and tended to vary neither from one day to the next, nor to be influenced markedly by the weight of passage (M. J. Rogers *in litt*). Similarly, at Worthing the mean flock size for the past five springs has remained remarkably constant, ranging between 2.1 and 2.3 birds per flock. A slight increase to a mean of 3.1 birds per flock was noted at Worthing during April and May of 1983.

The spring migration of Common/Arctic Terns differs markedly from the Sandwich Tern and this was clearly demonstrated in 1983. Typically Common/Arctic Terns appear later in the season, large movements being most frequent at the beginning of May, occur in larger numbers than Sandwich Terns, often form large flocks sometimes moving well off-shore and frequently move overland, resting at inland reservoirs. Movements of Common/Arctic Terns often occur in waves, switching on and off rapidly for no apparent reason, and therefore making the concept of 'rate of passage' meaningless.

Nearly 80% of the county total of 12,636 in 1983 was seen on just five days and the daily totals for these days are shown in Table II. The peak movements on 20th April and the 22nd were remarkably early for movements of such magnitude. The table raises many questions on Common/Arctic Tern passage as each of the days recorded show different patterns of occurrence at each site. These differences may simply reflect the difficulties of observing distant low-flying terns from sea-level observation points such as Selsey Bill and Worthing but they may suggest some overland movement, particularly on 20th and 22nd April when several flocks were noted at inland reservoirs and more birds were noted in Hampshire entering and passing through the Solent than were emerging at Selsey Bill. On 22nd April, more than half of the day's total at Worthing passed in a two-hour period of heavy rain during late afternoon. The passage during light south-easterly winds on 4th May was more steady, and predictably increasing numbers were noted per hour watched at the sites in the east of the county. Perhaps on 6th May a wave of terns had moved sufficiently eastward only to be seen at Beachy Head in the early morning and why a large movement on 15th May was only noted in the middle of the county is quite mysterious.

TABLE II. TOTALS OF COMMON/ARCTIC TERNS MOVING AT 7 COASTAL STATIONS ON 5 DATES IN 1983 (HOURS WATCHED)

Date	Keyhaven	Titchfield	Selsey Bill	Worthing	Hove	Brighton	Beachy Head
April 20	2625	2385	1320 (11)	3048 (13)	—	1468 (9)	—
April 22	403	854	586 (13)	2320 (11)	110 (3)	1864 (14)	629 (3%)
May 4	713	337	1080 (13%)	1029 (11)	393 (4)	1624 (10%)	838 (5%)
May 6	Few	Few	103 (12)	197 (8%)	39 (1)	47 (3)	957 (3)
May 15	Few	Few	61 (6)	2052 (8%)	694 (4)	1130 (6)	345 (?)

Flock sizes of Common/Arctic Terns are very variable, studies at Beachy Head showing them to vary widely about a daily mean with an average flock size of between 11.1 and 18.2 from 1973 to 1978; at Worthing over the past five years the range was between 3.7 and 11.3 birds per flock. The highest average of 11.3 occurred in 1983 when flocks of up to 148 were noted on particularly heavy days of passage.

Skuas frequently, although not invariably, move with terns. The spring of 1983 brought larger numbers of Arctic and Great Skuas within sight of the coast than usual but very few Pomarine Skuas. Records of both the Arctic and Great Skuas were difficult to link from one site to another; the peak movements at all stations fell on different days, and good movements at one station were not always noted at others. The peak days for these skuas noted at each site are shown in Table III and, from their daily logs, c.290 Arctic Skuas and 43 Great

Skuas passed eastward; possibly this total would have been greater if there were more watching at Beachy Head during late April and early May.

TABLE III. PEAK DAILY TOTALS OF ARCTIC AND GREAT SKUAS AT 4 SITES IN SUSSEX IN 1983 (HOURS WATCHED)

	Selsey Bill		Worthing		Brighton		Beachy Head	
	Arctic Sk.	Great Sk.	Arctic Sk.	Great Sk.	Arctic Sk.	Great Sk.	Arctic Sk.	Great Sk.
April 22	20 (13)	4	7 (13)	1	17 (14)	2	2 (3%)	3
April 23	7 (8%)	3	10 (7)	3	1 (5)	—	24 (5)	10
April 28	10 (5%)	1	11 (8)	1	21 (7)	3	Not watched	—
May 4	7 (13%)	—	14 (11)	—	10 (10%)	—	2 (5%)	—

Arctic Skuas are dimorphic and both light and dark phases are recorded during the spring. At Selsey Bill studies over the past five years have shown the dark-phase to be nearly twice as numerous as light-phase individuals and in 1983 a similar proportion was noted at Beachy Head. As the spring progresses the proportion of light-phase skuas increases; an expected phenomenon as Arctic Skua colonies in southern Scandinavia, comprising more than 95% dark-phase individuals, are occupied much earlier than colonies farther north and east with up to 90% of light-phase birds. Arctic Skuas from the Scottish colonies where between 21%-50% are light-phase, probably return to their colonies via the west coast, thus most of the birds using the English Channel/North Sea route are probably bound for Scandinavia or the USSR.

Observations during the past few years demonstrate that the passage of Arctic Skuas can be seen fairly evenly throughout the day; however in 1983 at both Selsey Bill and Worthing 60%, a higher than usual proportion, were seen after midday. Arctic Skuas tend to move in small parties, the average flock size found between Selsey Bill, Worthing and Beachy Head, ranged between 1.3 to 1.7 birds per flock.

The few parties of skuas which could be tracked from one site to another, suggested that Arctic Skuas were travelling eastward at between 37-50 Kph and Great Skuas during the same south-easterly wind varied between 28-43 Kph. Although south-east winds are favourable for seeing skuas in spring in the Channel, both the Arctic and Great Skua occur regularly on south-west winds and are most numerous in circumstances when the wind swings between south-east and south-west as frequent frontal systems or low pressure areas move eastward across the country. Such circumstances occurred during late April and May and could be the reason why more than usual of these skuas were observed this year. By contrast, these conditions seem to deter Pomarine Skuas from entering the English Channel on spring migration. Many hundreds were recorded during May 1983 from south-west Ireland and passing the western isles of Scotland, but very few were observed from Sussex or Kent, where settled anti-cyclonic conditions with south to east winds are the circumstances when Pomarine Skuas are most frequently recorded. Interestingly, similar weather patterns often produce a visible passage of waders such as Grey Plover, Ringed Plover, Knot, Sanderling and Dunlin, all species which typically are more numerous in spring on the west coast estuaries and all of which were recorded in only low numbers passing the Sussex coast in 1983.

If cyclonic weather conditions deprived the south coast of certain species, it was certainly responsible for creating perhaps the most unusual records for this spring. On 1st May, one of many Atlantic depressions rapidly moved eastward, bringing with it large numbers of Manx Shearwaters. The first note of this movement occurred when c.1,600 passed eastward at Portland on 1st May and the following morning Manx Shearwaters, possibly returning to their west coast breeding colonies, were seen from Dungeness (c.80 W), Beachy Head

(159 W), Hove (11 W), Worthing (82 W), and Selsey Bill (177 W). Many of the small flocks were a long way off shore, only visible through telescopes, and one could imagine that only the very edge of a substantial displacement was being recorded. On other days a further 66 were seen from either Selsey Bill or Worthing, so bringing the county total to a minimum of 233 or possibly as many as 495 and a new county record.

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GULLS ROOSTING IN WINTER IN SUSSEX IN 1983

by J. A. Newnham

Until the end of the last century gulls were predominantly coastal species but within the past ninety years increasing numbers of gulls have been noted feeding and roosting inland. Initially small flocks were seen in the London area but rapidly numbers increased and gulls became widespread across inland England and Wales. In 1953 the British Trust for Ornithology (BTO) conducted the first enquiry to determine the number of inland roosting gulls (Hickling 1954). A decade later a similar census revealed an increase from 533,000 gulls to 504,000 gulls and Hickling showed that by 1973 about a million gulls were roosting at inland sites in England and Wales.

Unfortunately very little national information was available for coastal and estuarine roosts until the Birds of Estuaries Enquiry (Prater 1981), the results of which suggested many more gulls roosted at coastal sites than inland. This was clearly demonstrated in Sussex during the winters of 1977 to 1979 when between 86% and 92% of the county's roosting gulls were using coastal or estuarine sites (Porter 1978).

During late January 1983 the BTO organised the fourth decadal census of inland roosting gulls but extended the survey to include Scotland, Northern Ireland and coastal sites. In Sussex the census was conducted at dusk on 22nd/23rd January.

METHOD

The methods were similar to those employed in the previous co-ordinated roost counts in Sussex (Porter 1978); the most favoured method being to count the birds on the flight lines going to roost. However, some sites were counted with gulls resting on the water surface and the majority of locations used a combination of both methods. In addition to assigning birds into categories of 'large gulls' (Herring Gull, Lesser Black-backed Gull and Great Black-backed Gull) and 'small gulls' (Black-headed Gull and Common Gull) observers were asked, where possible, to identify species or to count the proportion of the various species in several parts of the roost and then multiply these proportions to the whole roost.

RESULTS AND DISCUSSION

Fair weather with light winds coupled to good coverage produced a comprehensive set of results as shown in Table I. All the regularly used inland roosts were counted and the estuaries and coastline were well watched apart from some small isolated stretches in East Sussex, none of which were thought to support significant numbers of roosting gulls.

The total count of 148,607 gulls exceeds any of the previous co-ordinated counts and is 11% greater than the maximum number counted in three years and described by Porter (1978), suggesting an increase in the wintering population may have occurred in the few years since 1978. The preliminary analysis of the national data for inland sites is revealing that there has been a further 15% growth over the past ten years.

With the exception of a low count at Bewl Bridge Reservoir, the observers at inland roost sites felt their counts were typical and, in line with national findings, all except Arlington Reservoir reported an increase over the 1978 count. In keeping with Porter's study these inland roosts supported 12.7% of the county total. The other main and traditional sites were in the West Sussex harbours (25.7%); on the coastal strip between Littlehampton and Brighton (43.3%) and at Rye (8.8%).

Weather, particularly the wind, and tide can alter dramatically the distribution of roosting gulls. The calm conditions prevailing on the count

TABLE I. ROOSTING GULLS IN SUSSEX AT DUSK ON 22/23 JANUARY 1983

Species	Count	Percentage
Chichester Harbour	16,000	10.8%
Pagham	1,561	1.0%
Bognor-Middleton	7,900	5.3%
Littlehampton-Kustington	2,000	1.3%
Angmering-Kingston Gorse	2,660	1.8%
Ferring	4,200	2.8%
Worthing (Brooklands-Goring)	15,454	10.4%
Lancing	1,648	1.1%
Shoreham	1,450	1.0%
Southwick-Hove	4,020	2.7%
Brighton-Saldean	9,600	6.5%
Newhaven	565	0.4%
Cuckmere	70	0.05%
Littlehampton	490	0.3%
Birling Gap	1,100	0.7%
Revensey-Eastbourne	1,380	0.9%
Hastings	1,500	1.0%
Winchelsea-Pett	32	0.02%
Rye	6,106	4.1%
Weir Wood Reservoir	6,106	4.1%
Arlington Reservoir	4,500	3.0%
Bewl Bridge Reservoir	6,000	4.0%
Darwell Reservoir	1,646	1.1%
Powdermill Reservoir	1	0.001%
Barcombe Mills Reservoir	1	0.001%
TOTAL	148,607	100%
Black-headed Gull	7,820	5.3%
Common Gull	260	0.2%
Unidentified Small Gull SP	10,426	7.0%
Lesser Black-backed Gull	115	0.08%
Herring Gull	3,476	2.3%
Great Black-backed Gull	824	0.6%
Unidentified Large Gull SP	532	0.4%
Total	148,607	100%

weekend allowed 61.6% of the gulls to roost on exposed coastal waters. In strong onshore winds gulls congregate in the more sheltered sites like Chichester and Pagham Harbours, possibly the inland reservoirs or in the Adur estuary where on calm nights there is no roost. Counts on stormy evenings at this last site regularly reveal 15,000 gulls roosting and in February 1974 30,000 roosted on Shoreham airfield (Shrubb 1979). The effects of the tide are far from clear but recent observations on the coastal roost suggest that on evenings with a low tide the gulls arrive earlier and concentrate between Lancing and Ferring where there are more extensive exposed mud and sand banks. Typically, at an evening high tide the coastal roost is more evenly spread and the gulls arrive later, presumably foraging inland until dusk.

The extensive ribbon of roosting gulls from Littlehampton to Saltdean during the high tide on 22nd January demonstrated the fairly even distribution of the coastal roost in such conditions. However, most gulls were already loafing on the sea by early afternoon and most coastal observers recorded only a few gulls flying to roost later than 1530 hours, showing a reversal of the usual trend.

The count emphasised the previous findings that 'small gulls' outnumber 'large gulls'; this year over 18 'small gulls' were counted for each 'large gull' compared with a range between 4.5 and 10.3 in Porter's (1978) study. The proportion of large to small gulls was undoubtedly lower than typical counts, as many West Sussex coastal observers noted distant large clouds of 'large gulls' following fishing boats several miles offshore and too distant to count. The lowest proportion of 'large gulls' were recorded at the inland roosts, in both Pagham and Chichester Harbours and along the West Sussex coast. East of Shoreham the proportion of large gulls was greater and in most of these areas fell within the range found by Porter (1978).

After looking more closely at the species involved it is clear that the Black-headed Gull is the most numerous and forms the largest component of all the roosts. Table II shows that probably about 130,000 Black-headed Gulls roosted in Sussex in January 1983; an increase of 27% on the maximum number counted by Porter (1978). Breeding Black-headed Gulls have been increasing in Sussex in the past thirty years (Shrubb 1979) and on a national scale breeding colonies and numbers were still rising at the last census (Gribble 1976). Many of the wintering Black-headed Gulls in Sussex however, originate from the Low Countries and regions bordering the Baltic Sea (Leverton 1980; Horton *et al.*) all of which, except Denmark, are reporting a population expansion (Cramp and Simmons 1983), it is therefore likely that the wintering population of this gull in Sussex will continue to rise.

TABLE II. APPROXIMATE POPULATIONS OF THE COMMONEST SPECIES OF GULLS ROOSTING IN SUSSEX DURING JANUARY 1983

Black-headed Gull	129,000	(86.8%)
Common Gull	11,900	(8%)
Herring Gull	6,060	(4.1%)
Lesser Black-backed Gull	200	(0.1%)
Great Black-backed Gull	1,400	(4.1%)
	148,560	

Note: Figures extrapolated from Table I.

Studies of the Common Gull have also shown a marked increase in most parts of its range (Cramp and Simmons 1983). The winter count of 7,820 falls within the range counted between 1977 and 1979. However the extrapolated figure of 11,900 Common Gulls is 36.7% lower than Porter's (1978) figure. The highest concentration was found between Ferring and Angmering where 34%

of the total roost was of Common Gulls. Why this three kilometre stretch of coastline should be favoured by this species is unclear. At the other end of the spectrum Common Gulls were notably few at Chichester Harbour and roosting at the inland reservoirs with the marked exception of Arlington where past records of up to 3,000 in February 1977 show this site to be preferred by this species.

The Herring Gull is the only large gull which breeds regularly in Sussex (Shrubb 1979) and all the winter roost counts have shown it to be the most numerous of the large gulls in winter. During this census 79% of the identified large gulls were this species therefore the extrapolated winter figure was just over 6,000 in the county. The early findings of a ringing study based near Worthing suggest most of our coastal wintering Herring Gulls are of British stock unlike those found wintering in inland south-east England which originate from Arctic Norway and Russia (Stanley *et al.* 1981). As the British breeding population has doubled in the past twenty years and is continuing to rise (Cramp and Simmons 1983) it is surprising to find this winter's count 32% lower than the population estimated by Porter (1978). Certainly many of the uncounted 'large gulls' in the distant English Channel would have been Herring Gulls and their inclusion would have increased the total. However, probably of more significance is the observation that the count in January 1979, from which Porter based his maximum population, included an unprecedented total of 7,500 Herring Gulls at Worthing. Typical counts of this species there range between 300 and 1,000, which is in close agreement with the 1983 figure. In keeping with the breeding distribution in the county there were more wintering Herring Gulls recorded in the east than in the west.

There was no marked concentration recorded of Great Black-backed Gulls such as is frequently found at either Shoreham, Bulverhythe or Rye. The extrapolated figure of 1,437 Great Black-backed Gulls is remarkably similar to that found by Porter (1978).

The Lesser Black-backed Gull is the least numerous of the five regularly occurring wintering gulls in Sussex. During the last decade the largest numbers have been noted feeding on refuse tips near Horsham but departing northward to roost presumably on a Surrey or Middlesex reservoir. On the coastal plain the only regular observations come from Chichester gravel pits and Rye but winter numbers are seldom high and therefore the January count of 115 probably reflects the wintering roost population more truly than the 3,200 extrapolated by Porter (1978). In stormy conditions on 28th January 1978 1,000 Lesser Black-backed Gulls were noted at Shoreham airfield; neither before nor after has such a large number occurred at this site (Shoreham Ornithological Society Reports 1952-1982) and this record alone undoubtedly has swollen the expected figure quoted by Porter (1978). By far the largest count of Lesser Black-backed Gulls in this count was at Pevensy where 12% of the small roost there was this species.

As clearly pointed out by Porter and experienced during this count there are many variables affecting the numbers of gulls recorded at roosts. The count in late January 1983, coupled with those between 1977 and 1979, should provide an adequate baseline for the BTO's next decadal winter gull census in 1993.

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CENSUSES OF THE MUTE SWAN IN SUSSEX IN 1978 AND 1983

by S. W. M. Hughes and A. B. Watson

National censuses of the Mute Swan *Cygnus olor* were organised jointly by the British Trust for Ornithology and the Wildfowl Trust in the springs of 1978 and 1983. This paper reports the totals found in Sussex in both years and considers these in the context of the national and international trends.

METHODS

The methods adopted were essentially the same for both censuses and have been described in detail elsewhere (Ogilvie 1981). The basis of both was the 10km square of the National Grid, observers being asked to count territorial and breeding pairs in April-May and non-breeders in April only. In 1978 the Sussex census was organised by ABW with the assistance of 28 observers. In 1983 SWMH organised the county census, utilising the full resources of the recently established 10km steward scheme, and included it in a comprehensive survey of inland waters.

COVERAGE

In 1978 all 10km squares were visited. The coverage achieved was considered to be generally satisfactory but the important area of Pevensey Levels was only partially covered and coverage of some areas in the north of the county, where Swans were thought to be few, was rather superficial. These shortcomings were offset to some extent by a most thorough survey of the Rye area, organised by P. F. Bonham, and including the very important and difficult area of Guldeford Levels to the east of Rye.

In 1983 the participation of 149 observers ensured the best ever coverage of all the main sites with the exception of Guldeford Levels. Combining the census with the inland water survey also resulted in excellent coverage of the smaller waters in the Weald, 544 sites being visited. Swans were reported for the first time from several small waters not visited in 1978, including a few not shown on the Ordnance Survey maps and the existence of which was previously unknown to the county organisers.

RESULTS

Numbers

The numbers of birds reported for each 10km square in both years are given in Table I. Each total is sub-divided into pairs with nests, other territorial pairs and non-breeding birds.

The overall totals were 665 in 1978 and 848 in 1983. The considerable difference between these is certainly due in part to the thoroughness with which most of the main sites were searched in 1983 and the exceptional coverage in that year of the smaller inland waters. Wildfowl counts in March 1978, and personal communications, suggested that a flock of c.20 non-breeders was overlooked in the Arun Valley and that complete coverage of Pevensey Levels would probably have added another 80 birds; similarly in 1983 full coverage of Guldeford Levels might have found another 40.

Even taking account of these important omissions, the best estimates of the population in 1978 and 1983, of c.770 and c.890 respectively, give a picture of a rapidly expanding population which is probably misleading. This possibility has been examined in the Arun Valley, where coverage was very good in both years. The totals for birds found between Stopham Bridge and Littlehampton (204 in 1978 and 206 in 1983) are surprisingly similar. Furthermore it might be expected that any recent increase in numbers would have been reflected in an increase in non-breeding birds, which in the Arun Valley form c.76% of the total population. Again this proved not to be so, there being 152 non-breeders in

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1978 and 160 in 1983. Elsewhere, excluding those areas where substantial omissions occurred in one or other year, increases were recorded in 25 squares, decreases in 11 and no change in 12. Overall these changes gave a net gain of approximately 100 birds, the significance of which is impossible to assess accurately in the absence of details of negative sites in 1978. However there is good reason to believe that the increased totals were probably due to better coverage in some squares, whilst in others there may have been a genuine increase in the population between the two censuses; possibly both factors are operating in some squares.

TABLE I. MUTE SWAN NUMBERS IN SUSSEX, APRIL AND MAY 1978 AND 1983

10km Square	1978				1983			
	Nests	Other territory pairs	Non breeders	Total birds	Nests	Other territory pairs	Non breeders	Total birds
SU72	0	1	0	2	2	0	1	5
SU76	2	0	15	19	6	2	6	22
SU82	0	0	3	3	0	0	2	2
SU80	5	0	8	18	8	6	18	46
SZ89	6	0	16	28	5	0	6	16
SU93	0	0	0	0	0	0	1	1
SU92	0	0	0	0	1	1	2	6
SU91	2	0	0	4	4	1	0	10
SU90	0	2	0	4	2	0	0	4
SZ99	1	0	0	2	0	0	0	0
TQ03	0	0	0	0	0	1	1	3
TQ02	0	0	0	0	1	0	1	3
TQ01	11	6	72	106	10	9	148	186
TQ00	8	2	80	100	4	0	12	20
TQ13	0	1	0	2	1	0	1	3
TQ12	1	1	4	4	1	2	4	4
TQ11	2	1	14	20	4	2	43	55
TQ10	1	2	0	6	1	0	14	16
TQ23	2	0	6	10	1	0	2	4
TQ22	1	0	0	2	2	1	2	8
TQ21	1	0	0	2	1	2	0	6
TQ20	2	1	4	10	1	0	2	4
TQ33	3	0	2	8	4	2	4	16
TQ32	0	0	0	0	2	0	2	6
TQ43	0	0	0	0	1	0	0	2
TQ42	4	0	1	9	1	0	9	15
TQ41	4	2	20	32	10	6	10	42
TQ40	5	3	42	58	12	2	48	76
TQ53	0	0	0	0	1	0	3	5
TQ52	0	0	1	1	3	1	5	13
TQ51	1	1	1	4	0	0	1	6
TQ50	1	2	5	11	5	0	16	26
TV39	1	0	5	7	0	0	0	0
TQ63	0	0	0	0	1	0	3	5
TQ62	1	1	2	6	1	0	1	3
TQ61	0	0	7	7	0	0	0	0
TQ60	3	4	0	14	15	9	61	109
TQ72	3	0	4	10	1	1	0	4
TQ71	0	1	4	6	1	1	1	3
TQ82	2	1	13	19	6	1	19	33
TQ81	9	4	18	44	7	1	14	30
TQ92	10	3	40	66	2	0	0	4
TQ91	7	4	2	24	5	1	19	31
TR01	1	0	0	2	0	0	0	0
Totals	98	42	385	665	133	52	478	848

No Swans were reported in either year from SU71, SZ79, SU83, SU81, TQ24, TQ30, TQ31, TV49, TV69, TQ70, TQ80.

Taking no account of coverage variations, the percentage of non-breeders in the county as a whole in both years was very similar, being 56% in 1978 and 52% in 1983. In 1978 a few counts of non-breeding flocks were not made until nearly mid-May and it is possible that the figures are influenced by the early return of a few 'failed' territorial pairs.

Habitat

Details of the habitats in which swans were found in both censuses are given in Table II. In 1983 almost 60% were found on the coastal levels and the levels in the major river valleys. This habitat was by far the most important for the non-breeders (c. 70%) but also the most important in terms of territorial pairs (c. 42%), many of which attempted to nest in the numerous ditches and drainage channels in these areas.

As might be expected ponds and lakes also comprised an important habitat, being relatively more important for territorial pairs (c. 32%) than non-breeders (c. 14%). Although swans were found in a variety of other wetland habitats none held more than 6% of the total population. The analysis for 1978 showed very similar results, except that the percentage found on the levels was relatively higher compared with ponds and lakes due to less coverage of the latter inland.

TABLE II. MUTE SWAN HABITATS IN SUSSEX, APRIL AND MAY 1978 AND 1983

Habitat	% of nesting and territorial birds		% of non breeders		% of total population	
	1978	1983	1978	1983	1978	1983
Levels and ditches (river valley and coastal)	48.9	41.6	77.3	70.3	64.8	57.8
Ponds and lakes	28.5	31.9	5.2	13.6	15.0	21.6
Estuary and coast	5.6	7.6	8.3	5.0	7.2	6.1
River (non tidal) and streams	4.3	5.9	3.1	6.1	3.6	6.0
River (tidal reaches)	5.2	4.9	3.2	2.1	4.5	3.3
Gravel pits	2.7	4.9	1.6	1.1	2.1	2.7
Reservoirs	2.1	1.6	1.0	1.2	1.5	1.4
Canals	2.7	1.6	0.3	0.6	1.3	1.1

Breeding Pairs

In 1978, 98 pairs were known to have nested, whilst the comparable figure in 1983 was 133. These figures represent 70% and 72% of the total territorial pairs respectively. However it should be noted that in 1983 only 67% of the pairs holding territory on the levels actually nested, compared with 83% of pairs on lakes and ponds. Thus although a higher percentage of territorial pairs are found on the levels it is the birds on the ponds and lakes, together with the smaller numbers in a variety of other habitats, which maintain the numbers of the species. Details of breeding success were not a prime requirement of the census but much useful data were collected and these will be reported at a later date.

DISCUSSION

The 1978 census was performed throughout much of Europe following reports of dramatic increases in several national populations, particularly those around the Baltic, and marked local declines in parts of Britain. The national results, compared with the 1955 national census (Campbell 1960), confirmed a drop in numbers of between 8-15% (Ogilvie 1981). Locally there was evidence that some areas, formerly used for breeding, or by flocks, had been abandoned as habitat had been rendered less suitable, whilst in other areas numbers had either been maintained or had actually increased.

In Sussex interpretation of the 1978 results proved difficult. The results of the 1955 census, organised by G. N. Slyfield and added to by D. D. Harber, gave a total of 93 breeding pairs but des Forges and Harber (1963) considered this to be low due to incomplete coverage. Similarly non-breeding birds totalled 211, but Ogilvie (1981) has since suggested that up to 200 may have been missed. If true, the corrected figures suggest that the 1955 population must have totalled 600+ birds. An added complication is that the published figures for the 1978 census in Sussex differ from ours and suggest that Ogilvie received some counts which were not available to us or, more likely, used a notional Sussex based on 10km squares. Nevertheless our estimate of c.770 is fairly close to his 755 (113 breeding pairs plus 529 non-breeders). Although the data were somewhat imprecise it was clear that none of the important areas in Sussex had suffered a drastic decline such as had been reported elsewhere in Britain (Hardman and Cooper 1980). Possible causative factors for these local decreases elsewhere in the country were identified as drainage works to rivers, increased boating and fishing, coupled with mortality factors such as overhead wires and lead poisoning. The importance of the latter was confirmed by Goode in 1981 and resulted in the NCC requesting another national census in 1983.

The national results for the 1983 census have not yet been published but, as far as Sussex is concerned, the interpretation of the results has again been made difficult by differences in coverage in the two census years. Nevertheless the considerably increased numbers reported in 1983 (whether actual or estimated), together with the steadily increasing number of known breeding pairs — 1955—93 (Campbell 1960); 1978—98 or 113 (Ogilvie 1981); 1983—133 — strongly indicate that the overall population is holding its own; indeed there is reason to suspect that it has increased. This is not to deny that some local decreases may also have occurred as was suspected between 1955 and 1978. The validity and possible reasons for both increases and decreases require further investigation.

Finally, while it would be gratifying to think that the 1983 data could provide a reliable base line for the future, greater observer participation might have found still more breeding pairs on secluded waters. However obtaining total coverage for this species, in any one year, is probably impossible in Sussex with existing manpower resources, coupled with the inevitable disappointments that occur for a variety of reasons.

SUMMARY

Censuses of the Mute Swan were made in the springs of 1978 and 1983. These found totals of 665 in 1978 and 848 in 1983. Allowing for known omissions the total populations were estimated at c.770 in 1978 and c.890 in 1983, with the difference being explained in part by the variation in habitat coverage in the two census years. In 1983 185 pairs (44% of the population) took up breeding territories but only 133 pairs nested. Most of the non-breeding population was found on the levels in the river valleys and at the coast. This habitat also supported many of the territorial pairs but few nested; lakes and ponds in the interior provided the main nesting habitat. The variation in coverage precluded definite calculations of population trends but it was concluded that there had certainly been no drastic decline such as has been reported in other parts of Britain, and that there might have been an increase.

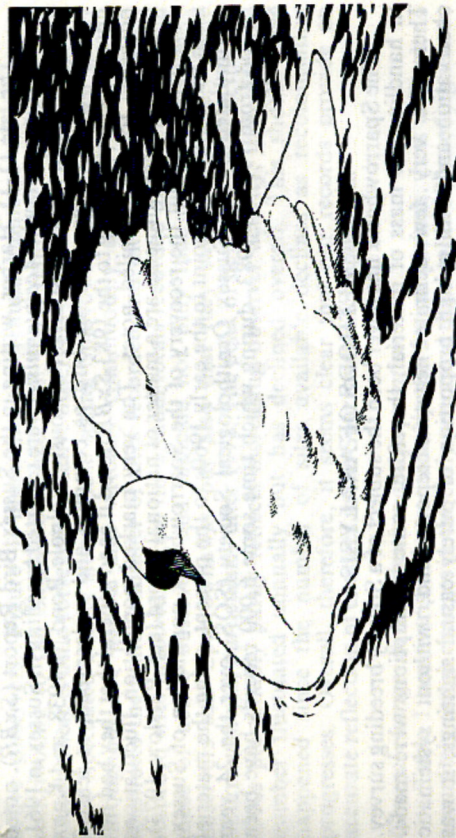
ACKNOWLEDGEMENTS

We wish to thank all observers who participated in either 1978 or 1983 and particularly the 10km stewards who mobilised 149 members in 1983. We are also pleased to acknowledge the assistance of Miss P. A. Kirkpatrick and other members of the Haslemere Natural History Society for invaluable assistance in the extreme north-west of the County and F. J. R. Parry for the help of the

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THE SPARROWHAWK IN SUSSEX 1960-1983

by M. Shrubbs

The late D. D. Harber, writing in the Sussex Bird Report (SxBR), noted that no Sparrowhawks *Accipiter nisus* were reported breeding in Sussex in 1961, an extraordinary state of affairs. Previously Walpole-Bond, in 1938, and Knox (1849) had both recorded the bird as common and widespread; at least 2 observers contributing to the 1983 SxBR noted it as so general that they had not bothered to send detailed notes. The very marked population fluctuations implicit in these comments are a matter of national record (e.g. Parslow, 1973). This paper sets out the recovery of the Sparrowhawk population of Sussex, from its historic low point in the early 1960s to the present, using the material accumulated by the Sussex Ornithological Society (SOS) over the 24 year period from 1960 to 1983, during which time some 6,000 records have been submitted.

METHODS OF ANALYSIS

The Sparrowhawk has never been the subject of a Society breeding survey. In handling the mass of material, therefore, some assumptions were made. There are very few definite negative reports and, without systematic observation and with a high proportion of purely casual sightings, it was assumed that a record of a bird present represented an occupied site. Secondly, for both breeding season and winter, separating such sites was frequently a subjective assessment of the analyst. This was often bedevilled by a lack of exactly recorded localities; wherever reasonable, therefore, I assumed that such records referred to established sites if more accurate placing was lacking. Thirdly some records of birds present may refer to unusually wide-ranging hunting from established sites rather than to fresh sites. Unless clearly indicated by subsequent records I have ignored this. This caveat also covers the possibility that birds looking for a mate may appear in more than one locality in a season.

For analysis the records were grouped in 5 periods — 1960-64, 1965-69, 1970-74, 1975-79 and 1980-83 — as, particularly in the early years, too few records were available for each year to give a fair picture. Separate analyses were made of the breeding season (March to August inclusive) and the September to February period, referred to as 'winter' for simplicity. Breeding season records were placed in the 3 categories of 'breeding proved', 'breeding probable' and 'birds present'. 'Breeding probable' was based either on the observer's own assessment or the presence of a pair together with some other indication of breeding. In many cases it was impossible to know if a pair was involved in the sightings of birds present and the analysis of known breeding indicates that it is a very unsafe assumption to make. An occupied site, rather than territory which implies breeding, is therefore used as the basic unit of population.

In compiling the results the highest category available in each 5 year period has been used for each site. Records for 2 periods have also been plotted on the 1 inch O.S. maps to estimate densities and an analysis of observer patterns has also been made. For the latter, one important point must be noted. The SOS was formed in early 1962 and this period marked an important shift in the emphasis of ornithological recording in Sussex, from a dominance of migration study to the study and recording of resident and breeding populations. Usually, therefore, I have taken 1965, not 1960, as a base line as the changes in the patterns of recording were probably not fully established until the second half of the 1960s.

RESULTS

Patterns of observation

Lacking any detailed study it is important to establish how far changes recorded in the numbers of Sparrowhawks relate to changes in the number of active observers. Figure 1 illustrates the annual numbers of observers contributing to the SxBR compared with those reporting Sparrowhawks. Clearly there is little correlation. Active observers peaked in 1970 and numbers have fluctuated widely since; those seeing Sparrowhawks have risen gently throughout the period and virtually continuously since 1970. Figure 2 illustrates the annual number of sites recorded and the percentage of newly recorded sites involved. Again the annual totals recorded differ sharply from those of active observers and indicate not only that progressively more observers saw Sparrowhawks but also that they saw progressively more Sparrowhawks, particularly after 1977. The peak of new sites noted in the late 1960s presumably partly reflects increasing observer activity; thereafter the number fluctuated annually but has declined overall. This should have happened since the number of sites available declines as recolonisation progresses. Overall, therefore, it seems clear that our records provide an accurate reflection of changes in the Sparrowhawk population.

General changes in distribution and population

Table 1 summarises the records by the 5 year periods. It is difficult to accurately assess changes in the early years and the total of 38 breeding season sites for 1960-64 may under-record the true position, as the county files reveal that the only Sparrowhawk records retained for the years 1947-1961 inclusive refer to migration, although breeding records may have been submitted. However the sharp decline in breeding season sites recorded as occupied in one year only after 1964 clearly indicates some genuine recovery. The records then suggest a plateau in the breeding population from about 1967 to 1974, followed by a second and very sharp recovery. Figure 2 shows this pattern very clearly and it is further supported by detailed records kept at West Chilmington by F. W. Dougharty and Sinfold by S. W. M. Hughes, which are illustrated in Figure 3.

Dougharty's and Hughes' records show strong fluctuations and Table 1

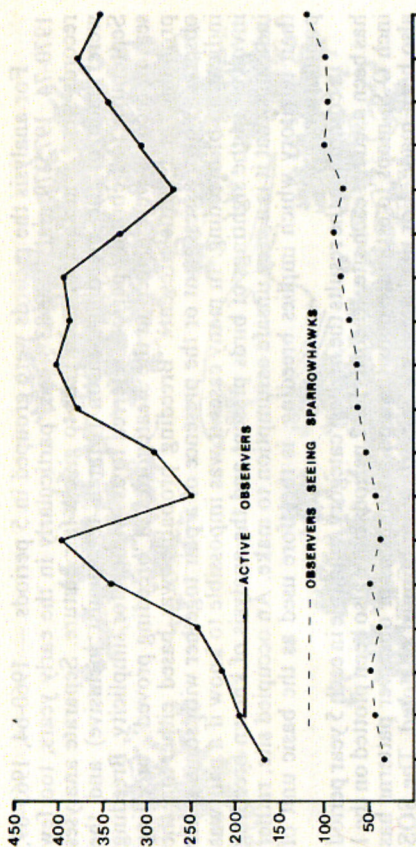


Figure 1. Observers contributing to SxBR annually 1965-1982, compared to those reporting Sparrowhawks.

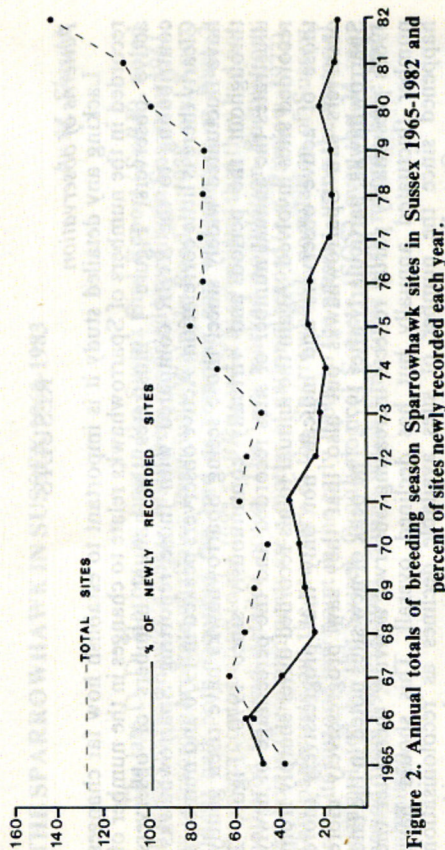


Figure 2. Annual totals of breeding season Sparrowhawk sites in Sussex 1965-1982 and percent of sites newly recorded each year.

TABLE 1. SPARROWHAWKS IN SUSSEX FROM 1960 TO 1983

Years inclusive	Sites occupied in breeding season			Winter sites		Total Sites
	Sites proved	Sites bred	% occupied	Total	% (no.) occupied	
1960-64	8	12	8	15	60 (9)	43
1965-69	13	16	73	74	59 (44)	132
1970-74	10	13	71	92	49 (45)	141
1975-79	27	30	100	127	66 (84)	200
1980-83	34	38	106	132	66 (87)	223

*Note these percentages are estimates based on 4 years' records. Total sites includes all sites occupied in the breeding season and/or winter.

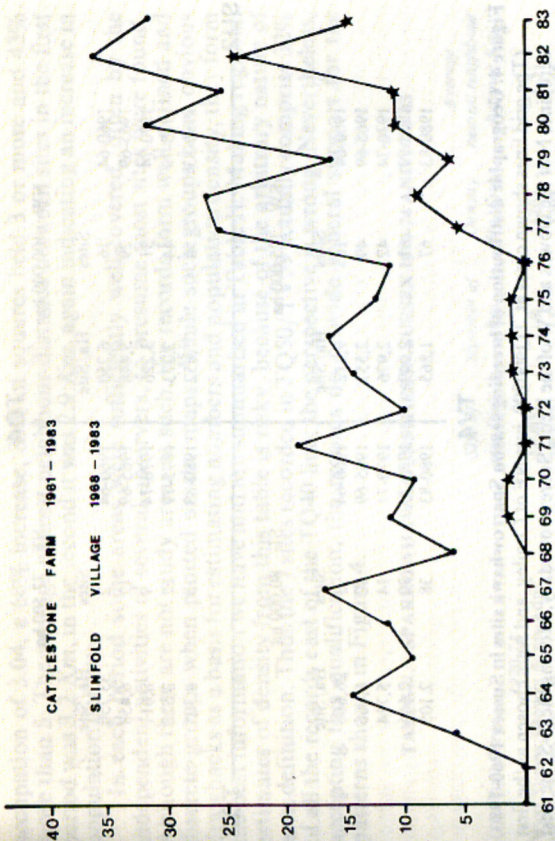


Figure 3. Annual totals of Sparrowhawks recorded in 2 localities in West Sussex 1962-1983.

illustrates that a remarkably high percentage of breeding season sites were occupied only once in each 5 year period, whilst sites histories show a frequent pattern of occupation, absence and reoccupation, often linked by winter records. No doubt this pattern derives partly from the arbitrary division into 5 year periods but the consistent, if gentle, decline in this percentage, which might be expected as the population recovers, argues that it is genuine. Sites occupied for 3 or more years in 5 have also fluctuated strongly, again arguing a high percentage of instability, but have shown a sharp increase since 1979, agreeing well with the general pattern of records. Such erratic site occupation by Sparrowhawks was noted widely in Britain by Newton & Haas (1984).

About 27% of breeding season sites and 60% of proved breeding in the 1960s were located in the county's major forests, both in areas such as the Charlton, Worth or St. Leonards Forest complexes or in more self-contained forests like Friston or Eartham Wood. By the 1980s, although the number of forest sites had risen by 20%, they formed only 17% of the total and 38% of proved breeding; perhaps therefore forests provided reservoirs for the population. Sparrowhawks have also been moving steadily into urban/suburban areas, being recorded in 7 such sites in 1970-74 and 19 in 1980-83. They are most frequent there in winter, probably attracted by the increasing concentration of prey species at bird tables, but some attempt breeding.

There are also important variations in regional status and distribution, which are illustrated in Figure 4. This shows that Sparrowhawks are more numerous and have recovered more quickly in the west of the county than in the east and have been more numerous in the southern half of the county than the northern throughout the period. The latter point is particularly interesting, as it is contrary to the general distribution of good Sparrowhawk country in the county, the area south SU/TQ2 embracing the bulk of Sussex's major open habitats and arable farmland. It is often supposed that such patterns reflect the distribution of observers but I doubt it, as it is contrary to the patterns shown by Figures 1 and 2. Furthermore Sparrowhawks are much scarcer everywhere in Kent than in Sussex (see Taylor *et al.* 1981) and there are similarities in the

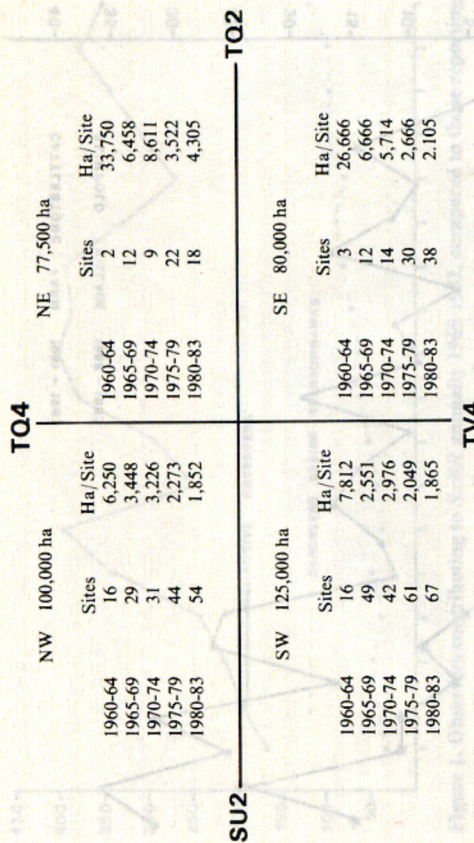


Figure 4. Geographic distribution of breeding season Sparrowhawk sites in Sussex 1960-1983. (The grid lines shown cross at TQ400200, just NE of Chailey, and were chosen as the first zero lines N of the Downs and W of the Kent/Surrey boundary. Moving the N-S line west to TQ3 makes a more uniform division of the county but no difference to the pattern shown).

breeding performance recorded for Kent and the eastern part of Sussex. I suggest, therefore, that Figure 4 illustrates a perfectly valid distribution pattern. Sparrowhawks were recorded each winter from areas for which there were no breeding season records. Examination of the records shows a general correlation between the number of winter records and proven breeding pairs, so this pattern seems indicative of a probing process in dispersal and recolonisation. But Newton (1979) notes that females tend to hunt more open habitats than males; I believe they also range more widely. Females, of course, do little hunting for a long period when nesting but analysis of 531 records, for which sex was recorded outside the breeding season, showed 39% males and 61% females. Thus this shift in distribution in winter may also partly stem from a change in conspicuousness combined with an expansion in hunting ranges.

There is also a small but consistent tendency for more birds to be present on the coast and Downs outside the breeding season. While this partly reflects the factor noted above, some movement or dispersal is probably involved. A few migrant Sparrowhawks are recorded at the coast annually and there is one recent recovery, at Horsham, of a bird ringed in the Netherlands. In general, however, ringing recoveries show the species to be rather sedentary and recent recoveries of Sussex ringed birds have shown average movements of only 17 Km. Most probably therefore these movements represent dispersal of more local populations.

The density of the breeding population

The breeding season records for 1970-74 and 1980-83 were plotted out on the one inch OS maps and analysed on a 10 Km square basis. While an admittedly crude way of examining density, the analysis gives a clearer impression of the scale of change. In the first period only 75% of squares held occupied sites and only 35% held 3 or more; average occupation was 1.9 sites/square. In the 1980s 96% of squares held occupied sites, with an average

occupation of 3.04, a 60% increase; 89% of squares held 3 or more and 43% more than 5. The average nearest neighbour distance between sites in the first period was 3.2 Km, in the second it was 2.9 Km, again indicating an increase in population density.

In each period some areas were sufficiently well-covered, often by the independent activities of several observers, to presume most sites were found. Although these are not study areas as such, the records form well-defined and discrete groups when plotted on the maps. While such groups have obvious drawbacks as a basis for estimating numbers and population density, they form the best information we have and are summarised in Table II. Making regional estimates of density from this table is risky, because of the arbitrary nature of area definition. Thus the 7 sites recorded in TQ50/TV59 actually comprise 32% of all the records east of the TQ40 line; the perspective is wrong. Nevertheless, accepting this qualification, the records do provide general support for the patterns shown in Figure 4.

TABLE II. SPARROWHAWK DENSITIES IN SUSSEX 1970-74 AND 1980-83

Locality of area	1970-74	1980-83		
	Size of area (ha)	Number of sites	Density Ha/Sites	Average nearest neighbour distance Km
West Sussex: Downs Arun-Adur	11,400	9	1267	1.31
Weald TQ22/23	18,137	13	1395	1.46
Downs/Weald TQ50/TV59	8,291	7	1184	1.6
OVERALL	37,828	29	1304	1.44
West Sussex: Downs SU71	3,886	6	647	1.1
Weald NW Sussex	14,510	16	907	1.3
West Sussex: Downs Arun-Adur	11,400	15	760	1.42
Weald TQ01/11	7,514	11	683	1.4
Worth Forest complex	3,757	6	626	1.26
Ashdown Forest & area	6,218	7	888	1.58
Weald TQ51/52	7,773	8	972	1.35
Downs Newhaven-Eastbourne	8,809	11	801	1.36
OVERALL	63,867	80	798	1.33

The comparatively high densities on the Downs are of interest. K. G. Ridgwell, in Shrub (1979), recorded a total of 17 regularly occupied sites on c.26,000 ha of downland west of the Cuckmere between 1929 and 1939. Our figures suggest that a comparable area today might hold up to 33 sites. Such an increase reflects one important change in land-use, the disappearance of sheep. This has allowed the development of a succession of scrub and then woodland in areas where the plough cannot reach which, coupled with tree planting has provided more nesting sites and a considerable increase in prey species.

The overall densities shown in Table II allow some estimate of the total breeding population. That for 1970-74 implies a total of c.300 occupied sites but, since distribution was incomplete, there were probably less. In 1980-83 the overall densities suggest a total of c.470 occupied sites; distribution was wider and, with a better spread of established densities available, this may be reasonable. These figures must be qualified however. Only a proportion of sites were occupied regularly (Table I) and there is no evidence that all held breeding pairs (Table III below). Using the figures we have gives a minimum of c.50 regularly occupied sites and c.39 breeding pairs in 1970-74 and 165 regular sites and 130 actually breeding pairs in 1980-83. The true position undoubtedly lies between these extremes.

There were also differences between densities calculated by area/sites and by nearest neighbour distances. The latter show little variation throughout Table II and imply theoretical populations of 550-600 sites. Partly the

difference between the two ways of calculating densities reflects gaps in distribution caused by tracts of unsuitable terrain. But it also gives a clear indication of the scale of vacancies available for further recolonisation. Some must be expected and perhaps c.570 sites is a reasonable population to expect in Sussex.

Breeding success

We are fortunate in holding a useful volume of breeding data, summarised in Table III, which show some interesting points. There is no really clear trend in the breeding success of the species, which has fluctuated between c.2 and 2.5 young per pair throughout the period. This calculation is based on all pairs for which a definite result, even if not a precise figure for young raised, was known. Newton (1974) points out that such calculations overestimate breeding success, since they tend to exclude nests or pairs which do not reach the laying or incubation period. Thus I think it important to distinguish between the species' breeding success, which can be considered only comparatively by such methods, and the population's breeding performance. This has improved consistently, as the table shows, with a slowly increasing percentage of breeding season records involving actual breeding and this element of the population raising more large broods (3 or more young). Thus more young are recruited to the population by an expansion of breeding pairs rather than by increasing breeding success. This has been particularly important in Sussex east of TQ40 where there was only one proved breeding record between 1960 and 1975 (c.f. Kent below) and the percentage of breeding to occupied sites remains significantly lower than in West Sussex. This improvement in breeding performance appears to be accelerating, a point underlined by the greatly increased frequency with which casual observation is detecting fledged broods calling when first out of the nest; such records were very unusual in the Society files before 1976.

TABLE III. THE BREEDING PERFORMANCE OF SPARROWHAWKS IN SUSSEX 1962-1983

Period	Breeding success		% population breeding		Large broods	
	Proved breeding records	Average brood size	Occupied breeding season sites	Proved breeding as a % sites	No. of broods of 3 young or more	Total young reared
1960-64	8	2+	38	21	3	9
1965-69	13	2	102	11	2	8
1970-74	12	2.5+	94	13	6	22
1975-79	31	2.2+	157	21	12	44
1980-83	38	2.3+	178	28	17	60

NOTES: The number of proven breeding records for 1960-64 appears unnaturally high in the light of all later reports and the figures should be treated with caution. In 1975-79 and 1980-83 there were some confirmed breeding records for which no result was recorded.

We have only 6 accurate records of clutch size, which average 4.5 eggs, and show no hint of variation. This average clutch size agrees fairly well with that given by Newton (1974) for 1956-70 in Britain. Thus Sussex conforms to the national pattern of fewer young being reared from eggs laid.

DISCUSSION

Very little is now known about the timing of the decline of Sparrowhawks in Sussex in the 1950s but K. G. Ridgwell, already quoted, had detected a significant decline on the Downs by 1953. The recovery since the early 1960s, however, does not seem to quite follow the national picture outlined by Newton & Haas (1984) as, if my estimates of population are reasonably accurate, it seems very unlikely that the species has yet reached 50% of its pre-1947 level in terms of regular breeding pairs.

In Sussex the recovery has had 2 clearly distinct phases, a rapid rebound

from the very low levels of the early 1960s, followed by a period of fluctuation or consolidation, then further very rapid growth since the mid-1970s. Although the pattern for the early years is based on rather limited information when recording patterns were changing in Sussex, the recovery indicated then agrees well with the findings of experienced observers interested in the species and I see no reason to reject it.

Newton & Haas have shown convincingly that the national decline of the species was connected with the use of organo-chlorine pesticides in agriculture, particularly the cyclodienes, mainly dieldrin. The cyclodienes were used as seed-dressings against soil-borne pests, mainly in cereals and especially for wheat bulb fly, a pest specific to wheat, and sugar-beet; dieldrin was also used as a sheep-dip. Their use has been progressively restricted since 1962. Sussex is not, and never was, a wheat bulb fly area and its arable agriculture in the early 1960s was dominated by spring barley (c.50% of tilled land); sugar-beet and brassicas had largely ceased to be of any significance by 1963 but there were 17,450 *ha* of wheat (23% of tillage), the majority in West Sussex (source, MAFF June Census Statistics). The restrictions most likely to have been important were the voluntary ban on the use of cyclodiene seed-dressings on spring sown cereals from 1962 and the ban on dieldrin sheep-dips after 1 Jan. 1966 (there were c.266,000 sheep in the county). The sharp recovery in Sparrowhawks in Sussex in the mid-1960s thus agrees well with Newton & Haas' argument of a recovery based on improved adult survival following the withdrawal of cyclodienes, and with the timing they suggest.

But this does not appear to be the whole story. The regional distribution of recovery in Sussex shown in Figure 4 is, in terms of likely cyclodiene usage, anomalous. The faster recovery in the south of the county is contrary to the general distribution of tilled land and the faster recovery in the west is contrary to the general distribution of wheat. Newton & Haas stress the extremely wide dispersal of organo-chlorines in the environment but seed-dressings are not subject to drift and, as the general pattern of national recovery confirms, the highest contamination and greatest impact occurs nearest the point of use (their wave effect). Such detailed local anomalies would not emerge from the broad sweep of a national survey but examination of the maps for 1970 in Coppock (1976) shows quite clearly that there was no variation in the arable agriculture of Sussex to account for so marked a gradation in Sparrowhawk recovery across the county, a point which applies in fact to the whole area of Surrey, Sussex and Kent which Coppock notes comprises an important exception to the general distribution of tilled land in eastern England. Secondly the rapid recovery since the mid-1970s is strikingly associated with a steady recovery in breeding performance and I have no doubt is fuelled by it, although the species' breeding success remains well below that prior to 1947, as elsewhere in Britain (Newton 1974, Cramp & Simmons 1979).

In Kent no Sparrowhawks were recorded as actually nesting between 1953 and 1975, which agrees well with what we know of the dating of the decline in Sussex. The probability that the decline, like the recovery, in fact occurred in 2 major phases, and the cause, needs further examination. Here I can only say that further recovery in Sussex Sparrowhawks depends on improvement in the stability of site occupation and in breeding performance. The impression of abundance given by numerous sightings is deceptive and I would particularly urge observers not to treat this bird as too common to be worth bothering to record. It is because this attitude was taken in the 1950s that we now know so little about what actually happened. In the future such ignorance could be damaging.

SUMMARY

Changes in the fortunes of Sparrowhawks in Sussex are discussed. From a low point of no recorded breeding in 1961 the species has recovered to an

WINTERING HEN HARRIERS ON THE SELSEY PENINSULAR

by R. M. Lord and C. R. Janman

Brown (1976) describes the Hen Harrier (*Circus cyaneus*) as unique among British birds of prey in several ways. In particular it was the only species which had, during the ten years up to 1972, actively and aggressively increased its breeding range and numbers, when the majority of species were subject to declines due to organochlorine pesticides. The continuing increase of Hen Harriers in Britain is reflected in wintering areas outside the breeding range, especially in Southern England, for example along the coastal strip in Sussex. Here the Hen Harrier is a regular passage migrant and winter visitor and is, in most winters the third most numerous diurnal bird of prey after the Kestrel (*Falco tinnunculus*) and Sparrowhawk (*Accipiter nisus*). This paper looks at the numbers of Hen Harriers using a small, but important, area of Sussex coastline, the Selsey Peninsular, particularly in the last decade, considering roosting and hunting behaviour and food preferences.

RESULTS

Status

The Hen Harrier is a relatively large raptor preferring open ground, making it fairly easy to watch. Its characteristic method of flight and frequency of occurrence has meant that, since detailed records began in the county, observations are numerous. During the period 1947-1961 an annual average of 10 birds was recorded, which doubled to 20 during the period 1966-1976 (Shrubbs 1979). Since then the annual average has again doubled or more, and during the 6 years 1977-1982 rose to 45, mainly due to unprecedented numbers in early 1979 and in the winter of 1981/82 when the county experienced sub-zero temperatures and heavy snowfalls for some weeks. The annual totals for the county and the numbers of birds recorded on the peninsular are shown in Table I.

The number of birds using the Selsey Peninsular more or less reflects the pattern in Sussex, including the influxes, and the area is an important site with up to 18% of the total winter population of the county. The figures relate to the October to March period, thus referring to wintering rather than passage birds.

TABLE I. HEN HARRIERS RECORDED IN SUSSEX FROM 1977-1982 WITH THE NUMBER AND % TOTAL OF BIRDS ON THE SELSEY PENINSULAR

Year	1977	1978	1979	1980	1981	1982
County Totals	21	28	72	38	58	53
Selsey Peninsular	2	5	13	2	5	8
(% Total)	(9)	(18)	(18)	(5)	(9)	(15)

Roosting

The first recorded winter roost on the south coast was in 1953 at Walland Marsh in Kent (Walker 1953), where 5 birds were present in November and December roosting in marsh grass growing in 6in. to 9in. (15-23cm) of water. This roost was used until 1955 and then reoccupied in 1978 during a major influx of the species into SE England; since 1977 two other sites in Kent, Sheppey and Stodmarsh, have held roosts comparable in size to those at Walland Marsh in 1953-1955 (Taylor *et al.* 1981).

Similarly in Sussex, although no roosts were recorded until 1977, from then up to 1982, 7 definite roost sites (and possibly up to 13 including those suspected from known concentrations of birds) have been noted (Sussex Bird

estimated 500 occupied sites in 1980-83; of these only perhaps 165 were regularly occupied and the actual nesting population may well have been as few as 130 pairs. The recovery appears to have occurred in 2 distinct phases, separated by nearly 10 years, in the mid-1960s and from the mid-1970s. Breeding success has varied little over the period, at 2-2.5 young reared per pair that bred, but breeding performance in the population has improved slowly, with progressively more pairs actually nesting and more of these rearing broods of 3 young or more. The reasons for the population changes are discussed.

ACKNOWLEDGEMENTS

I am grateful to the very large number of observers who have contributed records of Sparrowhawks to the county files over the past 24 years. I regret that space really does preclude my listing the 400-500 names in full but wish to stress how important their patient recording of the bird has been; without records the analyst can do nothing. I hope this paper demonstrates the value of such straightforward bird-watching and recording. I must also thank R. Leverton for extracting the ringing records for the county for me and A. Henderson and the Kent Ornithological Society for access to their records. A. J. Prater and S. W. M. Hughes made valuable comments on the draft and S. P. Hitchings drew the figures.

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Report). Communal roosting was first observed on the Selsey Peninsula during the winter of 1978/79 and since then other roosts have been watched in 1980/81, 1981/82 and 1982/83. Three sites held more than one bird, and it is thought that a fourth, subsidiary, roost developed during the January 1979 influx (M. Shrubbs pers. comm.).

Description of Roosts

Compared with the three roosts described by Watson (1977) in south-west Scotland, covering areas of between 1.5 and 23 ha, those on the peninsula were tiny; almost all the available land is farmed intensively and perhaps it is surprising that roosts have developed at all. Roost A was in farmland with mature hedges between Pagharn Harbour and Earnley. The area was approximately 0.5 ha of overgrown reedbed, mostly Common Reed (*Phragmites australis*) to a height of 2m bordered on three sides by a tributary of the Broad Rife some 3m in width. Only the northern edge of the roost was not bordered by water. Meadows bordered the rife along the western edge of the roost, whilst winter cereal was planted in the large field to the east. The southern boundary was a thick Hawthorn (*Crataegus monogyna*) hedge on a raised bank. The surface of the roost comprised decaying reeds, in places formed into raised hummocks, mostly wet with interspersed drier patches. Situated over half a mile from the nearest road and farmhouse, the roost enjoyed a relative freedom from human disturbance.

About one mile south, Roost B lay in similar farmland and was bordered around most of its perimeter by Broad Rife, only the southern edge being accessible by land. The roosting area consisted of 1.0 ha of well overgrown, rough vegetation and scrub, with a few scattered, stunted Hawthorn bushes growing on the steep banks of the rife. Fields of winter cereal bordered the northern and western edges of the roost, an area of scrub lay to the east, whilst the southern boundary merged into short grass. Common Reed grew thickly in places along the rife.

Roost C was roughly oblong in shape, well defined and less than 1.0 ha in size. It was virtually encircled by grass and scrub covered banks, with one open side of rough grass, mostly Cocksfoot (*Dactylis glomerata*) and Sea Couch (*Agropyron pungens*), the edge of arable ground. The actual roost was once saltmarsh and was predominantly Cord Grass (*Spartina anglica*), Sea Aster (*Aster tripolium*) and Sea Couch at a more or less uniform height of 0.75m, with Sea Purslane (*Halimione portulacoides*) and Great Hairy Willowherb (*Epilobium hirsutum*) in abundance and Sea Blight (*Sueda maritima*) also present. Prior to the repair of a sluice in early 1981, it flooded at each spring tide to a depth of 0.5m. Since then only heavy rain has caused any standing water. In June 1982 the area was exceptionally dry and by the summer of 1983 willowherb and couch had invaded almost all the area, the Cord Grass more or less disappeared but some Sea Purslane remained.

While this roost was occupied in 1981/82 there was hard frost. The roost however remained relatively soft, and quite wet in parts, with snow lying between the taller vegetation. Individual birds had made roosting forms of trampled Cord Grass. The average size of these was 0.3 x 0.2m, roughly elliptical and room enough for one bird; many contained compact snow. It appeared that once settled, birds moved little judging by the amount and placing of droppings and pellets, always at opposite sides of the form, each bird choosing to face a different direction. There were 18 forms counted in the roost and many of these were connected by narrow, trodden paths ('runs') through the vegetation. These may have been used as easy escape routes, rather than flying, to another unoccupied form if a dominant bird dislodged a subordinate.

On 23rd February 1982 a rough grassland area used for horse grazing with much shorter vegetation of 0.2-0.3m height approximately 250m from Roost C, was used by a single ringtail.

Access to each main roost was potentially difficult, indeed, other roost sites in the county, on the drier heaths, are in more or less impenetrable, tall heathers. Watson (*op. cit.*) notes that the choice of site, especially on marshy ground, is probably a deterrent to foxes and also points out that it is the lack of disturbance by man on the actual roosting ground and the need for shelter and concealment which are the principle factors in roost site selection. Sadly, two of the three sites have now been changed through drainage to such an extent that it is unlikely that Hen Harriers will roost there in the future. One site remains intact, although commercial development has increased nearby and disturbance now threatens its security and seclusion.

Roosting Behaviour

Roost A was watched independently by two observers between 1st January and 29th March 1979 and these observations provide much of the information relating to the roost behaviour of Hen Harriers on the Selsey Peninsula. Arrival in the area coincided with the onset of severe cold weather in late December, and there was probably a second influx during a further cold snap in mid-February. Throughout January and February numbers fluctuated between 3 and 10 ringtails plus an adult male. The population of harriers using Roost A consisted of 3 or 4 juvenile males, 5 or 6 other ringtails (probably females) and one adult male. It is likely that a secondary roost was in use somewhere on the peninsula, as certain identifiable birds were missing from the main roost on some nights, and the adult male was occasionally observed to fly away from the area before absolute darkness. Up to 7 birds in the air at once just prior to roosting, provided a thrilling spectacle.

The arrival of ringtails at Roost A usually began about half an hour before sunset and continued over a period of 40 minutes. Single birds were found hunting the vicinity of the roost 78 minutes before sunset, but showed no inclination to stay. These were probably birds with hunting ranges in the immediate area. Occasionally the adult male did not arrive until 20 minutes after sunset, suggesting a longer journey from hunting grounds. Arrival times on dull, cloudy nights averaged 15 minutes earlier than for fine evenings, suggesting that harriers responded to low light levels. Often birds arrived with full crops.

Birds almost always arrived singly, flying low and from any direction, although there seemed to be a more definite flight line from the north. Activities at the roost site after arrival were varied, but generally included inspection flights, criss-crossing the reedbed several times interspersed with bouts of casual hunting over the adjacent meadows and hedgerows. More serious hunting was apparent after bad weather when perhaps prey had been difficult to find. For example, on 4th February 3 ringtails and a male were still hunting 17 minutes after sunset, and occasionally the silhouette of a ringtail hunting over a hedgerow was the last sighting before dark. It is interesting to note that although serious hunting regularly occurred, no actual kill or attempted kill was witnessed by either observer. Observations of kills during the day over hunting ranges also seem to be equally rare.

On fine, sunny evenings behaviour was more relaxed. Ringtails would perch on fence posts or in the meadow preening, and instances of 'playing' were witnessed. Thus on 28th January several probable immature males were observed pouncing on, diving at, grabbing, dropping and slashing at pieces of dead grass, sticks and other detritus (Shrubbs 1983). On 9th February CRJ watched a ringtail snatching and dropping a small prey sized object for some 5 minutes before abandoning its 'toy'. For young birds, this behaviour is thought to be useful in learning and maintaining prey-catching skills (see *British Birds* 76: 34). Harriers often showed interest in more animate forms. One late afternoon a ringtail suddenly left its fencepost perch and flew to within a metre of a Stoat (*Mustela erminea*) crossing the meadow. Each displayed great

curiosity in the other, although no attack was attempted by either. Another ringtail closely pursued a Blackbird (*Turdus merula*) across the reedbed for about 30m. A Barn Owl (*Tyto alba*) hunted the roosting area regularly each evening and was usually completely ignored by the harriers, however on one occasion two ringtails chased and dive-bombed it away, and on another, harriers bombarded the owl so severely that it took refuge in a willow bush for half an hour.

Most birds roosted between 10 and 20 minutes after sunset but some possibly roosted well after dark when observations had ceased. Cruising about over the reedbed, which often encouraged already roosted birds to jump up and fly about again, was followed by a sudden turn and a quick drop into the reeds. A bird dropping into roost would often displace a bird already occupying a form, and it always appeared that larger, older birds displaced smaller, younger ones. A clear pecking order seemed to exist of adult females over males over juvenile males. Competition for forms was a nightly feature. Once they had dropped into the reeds the birds were totally out of sight, even from a watch point 2m above the level of the roost. A constant watch of the reedbed was necessary to accurately count the birds as they went down to roost, and subtract those which left. On 21st February a minimum of 10, and a possible maximum of 13, ringtails were seen to drop into the roost but, from 26 minutes before sunrise the next day, only 9 birds were seen to leave, just possibly birds may have left the roost well before dawn. On rising, birds would suddenly jump up and fly hurriedly away in various directions, as if anxious to reach their hunting grounds as quickly as possible. Three ringtails were still occupying the roost on 18th March, 2 remaining in the area until at least the 29th.

Between 8th November 1980 and 15th March 1981 Roost B was watched occasionally by CRJ and more regularly by M. Jones. One ringtail was present throughout the period, plus one additional bird during March. The birds preferred roosting on banks in tall, dry vegetation under small Hawthorn bushes, and pellets were collected for analysis. As in Roost A, birds approached from various directions, and except once, low down. Serious hunting occurred only once at this site, by 2 ringtails together. On most evenings birds flew straight in and made one or two brief inspection circuits before dropping in. Brief aerial sparring was witnessed on one occasion after the second arrival had displaced the first from roost (M. Jones *pers. comm.*) and on another evening the second bird did not roost at all, but was last seen flying off north-east. All activity at the roost had ceased by 22nd March.

Roost C was occupied from December 1981 to late February 1982. At least 7 different individuals used it but 6 was the maximum observed on any one night. The total included 2 adult males (observed only once in the air together), a juvenile male and 4 females. As at Roost B, the birds almost always arrived singly, low and made only brief inspection flights before dropping in. Hunting was not observed at this roost. Birds again arrived from various directions, and it was noticed several times that birds approached the roost flying into the wind, which had also been recorded at Roost A. On 15th January an adult female chased off a male Sparrowhawk before perching in bushes to the rear of the roost for the duration of the watch. Possibly the same individual again used this perch on 5th February. On the latter date another ringtail was noticed to have a full crop. As at the other roosts, later arriving birds sometimes displaced others from favoured forms. By the last week in February one ringtail remained and on the evening of the 23rd this individual was observed chasing Reed Buntings into an adjacent rough grass field and remained there until dark. It is possible that the main roost site was used until at least 30th March, as a ringtail over Sidlesham Ferry that evening was heading in its direction. This roost was used again in February 1983 by an adult male and a female (E. Lloyd *pers. comm.*).

Calling at roost has not been recorded on the peninsula. However,

elsewhere in the county in 1983/84, when the normal complement of 2 males and 2 ringtails were at roost, another male and ringtail appeared calling, causing the settled birds to rise; all six then circled, calling, before dropping back into the roost (L. Osborne *pers. comm.*).

Hunting Ranges and Terrain

Through observations of characteristically plumaged individuals, e.g. 'a tatty winged female', approximate hunting ranges can be estimated and the preference of individuals for hunting terrain and ground cover. Figure 1 shows the area in which communal roosts have been found and the minimum extent of known hunting ranges. To the north-east there is limited information although the terrain is similar to the rest of the peninsula. Birds do use this and have been recorded leaving the roosts eastwards over Bognor Regis.

Hunting birds were known to cover a large part of the peninsula, the maximum recorded distance of known birds being 6 km from roost. Surprisingly, with, in some winters, up to 11 birds roosting in the area, individuals were not seen continuously over all the peninsula. Table II shows that birds preferred to hunt well structured ground cover, which occurs especially to the west and north-west of the main roost sites and most of the records of hunting came from this area. In south-west Scotland known birds have been recorded hunting 16 km away from the roost site (Watson *op. cit.*).

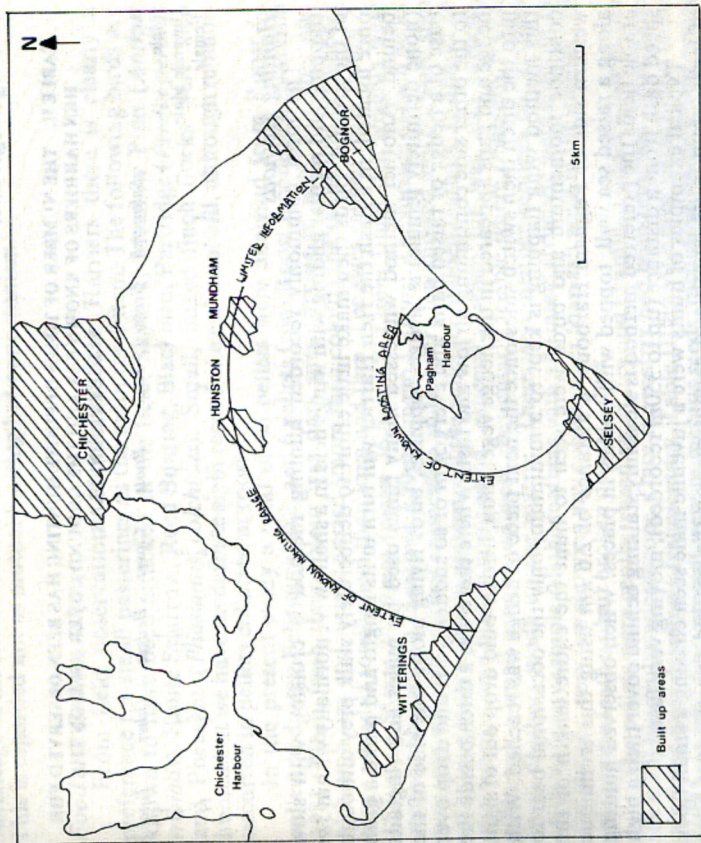


Figure 1. The area in which communal winter roosts have been found, the extent known birds have been recorded hunting and built up areas.

The closest roost to those on the peninsula is around Chichester Harbour 13 km to the north-west and birds seen on the Bosham and Chidham peninsulas and over Fishbourne (near Chichester) presumably came from this

vegetation dropped into a narrow channel which weaved across the marsh. The channel was only 2.5m wide, yet the harrier remained below the level of the channel top for some 150m. Presumably the bird was seeking small waders.

The limited observations of hunting behaviour, and where possible definite sexing of birds, suggests that the size dimorphism shown by Hen Harriers plays a part in the type of terrain over which hunting takes place. Males are smaller, slighter framed birds than females, and when recorded hunting have been seen using the hedgerows, their build and quick flight suitably adapted for the 'hedge-hopping' technique; when hunting at speed along a hedge they may be able to jink much quicker than a female, because of their size, to attack prey. The bulkier females seem to prefer to work open ground with plenty of cover e.g. root crops or clover, or occasionally broken ground e.g. a saltmarsh and, although having the ability to move extremely quickly, use the terrain more to surprise prey. Prey is taken either on the ground, by being flushed (i.e. just above the ground) or as it emerges from a hedge. Slow quartering is probably mainly employed to catch small mammals, 'hedge-hopping' for small passerines (and possibly rabbits) and the stalk and dash technique used almost exclusively for ground feeding birds. No records exist of Hen Harriers hunting with other birds of prey on the peninsular although many encounters with diurnal raptors have been reported elsewhere (e.g. Watson *op. cit.*). When a Hen Harrier is quartering other raptors may take advantage of the situation and, as small birds are flushed, nip in and make a kill. This is regarded not as mutual hunting but opportunism.

Food and Pellet Analysis

From field observations of hunting Hen Harriers there is clearly a preference for small passerines as the main food item. The following birds are known to have been attacked in the field; Skylark, Meadow Pipit (*Anthus trivialis*), House Sparrow, Reed Bunting, Blackbird, Partridge (*Perdix perdix*) and Pheasant (*Phasianus colchicus*). Small, mixed finch flocks were also hunted but we have no definite sight record of a mammal kill, although remains occurred in pellets collected at roosts.

In the present study a total of 56 pellets were analysed from Roost C, collected during February 1982, and 6 pellets from Roost B collected in March 1981. When fresh their colour was dark grey, drying to pale, ash grey and although size and weight varied (more than colour) the shape was commonly more rounded to elliptical than long and thin. The sizes ranged from 18mm x 15mm to 55mm x 19mm (mean 36.5mm x 17mm) and dry weights were recorded between 0.15gm and 3.09gm (mean 1.31gm). The surface of each pellet was smooth, dull and not segmented, in fact very few showed any outward sign of having bony material present. All the pellets contained feathers. In almost all the matrix was highly compacted, especially when fur was also present, although a small proportion were particularly friable where relatively fewer, large feathers made up the matrix. There were neither remiges nor retrices filoplumes, very few showing any colour other than ash grey; in the majority of pellets the feathers had broken down to dust.

The pellets were gently teased apart dry and examined under a low power (x 8.75) binocular microscope. Once the matrix had been removed the remains exposed were extremely fragmentary. Table III lists the prey items found in the 1982 sample. Also present were numerous seeds, including whole wheat grains and a large proportion of grit.

Birds account for almost 85% of the total prey in the sample analysed and Table III subdivides these into 4 categories and clearly larger passerines, between 30-50+gms, account for very little of the diet. From the remains of humeri found in the sample, the number of birds within four weight ranges have been determined (Table IV). There were no remains indicating bird prey of less

roost. The possibility, if any, of overlap in hunting ranges of neighbouring roosts has not been proven. Birds normally hunt singly, but individuals at a roost may have a combined winter territory. For example, in early 1979, 2 ringtails were hunting the west side of Pagharn Harbour together with a third hunting the eastern side and, next day, 2 ringtails were hunting Sidlesham Ferry. Such observations suggest individual territories do not exist.

The Selsey Peninsular covers approximately 100 sq. km; the area is more or less flat with a mean height of between 4-7m, maximum 9m. The farming is predominantly arable with some permanent pasture, glasshouse industry, a relatively high proportion of small paddocks but little woodland. Much of the arable land is given over to winter cereals but root crops, especially oil-seed rape, and legumes are also important. The lack of appreciable contours dictates that an extensive network of drainage ditches is necessary, most of which are deep and steep sided; some have raised embankments and many retain the old, dense hedgerows. The western side of the peninsular is bordered by the extensive saltmarsh of Chichester Harbour and the south-eastern side by the smaller Pagharn Harbour. Table II shows the number of times sexed birds have been observed hunting and the ground cover over which this has taken place. Females and juvenile males especially show a slight preference for roots and clover although juvenile males have been recorded hunting cereals and reedbed (other). When it has been possible to sex birds, only males have been found hunting hedgerows.

TABLE II. THE NUMBER OF TIMES DEFINITE HUNTING HAS BEEN OBSERVED FOR HEN HARRIERS OF KNOWN SEX AND THE GROUND COVER USED ON THE SELSEY PENINSULAR

	Saltmarsh	Grass	Rape	Roots	Clover	Hedges	Other	Total
Male				1	3	1	2	7
Juvenile Male			1	2	4		1	11
Female	1	2						

Hunting Methods

The most commonly recorded hunting method is cruising with slow flapping and regular gliding with wings held in a shallow V, normally within 3m of the ground. Birds then make little effort to deliberately stalk prey although once located, in a flash the Hen Harrier will turn in its length and make a grab behind. Another method witnessed many times used by males and ringtails (none definitely female) is 'hedge-hopping', birds flying along one side of the base of a hedge or raised bank and every 50m or so suddenly lift and drop over to the other side continuing on low and fast. Where there was a ditch beside the hedge and gaps appeared in the hedge vegetation, birds would drop out of sight into the ditch then switch sides once the next piece of hedge was reached. With this method wing flapping is kept to a minimum, only the occasional beat to continue momentum and birds were seen to hunt the entire length of the western side of Pagharn Harbour, a distance of 2.6 km using this technique along a raised sea wall, topped with bushes in places. When observed hunting arable fields the preferred method is stealthily stalking behind cover then a high speed dash from a distance (up to 350m recorded), moving very fast.

Typical examples of hunts were a juvenile male seen chasing a small flock of larks, spun in its length and caught one on the ground, which must have frozen. On another occasion a ringtail hunting stubble dashed fast and low and flushed a Skylark (*Alauda arvensis*). The harrier grabbed at it from beneath, twisting over onto its back, but missed. A female was seen hunting a flock of House Sparrows (*Passer domesticus*) at a grain feeder by dropping out of sight along a sunken lane and then appearing over a hedge at exactly the right spot to surprise the birds on the ground. Another ringtail hunting over saltmarsh

TABLE III. THE PREY CONTENT OF HEN HARRIERS' PELLETS COLLECTED AT ROOST C ON THE SELSEY PENINSULAR IN FEBRUARY 1982

	Prey Items	% Total
Small-medium passerines	24	28
Large passerines	4	4.5
Seed eaters	22	25.6
Bird sp.	23	26.7
Small mammals	7	8.2
Beetles	6	7
Total	86	100

than 10gms. Using both humerus length and feather remains, definitely identified were 2 Blue Tits (*Parus caeruleus*) and a Yellowhammer (*Emberiza citrinella*), from jawbones, 3 Field Voles (*Microtus agrestis*) were also found. Analysing the pellets collected from Roost B, M. Shrubbs found the remains of a Field Vole, 3 birds (one at 23gm, one possible Lark and one possible Reed Bunting) and a small rabbit or hare.

From the measurements of humerus lengths the bulk of the bird prey items fall within the weight range 16-30gms, which takes in such species as Meadow Pipit, Yellowhammer and Reed Bunting (Hickling 1983). Hen Harriers take Meadow Pits in abundance in other parts of the country and, in pellets studied in south-west Scotland, Watson found the remains of 8 or 9 in 50 pellets from a winter roost, the commonest bird prey. On the peninsula however, when hunting has been observed, harriers have a penchant for Skylarks which are the most recorded potential prey. The remains of rabbit or hare are interesting for rabbits can form a large proportion of the Hen Harriers' diet in some part of its winter range.

TABLE IV. THE NUMBER OF BIRDS WITHIN FOUR WEIGHT RANGES FROM THE MEASUREMENT OF HUMERUS LENGTH FOUND IN HEN HARRIER PELLETS ON THE SELSEY PENINSULAR

Weight range (gms)	10-15	16-20	21-30	31-50
Number of birds	5	8	7	3

(For the calculation of bird weight from humerus length see Yalden 1977)

DISCUSSION

The Selsey Peninsular is clearly an important wintering area for the Hen Harrier and the major influxes during 1978/79 and in 1981/82 gave observers the opportunity to study closely communal roosting.

The possibility that migrant harriers use the same roosts as established winter birds was raised by observations at Roost B, when a new ringtail was seen to arrive very high in March 1981, staying for a few days and, at Roost C, a second adult male was only ever observed once. In addition the incident of a new male and female calling at an established roost elsewhere (see above), involved a pair seen only once in late February. Furthermore, Hen Harriers roosts are known not to be exclusive. Watson found Short-eared Owl (*Asio flammeus*) pellets in Hen Harrier roosting forms, and in North America these Owls were using a Marsh Hawk roost by day, sometimes arriving in the morning before the Marsh Hawks had left. None of the roosts on the Selsey Peninsular were known to be used by both species at the same time but the need of both for concealment and freedom from human disturbance probably leads to a similar choice of site. Around Roost B Short-eared Owls have roosted in the rough vegetation of the banks for many years and Roost C was better

known as an Owl roost, with up to 11 birds, during the mid 1970s. During a dawn watch at Roost A a ringtail sat on a meadow near a Short-eared Owl without any interaction between them.

At roosts in south-west Scotland, Watson regularly observed birds arriving with full crops and this was also so at Roost A although only witnessed once at Roost C. Birds seen leaving Roost A in the early morning did so hurriedly and these observations suggest that Hen Harriers on the peninsula are generally dawn and dusk feeders; the early morning and late evening are possibly the best times to catch prey by the methods they employ, hunting observed during the day may be the result of poor conditions in the early morning but if hunting is successful on leaving the roost it is possible that birds will seek a secluded spot and remaining inactive whilst digestion takes place. This may explain the relative paucity of sightings of birds in an area where they are known to be common. Marsh Hawks in North America spent 57% of the day not hunting during the breeding season (Watson *op. cit.*). The proportion was higher in wet weather and it is reasonable to assume it would be higher still in winter. Pellets are a useful guide to prey species but are not a reliable one to food intake. Even so one pellet analysed contained at least 2 Field Voles and a bird species, some 40+-70gms liveweight, and another contained a small rabbit/hare and a bird of 23gms. Thus these birds presumably obtained the bulk of the 90gms required per day (Brown 1976) in a single hunting session.

Much more information would be welcomed on food requirements, prey in winter quarters, hunting and roosting behaviour of this evocative species. While observer activity has increased many fold in the last 20 years and partly accounts for the increase in the number of records, there is still a real increase in the number of Hen Harriers wintering in Sussex and in particular the Selsey Peninsular. If breeding success continues to improve in Britain and elsewhere, provided safe roosting sites remain on the peninsula, the hope is that the Hen Harrier will become even more abundant in winter than it is today.

SUMMARY

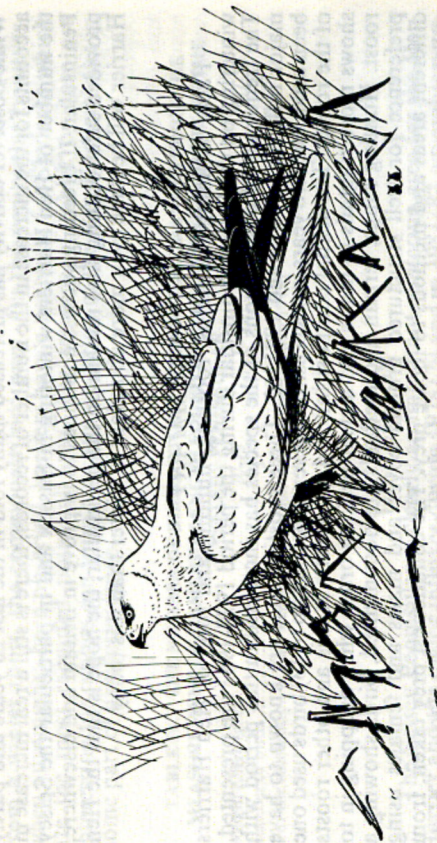
Facts outlining the status, roosting, hunting and food of Hen Harriers wintering on the Selsey Peninsular during the period 1978-1983 are presented. The frequency of observations of the species has increased in this period with major influxes in 1979 and 1981/82. Three roosting sites are known to have been used, one two years in succession. Eleven (possibly up to 13) birds used one of the roosts. The sexual composition and behaviour at this and other roosts shows more ringtails to males and a clear pecking order when dropping in to roost. Hunting range, terrain and methods are documented, birds showing a preference for well structured ground cover and males and females using different areas and methods to locate prey. The commonest prey taken, from pellet analysis, were small passerine birds in the region of 16-30gms, birds amounting to almost 85% total prey items. Relatively little is seen of the Hen Harrier during the day and it is thought that birds spend much of the time digesting food and not actively hunting. Hunting may often take place immediately after leaving, or prior to entering the roost. As the species is, in some years quite common, and numbers likely to increase, a detailed winter survey of all its behavioural aspects would be a worthwhile exercise.

ACKNOWLEDGEMENTS

The authors would like to thank all SOS members for submitting Hen Harrier records, in particular, Leslie Osborne, Eric Lloyd and Mervyn Jones for their observations at roosts, and especially to Michael Shrubbs who has made all his detailed notes, spanning almost twenty years on hunting methods, strikes in the field and roosting behaviour available for publication and for commenting on the first draft.

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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:

Divers (except Red- and Black-throated on the coast)	Pectoral Sandpiper
Grebes (other than Great Crested and Little)	Buff-breasted Sandpiper
Shearwaters	Phalaropes
Storm and Leach's Petrels	Pomarine Skua
Shag	Mediterranean and Sabine's Gulls
Bittern	Iceland and Glaucous Gulls
Purple Heron	Roscate Tern
White Stork	Black Guillemot
Spoonbill	Little Auk
Bewick's Swan (other than at Amberley Wild Brooks)	Puffin
Whooper Swan	Hoopoe
Bean and Pink-footed Geese	Wryneck
Garganey	Woodlark and Shore Lark
Red-crested Pochard	Richard's and Tawny Pipits
Long-tailed Duck	Waxwing
Honey Buzzard	Dipper
Red Kite	Bluetthroat
Marsh and Montagu's Harriers	Warblers: Cetti's, Savi's, Aquatic, Marsh, Icterine, Melodious, Barred, Yellow-browed
Goshawk	Red-breasted Flycatcher
Rough-legged Buzzard	Golden Oriole
Osprey	Red-backed Shrike
Peregrine	Raven
Quail	Serin
Spotted Crake	Crossbill
Corncrake	Scarlet Rosefinch
Stone Curlew	Lapland, Gull and Ortolan Buntings
Kentish Plover	
Dotterel	
Temminck's Stint	

In addition: all unusual races of Yellow Wagtail and Rock Pipit.