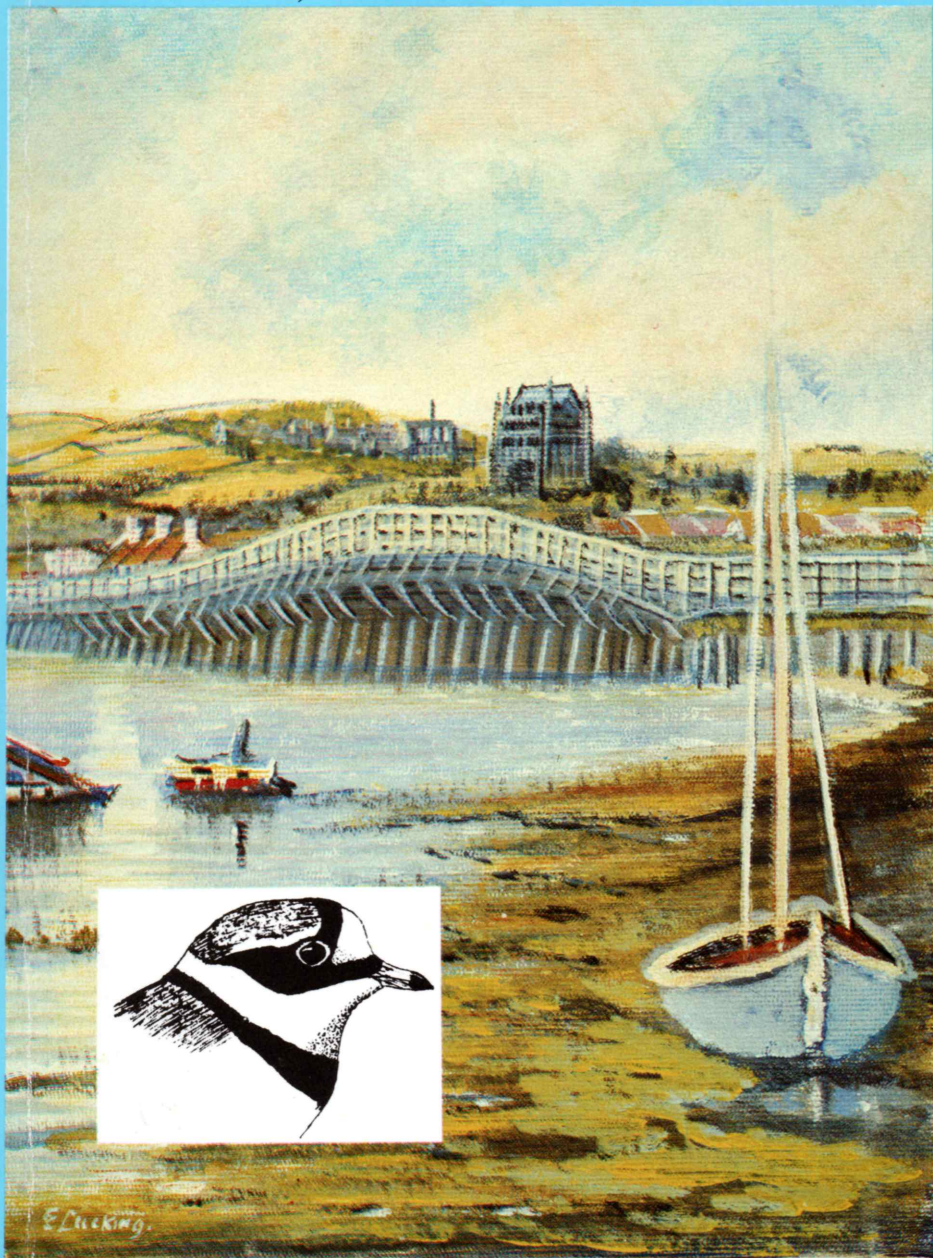


THE BIRDS OF SHOREHAM

and surrounding areas including
BRIGHTON, STEYNING and WORTHING



Published in 1988 by
SHOREHAM DISTRICT ORNITHOLOGICAL SOCIETY

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edited by
John Newnham



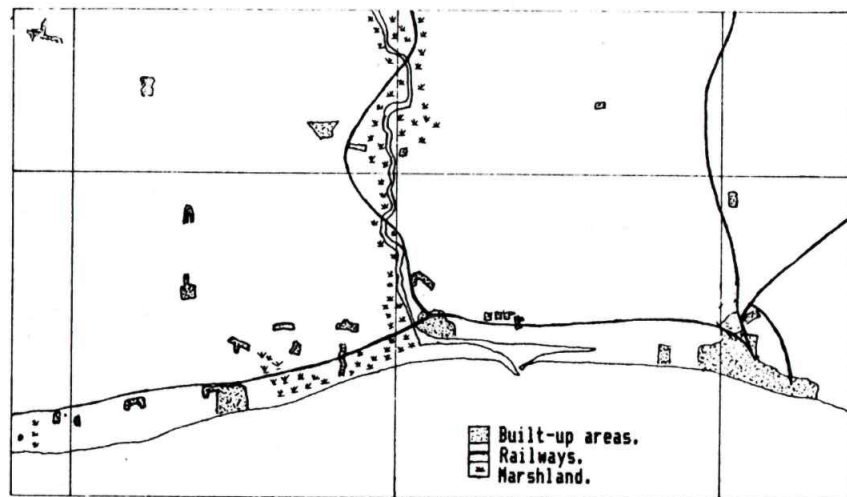
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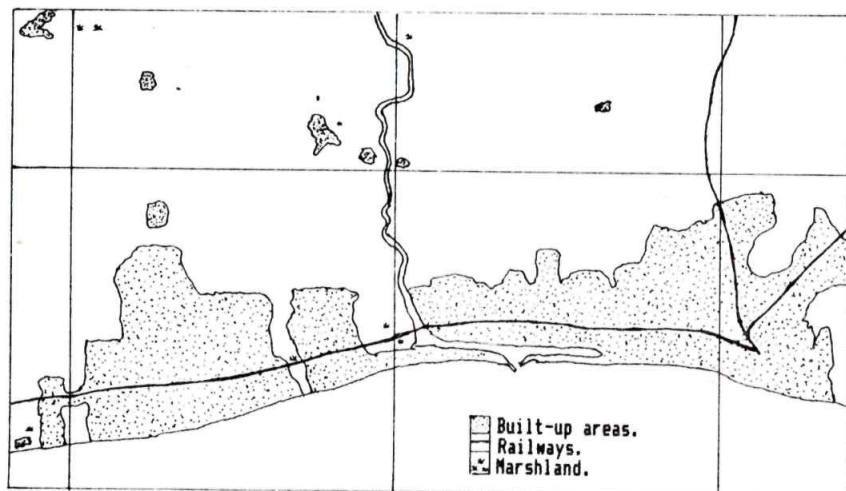
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Cover illustration by Ellen Lucking

Map of the Shoreham District Ornithological Society's recording area showing settlements and marshland in 1860



Map of the Shoreham District Ornithological Society's recording area showing settlements and marshland in 1880



THE START OF IT ALL

At a first glance this part of the Sussex coast, with extensive urbanisation between Brighton and Worthing, would seem to be an area neither attractive nor rewarding for birdwatching. A closer look reveals a variety of habitats which attract a good range of different species. However in 1948 when I came to live here there were no natural history societies that concerned themselves with birds. The Horsham Natural History Society, with a small bird section, was the nearest but eighteen miles to the north, and at Eastbourne, thirty miles to the east, a similar Society met. The Brighton and Hove Natural History Society, although the closest, had no bird section.

The few notes and records of birds from this area appeared in the South Eastern Bird Report which was started in 1934 by Ralph Whitlock and continued in 1948 by Grahame des Forges. D. D. Harber then joined des Forges for a few years before editing the journal alone as the Sussex Bird Report until it was taken over by the Sussex Ornithological Society on its formation in 1962, and so it continues.

In the early days there were few or no observers to cover the important Adur estuary, part of which is now an R.S.P.B. reserve, or the Downs either side of the Adur Valley as most bird watchers were in the east of the county. I and a few others felt that Shoreham needed a society to allow like minded people to meet, talk about birds and to pass on information. During 1952 a few tentative meetings were held until, in January 1953, the Shoreham Ornithological Society was launched. By the end of the first year the membership reached forty four. Meetings with a guest speaker were held during the winter months and field outings with an experienced leader arranged throughout the year. An annual report was published and these activities have continued ever since.

At first the area covered by the Shoreham Ornithological Society was very local, but over the years its range has slowly become more widespread. The following table, showing a rough geographical distribution of the membership in five well spaced years, reveals clearly a spread of the membership away from Shoreham.

	Total	Percentage of membership living in			
		Shoreham and Southwick	Brighton and Hove	Lancing and Worthing	Stevington area
1953	44	55%	23%	10%	2%
1960	125	32%	24%	18%	16%
1970	163	31%	12%	23%	18%
1980	103	36%	19%	21%	14%
1987	159	24%	28%	31%	10%

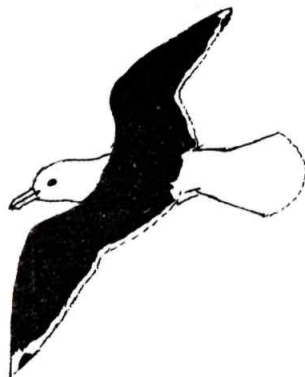
The table shows how the membership increased, a peak of 180 was reached in 1971. At that time the meetings, then held in the Huntington Hall, were packed so it was decided to limit the membership to 180. It is interesting to reflect how many junior members were active in the society in the 1970's. At least 30 young members were present in 1962 forming a stark contrast with the one solitary individual in 1986.

The distribution of the bird records undoubtedly reflected the areas where members lived and bird watched and the reports in the 1950's were mainly of sightings in and around Shoreham. It was not many years however before records from the areas near Worthing and Brighton, particularly from the downland north of these towns, were included in the Shoreham Ornithological Society annual report. The area now recorded by the society and reviewed in this booklet is shown on the map and includes Ferring Rife to the west, Brighton marina to the east and Steyning to the north.

Although the Society still meets regularly, has field outings and produces a report there have been a number of changes in its activities over the years. The meetings in Huntington Hall finally ended in 1976 and after meeting for three seasons in the Shoreham Community Centre, often with the background of another groups's Saturday evening dance, the Society has settled to meeting in St Giles Church Hall in Shoreham. Between 1958 and 1976 the Town Hall in Shoreham was the venue for the Societies annual showing of RSPB films; these were well attended in the early years and provided useful revenue for the Society but by 1976 the audience had decreased dramatically so it was discontinued.

Throughout the Society has been run by an excellent committee with some members serving for many years. Without their dedication and enthusiasm the society would never have been started nor have flourished. Ironically the largest crisis which faced the Society was in 1981 when several council members retired simultaneously. This coupled with a rapidly falling membership and diminishing funds led to an Extraordinary General Meeting which may have led to the Society being wound up. Fortunately new people with new ideas were forthcoming and the society has strengthened again. Since 1981 the name has been changed to the Shoreham District Ornithological Society in recognition of the wider geographical spread of its membership.

As previously mentioned the information gathered from both members records and more systematic studies have been published in an annual report. As the society has evolved so the report has changed. In 1953 a thin 14 page document was produced, by 1960 there were 32 pages, 52 in 1970 increased to 70 by 1980 and the latest report in 1986 was 92 pages in length.



The cover too has changed, between 1953 and 1958 a Swallow adorned the cover, an attractive Kingfisher on a bright orange background appeared in 1960 but the best known design of a Great Black-backed Gull by Gerald Sutton was used between 1961 and 1980. The cover changed again in 1981 to show a Ringed Plover but the most dramatic change during the 1980's has been helped by the availability of some of the advances in microcomputer technology. This has allowed the editor to plan the report more precisely, present the ever increasing number of records more clearly and include a variety of sketches, graphs and maps. These reports, together with those of the Sussex Ornithological Society and the standard reference books of the county's birds, form the basis of this book.

Perhaps the most important step taken by the newly formed society in 1953 was the acquisition of a bird sanctuary and ringing station on land belonging to the "Brighton Water Board". It is a small copse of about three acres situated on the east side of the

Adur Valley, about half a mile north of the Toll Bridge and below the slope of Mill Hill. The copse is mainly of Willow, Hawthorn and Elder scrub through which a stream passes and drains onto the nearby water meadows.

Near to but apart from the copse, was the house and garden of Frank Weatherhead, who at that time was the resident engineer who maintained in the pump house an immaculate, coal burning, steam driven water pump. When the reservoirs were full the excess water ran over a concrete ledge, making a miniature water fall which drained away into a stream, thus forming a very attractive area for birds. Over the years, with an increasing population on the south coast, a need arose for a greater supply of water. In 1972 the steam pump was replaced by a more powerful electric one and water was taken from deeper bore holes. Thereafter the small springs in the copse became dry and the excess water only flowed over the waterfall during the winter. Mr Weatherhead retired in 1965 and Tom Santer became the resident engineer. Soon after this the lease for the Sanctuary was changed extending the area of the "reserve" to include the southern portion of the copse. Furthermore the access which wound its way down the steep side of Mill Hill had become impenetrably overgrown and the water authority then allowed the Society to use the private waterworks road. In 1981 Willie Schultz became the tenant in the cottage and "guardian" of the pump station following the retirement of Mr Santer but the Society's amicable arrangements with the water authority have remained unchanged.



The sanctuary with Mill Hill behind

Here observations were started to record the birds that inhabited and visited the area. It soon became apparent that this moist habitat attracted migrants, both in the spring and the autumn passage whilst in the winter the scrub provided a roost for thrushes.

A national scheme for bird ringing had started and was organised by the British Museum (Natural History) to be fully taken over by the British Trust for Ornithology at Tring in 1954. The Sanctuary was then the only ringing station in Sussex with Portland Bill in Dorset and Dungeness in Kent being the two nearest ringing sites.

In 1955 the copse was fenced off in an attempt to keep out the cattle which disturbed the nesting birds and caused general havoc in the area. Two years later a Heligoland trap was built on an ideal site to the north of the copse where there was a small pool that rarely dried out. However soon after it was completed I was asked by the B.T.O.

to try out a "mist-net". These nets originated from Japan where they were used to catch birds for the pot. Originally they were made from long strands of human hair but now synthetic fibres are used. Mist nets revolutionised bird trapping and sadly the Heligoland trap fell into disuse but not before it had caught several new species, one of its specialities being the Water Rail.



The Adur Valley from Mill Hill

On 31st August 1959 an immature Barred Warbler was caught and ringed, this was the first record for Sussex. To begin with a modest two hundred birds a year were ringed. By the 1970's however, the annual total often exceeded two thousand.

In 1961 a hut was built in the copse to store ringing apparatus and to keep a log book to be filled in by visitors to help with the records of birds seen. At the ringing station many young people learnt to ring birds, for now it has become necessary for all ringers to be trained and then issued with a permit from the B.T.O. to ring birds. Almost every year a new species was caught or seen in the Sanctuary area.

Despite the alterations to the habitat partly induced by the draining and partly by the natural succession from low scrub to areas of mature trees the area is still good to watch birds. Even the construction of the A27 Adur flyover between 1967 and 1970 caused far less disturbance than was expected, the road and approach roads being very close to the Sanctuary. Though not manned on a regular basis it is visited mainly in the spring and autumn and in the winter if the weather allows as the water meadows are liable to extensive flooding. Up to the end of 1986 one hundred and forty seven species had been recorded in this small area.

As well as looking after the Sanctuary the Shoreham District Ornithological Society has in recent years been involved in conservation issues involving sites like the River Adur and its mud flats, Ferring Rife and Widewater, these issues are described in the next chapter.

John Stafford

THE HABITATS OF THE DISTRICT

Before looking closely at the bird records collected in our recording area, it would be useful to consider the habitats of the region in order to become familiar with the sites which have proved important for birds over the years of the society's existence. At the same time it will be useful to recognise some of the pressures to which these sites are subject.

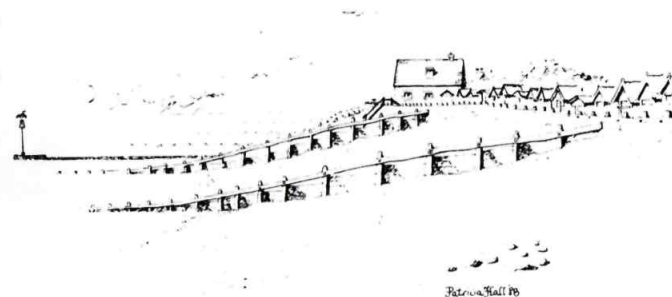
The Sea and Beaches

The shallow sea off our coast is the southern-most of the habitats and one which has become an important focus for some of the society's activities.

In the early days it was apparent that the sea provided roosting, resting and feeding sites for local birds, particularly in the winter when sea-ducks, Cormorants, divers, auks and grebes feed offshore and the whole coastline is an important roost for gulls. Since 1976 a considerable increase in systematic sea-watching has established that, during favourable winds our inshore waters form a migration route for several groups of birds which pass through the English Channel. Regular watching takes place from both Worthing and Brighton marina but records are also received from many other points such as Hove, Shoreham, Goring and Ferring. Although spring passage is the most intensely watched period, autumn can also be productive. Winter movements of seabirds and wildfowl are also regularly seen over the coastal waters and, in occasional extreme conditions, can produce some of the most dramatic bird watching in the area.

The rapid increase in popularity of wind surfing and other water sports certainly does not affect the bird movement over the sea nor do they appear to affect the wintering species. Oil pollution in the Channel however, certainly takes its toll of seabirds and waders although thankfully, as yet, there have been no major oiling incidents off these shores.

Our beaches range from shingle through to mud. In the past the shingle held breeding Wheatears and waders like the Ringed Plover. Today disturbance and urbanisation generally prevent this, but Shoreham beach still supports an interesting flora and attracts finch flocks and migrants including Black Redstarts.



The beach, Ferring, Sussex

The muddy beaches west of Worthing, like the mudflats of the Adur Estuary, are of great importance, particularly during autumn and winter, when they provide feeding sites for waders. The Sanderling population is of special significance as it represents more than 1% of the North Western European wintering population. Systematic counts are made of wading birds on the beaches and roosts at Shoreham and between Goring and Ferring.

Disturbance on the beach is a problem at all times of the year, but it is in the winter that its effects are most serious. Research into wader feeding ecology suggests that the birds must search for food almost continually in order to survive. This is particularly so in late winter when the weather is at its worst and prey species in the mud have already been depleted. The constant passage of people, dogs and recently, horses, across the beach at low tide constitutes a major interruption to successful feeding and therefore a threat to the birds. Other disturbance is associated with bait digging and with water sports such as canoeing which regularly disturbs feeding flocks of Dunlin in the Adur estuary.

The Coastal Plain

Two hundred years ago most of the coastal plain west of Brighton would have been undeveloped commons and marshland interspersed with reedy lakes. It was an isolated part of the county, inaccessible and often inundated by the sea. One can imagine that it must have been a paradise for birds and wildlife of all kinds.

Today the urban sprawl almost links the two ends of the area and the majority of the former rich habitats have been lost. Much of the drainage and development was complete before World War I but it is a continuing process; members of the society have witnessed the loss of several choice sites along with their associated birds during the past 35 years.

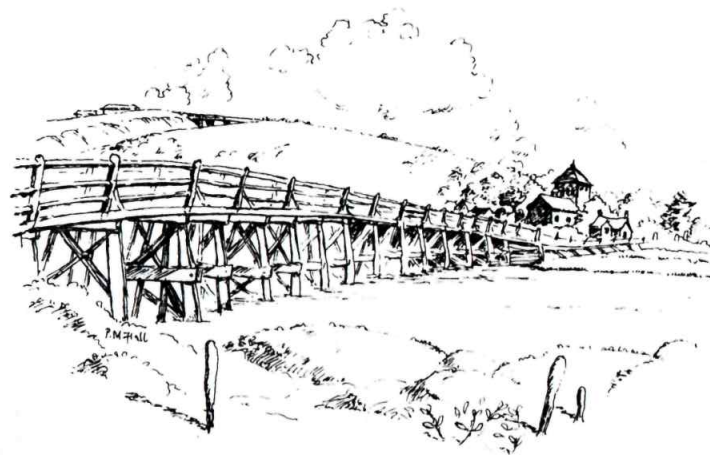
However the urban area is by no means devoid of life. Gardens create an acceptable alternative habitat for some species and the modern trend of wildlife gardening and shrub planting has greatly enhanced this situation and done much to counter the loss of hedgerows and copses due to modern agricultural practices. Similarly the current fashion for pond construction has been useful in replacing the lost farm ponds. They not only provide enriched habitats for birds but also have proved to be the salvation of the common frog.

Widewater



The urban population increase in the area has obviously had many direct and indirect effects on the bird population. Each of the towns and villages in the area has grown. One perhaps unforeseen effect on the bird life has been the increased use of refuse tips by birds and by those who watch and study birds. The old dumps at both Shoreham and Worthing were regularly watched, the refuse tip at Sompting supports a large corvid population and has become a prime site for gull study and ringing and the tip near Small Dole was one of the leading sites in the country for seeing the yellow legged race of Herring Gull.

The few remaining open sites along the coastal plain are well watched and their birdlife well documented. Perhaps the most important of these locations is Widewater, a narrow brackish lagoon behind the shingle beach at South Lancing. Diving ducks gather on the lagoon in small numbers during the winter and when the water level falls in the late summer the muddy fringes regularly attract migrant waders. This is a popular area and unfortunately the waders are readily disturbed by walkers and dogs.



The old Toll Bridge, Shoreham, Sussex

Where the Adur Valley crosses the coastal plain there are three popular watching places. The large open expanse of grass at Shoreham airport is notable for roosting gulls and waders and a likely place to see wildfowl in severe winter conditions, the habitat suffered when the airport was drained and a hard runway constructed. Just south of the airfield the reedy ditches and fields of permanent pasture at New and Old Salt's Farms have so far avoided too much development. The Adur recreation ground remains a good site to see migrant chats and warblers but thirty years ago this was the location of the Shoreham Rubbish Dump with a small reedy stream and pool which regularly attracted scarce and rare birds.

On the outskirts of Worthing the Brooklands lake, now set in a pleasure park supports a population of common waterbirds, an impressive winter population of Coot, and also plays host to the occasional storm driven phalarope or grebe. In the past there was a marsh and pool here which were drained in 1966 and 1971 respectively.

At the western end of Worthing the plain once again opens out at Goring Gap, an area of some 70 hectares which contains part of Ferring. The land is farmed as arable and in recent years has suffered much from hedgerow removal as well as regular disturbance. It is famous for its Holm Oaks (*Ilex Trees*) which form the north and east boundary, and for the wader roost which gathers during the winter months, when the birds are driven off the beach by the high tide. Fortunately the disturbance has not caused the roost to be abandoned, although roosting does occur occasionally at less frequented sites to the west of the Ferring Rife.

River Valleys

The valley of the River Adur is a popular and generally well watched location which offers several associated habitats:- the river and its banks, the surrounding fields and hedgerows and the few remaining regularly flooded fields, known as brooks, or levels.

The River Adur is tidal throughout our area and from Lancing College to the harbour mouth there are mudflats and areas of saltmarsh dominated by Sea Purslane. The intertidal mudflats are well watched and here good numbers of Ringed Plovers, Redshanks and Dunlins feed. The best area of this small estuary, between the Norfolk Bridge and the footbridge has recently been acquired by the R.S.P.B. as a reserve. The lower reaches of the river are fringed by houses and wharfs but in stormy or cold weather this harbour area often attracts interesting species.



Adur Estuary at Shoreham

Much flood prevention work has been carried out through most of the length of the river which has become canalised. The banks remain treeless but these raised embankments at least provide a reasonably good vantage point and access through the area. Occasionally the imported soil, used to strengthen the banks create blooms of unusual flowers, such as the Bee Orchids which appeared south of Upper Beeding in the 1970's.

The valley is a spring and autumn migration route; many migrants pass through the society's Sanctuary which is located on the east side of the valley. The brooks are most important in the winter particularly following flooding or during harsh weather. In the recent run of severely cold winters wildfowl have been seen in large numbers and

unusual species such as Goosander and Smew have occurred in record numbers. The valley has also attracted many other groups of birds, including raptors, large flocks of finches and thrushes, and a substantial wintering Snipe population.

Sadly much of the levels have been lost to drainage and pasture improvement, consequently typical wetland birds such as Yellow Wagtail, Snipe or Redshank no longer breed in the lower reaches of the valley and have diminished considerably on the upper Adur Levels.

Cuckoo's Corner at a bend in the river just south of Coombes, is a popular spot. Here a small creek joins the main channel and the woodland and hedgerows behind provide ample cover. An impressive list of species has been seen here over the years.

Further north near Steyning, Striven's reed bed was a regularly watched site during the 1970's. It provided a good ringing station and study area; in addition to the commoner species, this was always a place to find Water Rails, often as many as ten together. After access to the reed bed was lost a new private reserve, known as the Mumbles, was developed on the site of the former rubbish tip. This has now replaced the reedbed as a study area and ringing site.

At Small Dole a collection of shallow pools provide a haunt for waders and is a regular location to see both wintering and passage Green Sandpipers.

The rife stream at Ferring, albeit considerably smaller than the River Adur, is the only other waterway passing through the area. Here too Green Sandpipers and other waders can be found and the surrounding hedgerows, gardens and fields attract many migrants.

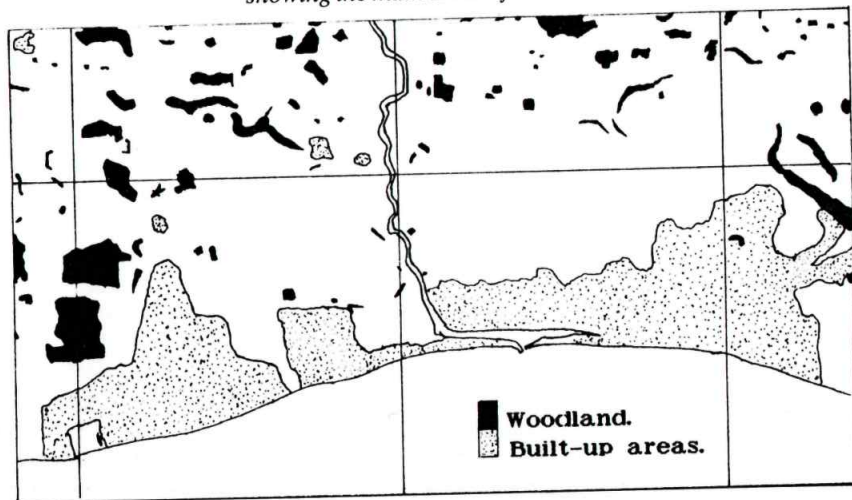
Woodland

Our recording area is generally lacking the extensive deciduous woodlands for which Sussex is famous. The ancient forests which once clothed the region were felled by the first human inhabitants. A glance at a map of the area shows that most of the Downland is almost devoid of woodland, what little does exist lays as narrow bands along the northern, scarp slope. The wealden clay and greensands hold only small scattered relicts of forest and the river valley is almost bare. One can only imagine the wildlife of those unpolluted times, some 8000 years ago when the Downs were covered with Beech and Yew, the Weald was a dense Oak forest and Birch and Willow carr choked the river valleys.

The woodland to the north of Highdown Hill, which extends over the A27 to Clapham is the largest in our area, followed by Shave's Wood near Henfield and the scarp slope woods beneath Chanctonbury. All are fairly closely managed for game preservation but generally contain a cross section of typical woodland species. Nightingales can be found in the woodlands to the north west of Steyning and records of forest dependent raptors occur from time to time. The wooded parks of Brighton have been well watched in recent years and a number of interesting records received.

The ravages of the hurricane force winds of October 1987 created severe destruction to the woodland habitat. The scale and significance of the damage will be apparent in the course of time. The distribution of this damage was patchy, some well known landmarks almost totally destroyed others hardly touched. A survey at a copse at Steyning Grammar School suggested that the destruction rate was between 10 and 50% depending on which species were monitored. Scots Pine appeared to be particularly badly affected.

Map of the Shoreham District Ornithological Society's recording area showing the main areas of woodland



Downland

The South Downs form a wide band across our recording area and constitutes the largest of the habitat zones. The chalk, laid down some 75 million years ago in the Cretaceous age, creates a unique and well recognised landscape. After the trees were felled the dry hills served as fortification and trading routes. In more recent times the "traditional" image of the Downs developed. Shepherds tended flocks of sheep which by grazing prevented the re-establishment of shrubs and so maintained a rough grassland. Due to porous, alkaline chalk the grassland was low in nutrients and therefore poor for most agriculture. This low nutrient regime was ideal for the development of the very specialised sward which thrived on the Downs and created some of Britain's most localised vegetation. Less competition from ranker species allowed the success of such species as orchids, vetches and rampion which, in turn, encouraged a magnificent array of insects and the ground nesting birds for which the Downs were once renowned. A testimony to the wealth of this birdlife is the fact that shepherds were able to augment their earnings by trapping and selling songbirds; favourite of all was the Wheatear, the flesh of which was said to "melt in the mouth".

As late as the 1970's something of this old downland image remained; Stone Curlews bred, substantial numbers of migrants passed through and in both autumn and winter large raptors were regularly seen.

However the last 20 years has seen a rapid change in agricultural practices on the Downs, a move to intensive arable farming with the subsequent increase in pesticide usage and hedgerow removal. Bird life is now less rich and many of the former breeding species are much reduced or absent.

The progression to intensive cereal growing is well documented and is particularly significant with regard to the effect which it has had on the success of the breeding Lapwings. The area between Cissbury, Chanctonbury and Steyning has been the area



Cissbury Ring from the Bostal Road

most regularly watched during the society's history. In the late 1970's and 1980's Cissbury in particular produced a wealth of records, a trend which should continue as the area is being used for a ringing study. Sadly this wild, isolated part of Sussex is threatened by proposals to site the Worthing by-pass road between Cissbury and Chanctonbury.



Wiston Pond and Chanctonbury Ring

Similar proposals for by-passing Brighton threatens downland in the east of the area where in the 1960's there was regular watching at both Devils Dyke and Coney Hill. Members logged the first significant ploughing here in 1961 and later recorded the removal of the dew pond.

Heathland and Sandpits

Immediately north of the Downs runs a region of complicated geology comprising bands of gault clay and greensands. Ecologically, this area is at the opposite end of the soil range compared to chalk having generally acidic soils. The typical vegetation of this type of geology is heathland, perhaps with bracken, interspersed with Scots Pines. Apart from Sullington Warren and a few nearby sites little of this vegetation exists.

The majority of this area is now used for agriculture, managed woodland or for residential purposes. Bird life typical of heathland habitats is, therefore, not properly represented locally. The sand pits at Washington and Storrington have been closely associated with breeding Sand Martins. The catastrophic decline of this species is one of the most dramatic and sad histories chronicled by our records.

Inland Waters

There are no extensive inland waters in this part of Sussex, however some waters are significant in local terms and provide a regular supply of records. Wiston Pond is the most regularly watched; attractively situated under the Downs and surrounded by marginal vegetation and hedgerows this private fishing lake is the haunt of common waterfowl.

Patching Pond is a similar sized pond at the very west of our region lying immediately north of the A27 near its junction with the A280. This is another fishing lake and in addition to the common residents often attracts early migrants including hirundines, warblers and Common Sandpipers.

Smaller sites are the pond near Northbrook Farm, Ferring Village Pond and the Steyning Mill Pond. All have some resident water birds and all attract occasional scarcer species.

Having briefly looked at the habitats and main bird watching sites the following pages concentrate on the birds seen in the area.

M. P. Hall

SYSTEMATIC LIST OF SPECIES RECORDED IN THE AREA

RED-THROATED DIVER (*Gavia stellata*):- This, the commonest of the divers, is recorded annually offshore, particularly during the winter and spring months. Records span between 17th September (in 1986) to 23rd May (in 1985) but the largest numbers occur between November and April.

Most records are of singles or small groups, usually up to 4, seen at any place offshore. Most of the larger parties, however, have been noted off Widewater beach where 30 were seen on 4th November 1957 and 38 were feeding during January 1982. Very occasionally individuals have been seen on other coastal waters such as the lagoons at Brooklands, Widewater and Hove, on Southwick Canal or on the River Adur.

The numbers noted vary from one year to the next; in the 1950's there were frequent reports offshore in the winter but during the next two decades fewer were seen. Larger numbers were again reported in the winters in the early 1980's. Undoubtedly some of the fluctuations in numbers are merely reflecting the time spent by observers watching the sea. Between 1978 and 1986 about 14% of all the divers seen flying past the shore have been positively identified as this species. The following table shows this proportion to be considerably higher during the winter months suggesting that most of the divers seen offshore at this period are Red-throated Divers. The table also shows movements in both directions during the winter but a mainly eastward movement in the spring.

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	69	49	29	52	26	—	—	—	—	1	13	23
No. flying west	71	26	1	2	4	—	—	—	1	4	30	29
% of all divers	23%	30%	12%	7%	6%	—	—	—	25%	11%	19%	7%

The large coastal movements of divers are outlined under "Diver species" but it is likely that most of these movements are mainly of this species, however, the largest number specifically identified was 29 passing westward on 15th February 1985.

BLACK-THROATED DIVER (*G. arctica*):- Most records are of singles or small groups, of up to 6, seen offshore during the winter and spring; the earliest recorded on 21st September 1983 and the latest on 6th June 1985. Singles have been seen on Southwick canal in January 1958 and 1963 and at Brooklands in December 1960 but the majority are noted offshore. The following table shows the monthly distribution of records and shows this species to be scarcer than the Red-throated Diver.

The monthly totals from seawatching at Worthing between 1978 and 1986, and the totals noted on the sea since 1953

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Totals on sea	11	5	2	13	3	—	—	—	—	—	2	1
No. flying east	10	4	2	38	42	1	—	—	—	—	1	4
No. flying west	5	2	1	—	—	—	—	—	—	—	—	1
% of all divers	2.4	2.4	1.2	5.2	7.8	—	—	—	—	—	0.4	0.7

The table also shows a marked eastward movement in the spring and suggests that this species is marginally more common in May than the Red-throated Diver. The largest movement noted was 9 on 4th May 1986.

GREAT NORTHERN DIVER (*G. immer*):- a scarce migrant and winter visitor with records of 20 individuals noted in 13 years since 1953. The records all fall between 24th January (in 1960) and 30th May (in 1963) and the monthly distribution is shown in the following table:-

January	February	March	April	May
3	4	—	2	11

The highest annual total of 4 in 1963 included 3 off Hove on 30th May. Since 1979 one or two have been recorded annually, mainly noted in May during prolonged sea-watches and often in full summer plumage. Most have been recorded offshore but singles have been seen on Southwick Canal in February 1954, on the River Adur in January 1960 and in Shoreham Harbour in January 1963.

DIVER SPECIES:- Divers in flight are notoriously difficult to specifically identify and most seawatching records have grouped all three species together under this heading. As most of the systematic sea watching was done in the late 1950's and between 1978 and 1986 most of the records come from these periods, however, there are a few isolated records from other years including 36 passing eastward off Widewater on 6th March 1965. Divers have been recorded between 14th September and 9th June (both in 1985) but most are seen between December and May.

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	436	127	249	713	502	3	—	—	10	92	300	
No. flying west	184	125	10	22	34	2	—	—	4	37	137	422

The table shows that between September and December westward movement exceeds eastward, during the winter months movements occur in both directions and that after March only 4% are noted moving westward.

Although most are seen in the spring the figure 1 shows the rates of passage to be greater in the winter months. During the early 1980's large numbers of divers and auks were noted off the Sussex coast and during this period some good movements were noted including 74 westward off Worthing in 3 hours on 28th December 1981, 81 eastward there in 4 hours on 30th December 1981, 107 eastward there in 2 hours on 3rd January 1982, and 134 eastward in 3 hours on 12th January 1982 at Ferring.

Light onshore winds during or just after cold weather seem the best conditions to see these winter movements. During the spring moderate to fresh southeasterly winds bring most divers within sight of land and during such conditions on 23rd March 1984 the largest movement was noted when 234 passed eastward in 7.5 hours at Brighton.

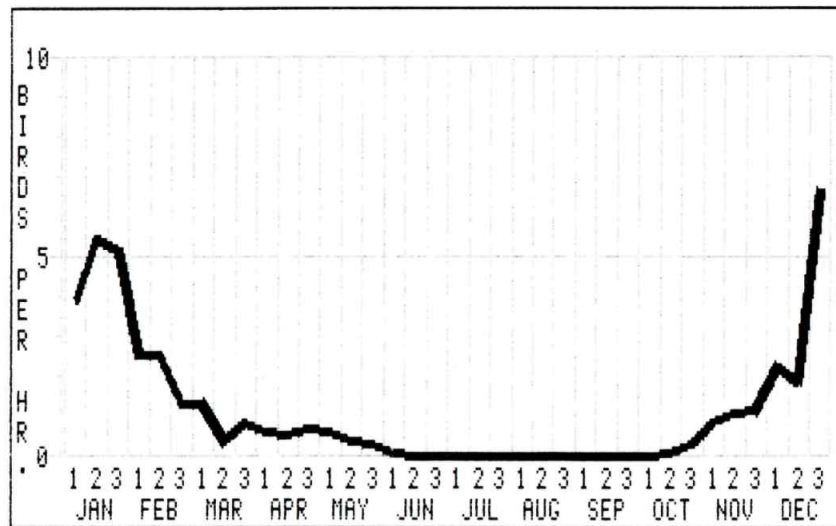


Fig. 1. Rate of passage of divers in 10 day periods at Worthing (1978-1986).

LITTLE GREBE (*Tachybaptus ruficollis*):- The Little Grebe or Dabchick has been recorded throughout the year but, although it is the only grebe species to have bred in the area, the breeding records are sporadic. Breeding sites have included Wiston Pond, Steyning Mill Pond and small open waters at Goring, Clayton and West Durrington. Apart from the last mentioned site there have been no such records since 1980. A pair displayed at the Shoreham sanctuary in the spring of 1961.

It is most frequently encountered as a wintering bird with regular gatherings at Widewater where up to 20 birds can be seen particularly during November and December and on the River Adur at Shoreham where six birds can regularly be counted but 19 were present on 30th November 1973 and 14 counted on 20th January 1985.

Other winter sites have been Brighton marina, Brooklands (a maximum of 5) and Southwick Canal. Unlike the other grebes the Dabchick is seldom seen on the sea.

GREAT CRESTED GREBE (*Podiceps cristatus*):- This familiar grebe is recorded in all months of the year but is most numerous as a winter visitor to the coast. The largest concentrations have occurred off Brighton where 145 were seen on 26th February 1970. Although they are regularly noted further west the numbers are smaller with 18 offshore at Widewater on 15th January 1982 being the largest gathering.

Small numbers occasionally frequent Brooklands pool and are seen on the River Adur at Shoreham but, apart from 8 on Southwick canal on 6th March 1986, seldom are more than three birds seen together.

There does not appear to be a suitable inland water in the area capable of supporting a breeding pair although the great Crested Grebe is well distributed throughout Sussex (Hughes 1986).

It is regularly noted passing the shore on sea-watches at Brighton marina, Widewater and Worthing; most probably involved are birds moving from one local feeding area to another but the following table showing the totals seen from Worthing between 1978 and 1986 suggest there may be a small eastward migration in the spring and westward passage in the late autumn and early winter.

The monthly totals from seawatching at Worthing between 1978 and 1986

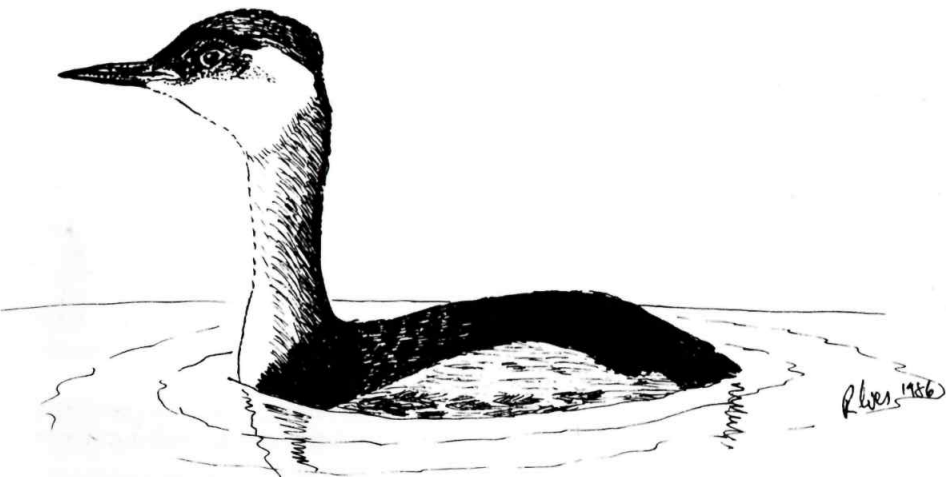
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	14	30	27	22	8	—	—	—	—	4	9	9
No. flying west	28	39	13	13	2	1	—	—	—	7	10	25

RED-NECKED GREBE (*P. grisegna*):— The records show about 40 individuals have been seen in the area between 1957 and 1986 with birds appearing annually since 1979. All the sightings have occurred between 20th September (in 1981) and 19th April (in 1985). The best years were 1970 when seven were recorded, including three on the River Adur near the Toll Bridge on 1st January, and in 1979 when eight birds were found with four offshore at Widewater on 5th March.

Most records are from the sea but birds have occurred at Brooklands on three occasions and in Brighton marina, Shoreham harbour and the Adur. Monthly totals are as follows:—

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

As the records show it is most numerous in the hard weather months in the early part of the year and on spring migration.



SLAVONIAN GREBE (*P. auritus*):— Although recorded regularly during the winter and spring this small grebe has only been recorded annually since 1977 and this is mainly due to the increase in sea-watching in this area. As many as nine were recorded in one year as long ago as 1958 and it can be looked for almost anywhere near or at the coast mainly between November and April. The earliest, however, was seen off Worthing on 5th August 1986.

Most records are of singles although five were seen together offshore at Widewater on 20th December 1975 and four have been observed on at least two other occasions. The distribution of the 85 records between 1957 and 1986 reveal, like the Red-necked Grebe, that this species is most frequently seen during spells of cold weather in the early months and again in April on migration.

BLACK-NECKED GREBE (*P. nigicollis*):— The scarcest of the five grebe species to have visited this area, the Black-necked Grebe was only recorded once in the 1950's, off Widewater on 2nd February 1956. Throughout the 1960's and early 1970's it remained a rarity only being recorded in 1961, 1963, 1968, and 1969 but since 1978 there have been annual records. A total of about 30 birds have been seen between 4th September (in 1970 at Brooklands) and 14th May (in 1986 off Worthing). In two years six have been recorded; in 1980 this included three together off Ferring on 12th April and in 1986 there were five in summer plumage off Worthing on 14th April. The coincidence of these dates should not escape notice.

FULMAR (*Fulmarus glacialis*):— Records of this species not only reflect the increased time spent sea-watching since the mid 1970's, but also show a steady rise in the number of observations which clearly have coincided with the rapid growth of the Fulmar population in northern Europe and its colonisation and eventual breeding on the Sussex cliffs in 1976. During the 1950's and early 1960's only one or two were seen offshore in most, but not all, years. These observations, mainly between April and June, have increased dramatically with 1049 being recorded off Worthing alone during 1986 which included the largest movement in a single day when 82 passed east and 42 west on 4th May 1986. This was a day of strong onshore winds which is typical for observing larger numbers passing by the shore (Newnham 1986).

Figure 2 shows the rate of eastward and westward passage at Worthing by combining all the observations between 1978 and 1986. Overall 55% are seen moving westward and it is interesting to note how the graph shows a similar pattern with westward movements slightly exceeding eastward throughout the year. At Worthing Fulmars are scarce between December and March and have not been recorded during October or November. However, at Brighton marina more are seen between December and March and observations there have revealed that most are seen flying eastward with a mere 14% moving westward. Some of the variation in records is possibly due to the close proximity of the breeding cliffs to Brighton.

Fulmars are mostly noted over the sea but in recent years there have been several sightings overland near the coast, but singles over Mill Hill on 9th May 1985 and at Storrington on 9th June 1986 were exceptional.

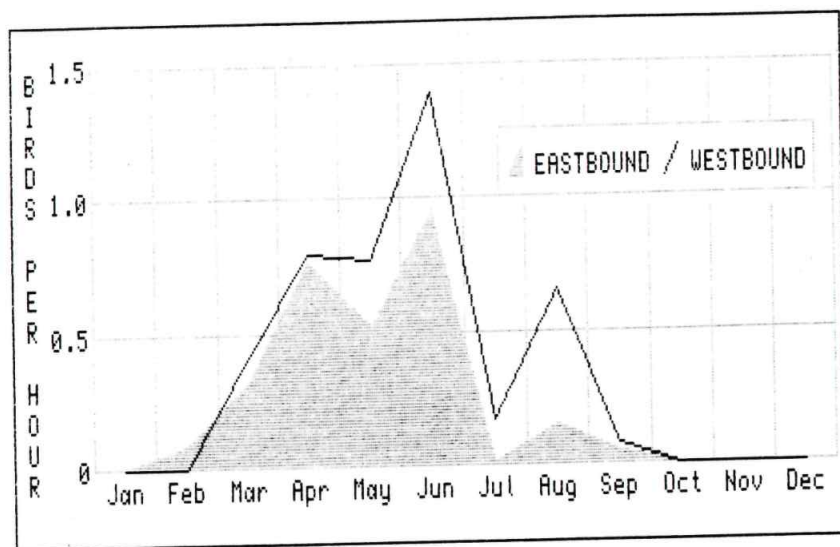


Fig. 2. Rate of eastward and westward passage of Fulmars in each month at Worthing (1978-1986).

CORY'S SHEARWATER (*Calonectris diomedea*):- Three have been recorded during the spring. Singles passed westward at Hove on 12th April 1979 and at Worthing in a severe gale on 3rd May 1981 and one sat on the sea off Brighton marina on 3rd May 1984.

SOOTY SHEARWATER (*Puffinus griseus*):- There have been four records and, by contrast with the above species, they have all been in autumn. Singles passed eastward at Hove on 30th July 1980, westward at Worthing on 21st September 1983, west at Widewater on 24th October 1984 and finally west at Worthing on 9th November 1986.

MANX SHEARWATER (*P. puffinus*):- The first was seen flying westward at West Worthing on 7th September 1957 but there were no further records until 1975 since when sightings have been annual. The numbers recorded each year are shown in the following table:-

1957	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
1	2	1	1	1	12	29	15	8	99	161	33	16

This pattern of more records in recent years is a reflection of the increased hours spent sea-watching and the greater use of telescopes to enable identification of distant birds. Most shearwaters are seen in strong or gale force onshore winds and the largest movements at Worthing of 82 flying westward on 2nd May 1983 and 91 passing eastward and 47 westward on 22nd May 1984 were in such conditions. The following table high-

lights May as the peak month but sightings span from 24th March (in 1984) to 27th November (also 1984). The only record outside these dates was one found long dead at Brighton on 11th January 1986.

Total number of Manx Shearwaters recorded between 1954 and 1986

	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
No. flying east	—	6	134	12	7	1	2	1	2	165
No. flying west	5	15	157	4	1	13	11	2	3	211

The largest movement seen in the autumn was 11 flying westward at Worthing on 11th August 1985. Most records involve the race "puffinus" but 11 individuals, spread through the months, were considered to be of the race "mauretanicus".

STORM PETREL (*Hydrobates pelagicus*):- There are two old records; one shot near Shoreham in 1879 and the other picked up dead near Lancing College on 11th December 1929. Subsequently five records occurred in the autumn. The first was seen flying eastward into a south-easterly gale at Brighton on 4th November 1951. One over the Adur at Shoreham on 3rd November 1952 and one picked up alive in the grounds of the Royal Pavilion in Brighton on 13th November 1959 preceded a long absence of 21 years. Singles at Shoreham beach on 4th September 1980 and flying westward at Brighton marina on 17th October 1983 are the most recent records.

LEACH'S PETREL (*Oceanodroma leucorhoa*):- There are only a few records of this rare visitor. Knox reports specimens taken after storms from Lancing, Shoreham and Brighton. One near Shoreham on 5th May 1894 and a remarkable record of one caught in a lark net near Beeding cement works in bright and calm weather on 17th September 1907. One seen 1 km off Brighton on 12th September 1982 is the only recent record.

GANNET (*Sula bassana*):- Recorded regularly offshore and the numbers recorded in each year vary according to the time spent watching the sea. Autumn watching was most popular in the late 1950's and then the peak counts off Widewater were 80 on 6th October 1956, 79 flying westward on 29th September 1957 and 92 flying westward on 7th September 1961. More consistent watching between 1978 and 1986 has shown more clearly the timing of Gannet movements offshore and these are shown in the diagram (figure 3).

The graph shows a gradual increase in the rate of passage through the spring with easterly movements marginally greater than westward until June, thereafter most passage is in a westerly direction. Overall, at Worthing, 56% are noted moving westward (47% during the spring months) whereas observations from Brighton marina only reveal 26% moving westward in the spring, a difference described in more detail by Newnham (1986). Many of the birds noted in the summer are immatures; the movement of 131 eastward at Worthing on 21st June 1985 comprised mainly young birds.

This, and other large movements, have been noted on days with fresh to strong south winds; examples being 173 flying eastward on 4th May 1986 and 120 westward on 10th

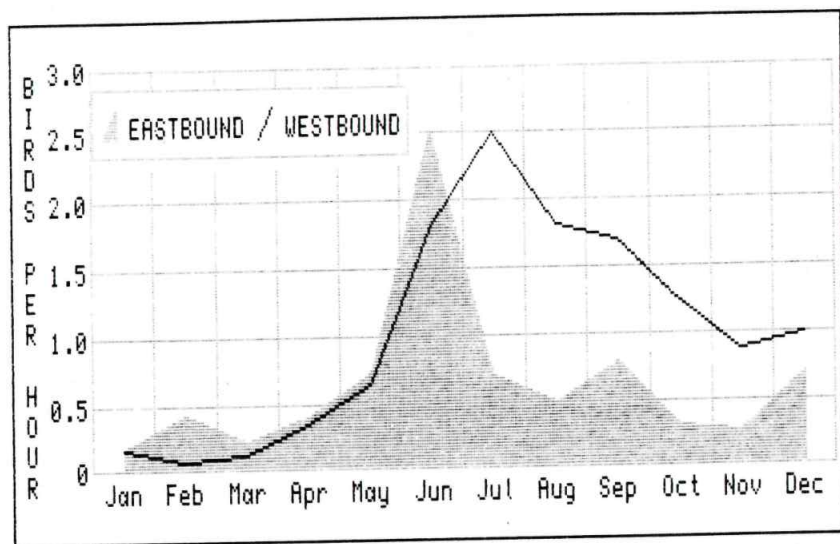


Fig. 3. Rate of eastward and westward passage of Gannets in each month at Worthing (1978–1986).

May 1986 at Worthing, and at Brighton totals of 103 eastward on 15th May 1985 and 100 eastward on 27th December 1979.

Apart from singles feeding in the River Adur in September 1930, over Preston Park on 22nd February 1966 and at Wiston Pond on 30th September 1969 all the records are from the coast.

CORMORANT (*Phalacrocorax carbo*):- Regularly recorded offshore and in the Adur Valley, the records show it to be most numerous in the winter. Small groups can be seen fishing at any place along the coast but they gather at traditional sites to roost. Pylons and sewage outflow pipes are usually used and peak counts include 26 on East Worthing pipe in 1971, 34 at the Fishersgate pylon roost in November 1974, 36 in Shoreham harbour in April 1974, 32 at both Southwick and Goring beach during the winter in 1981 and 30 at the Adur Levels roost near Steyning in April 1985. A full winter survey of this species was done for the British Trust for Ornithology in the winter 1985/86 and the results, revealing between 400 and 600 Cormorants in Sussex (Watson 1986), put the local counts into perspective.

During the early morning large numbers of Cormorants are noted moving westward at Brighton marina, presumably dispersing from a large roost east of Brighton. Typically most are seen in the winter with example counts taken from 1985 showing:-

Jan.	Feb.	Mar.	Apr.	May	June
101	85	48	37	30	5

This movement does not reach Worthing where offshore movements form no pattern and the totals logged between 1978 and 1986 are a mere 1070 flying westward and 926 eastbound. Occasional parties are, however, noted passing Worthing, the most notable being a group of 30 on 18th April 1981 which turned inland and disappeared north over the town. The only other large movements were seen off Widewater in 1957 when a total of 700 flew west in the early mornings between 28th September and 13th November; the maximum was 46 and these too may have been dispersing from a roost.

SHAG (*P. aristotelis*):- This regular, but not numerous winter visitor, has been recorded in 23 of the years between 1954 and 1986 with the peak clearly in 1985 when possibly 25 birds were seen. The following table showing the total number of records in 5 year periods shows it was scarcer in the 1960's and 1970's.

	1956–1960	1961–1965	1966–1970	1971–1975	1976–1980	1981–1985
Total	20	9	1	6	15	48

Although there have been records from several coastal sites most of the records during the 1950's were from the area of Southwick canal or Shoreham harbour whereas the majority in the 1980's have been seen at Brighton marina where the peak counts were of 16 on 16th January 1985 and 7 on 30th November 1985. The following table of approximate monthly totals reveals that it has been recorded in each month but most occur in winter.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
29	37	24	14	9	1	1	1	7	8	11	16

An individual found dead at Southwick in 1954 was ringed as a pulli the previous year on the Farne Islands.

BITTERN (*Botaurus stellaris*):- A rare winter visitor encountered in harsh weather with most of the records coming from the Adur Valley. Prior to 1953 there are records of four being shot; between 1953 and 1971 a further four were noted during the winter near the Toll Bridge, at Coombes and on Shoreham airport. One was seen flying over No-Man's Land on 7th November 1976 and the most recent record was of one found exhausted near Storrington on 30th January 1985.

AMERICAN BITTERN (*B. lentiginosus*):- The only record is of one caught near Hollingbury Camp, Brighton on 24th October 1909.

LITTLE BITTERN (*Ixobrychus minutus*):- There are only three records of this rare vagrant; an immature male collected at Hove on 3rd September 1894, an adult male observed at Steyning Mill Pond from 30th April to 5th May 1966 and an elusive female seen at the Sanctuary on 1st and 2nd June 1986.

NIGHT HERON (*Nycticorax nycticorax*):- The sole record of an immature seen near Lancing College on 12th December 1954 may well be of an escaped bird.

SQUACCO HERON (*Ardeola ralloides*):- One shot between Steyning and Henfield about 30th September 1934 and one seen at Brighton on 29th April 1951 are the only two records.

CATTLE EGRET (*Bubulcus ibis*):- One seen feeding amongst cattle on the water-meadows at Lancing on 28th April 1962 is the only record.

LITTLE EGRET (*Egretta garzetta*):- One seen passing east offshore at Portslade on 7th May 1983 is the only record.

GREY HERON (*Ardea cinerea*):- This, the only common heron, is a breeding resident and passage migrant. The local heronry, in a private wood at Wyckham on the Adur Levels, has supported between eight and ten pairs in most years since 1951 with a maximum count of 17 nests in 1979.

Heron is observed in varied habitats throughout the year but are most regularly encountered in wetland areas such as the River Adur, the ditches surrounding Shoreham airport, Widewater and in recent years at New Salts Farm. At this site a regular roosting flock of 12 or more gather on the fields during the autumn months but the largest count in the area was of 20 at the Adur Levels in February 1980. Small numbers have been observed flying high over the Downs and coastal towns and seen coasting during seawatches; these invariably are single birds but a flock of 11 flying east at Brighton marina in May 1983 was remarkable.

The records suggest there has been an increase in numbers seen during the 1980's despite a succession of harsh winters which are known to adversely effect the Heron population.

PURPLE HERON (*A. purpurea*):- This vagrant has only been recorded on four occasions, the first being shot at Worthing in September 1848. None were then noted until 1980 since when singles were seen flying over Steyning in the company of two Grey Herons on 21st September 1980, over Lancing on 28th May 1981 and flying offshore at Brighton marina on 7th May 1984.

WHITE STORK (*Ciconia ciconia*):- Early records include one being shot near the Toll Bridge and a small party of three flying eastward over the River Adur on 19th August 1929. The subsequent four sightings, all after 1978, involved single birds seen over Goring on 31st December 1978, probably the same noted in the Adur estuary on 3rd January 1979, flying westward over the Sanctuary on 24th April 1982 and over Sompington on 1st May 1983.

GLOSSY IBIS (*Plegadis falcinellus*):- One flew over the water meadows near the Shoreham sanctuary and departed eastwards over Mill Hill on 18th September 1986. This is the only record for this area.

SPOONBILL (*Platalea leucorodia*):- Singles were shot at Shoreham in September 1856 and March 1909. The other records fall between 1956 and 1971 when nine birds were seen. In the Adur Valley two were noted on 8th October 1956, one on 6th September 1957 and two on 29th November and 5th December 1961. Three flying westward offshore on 18th September 1958 and one feeding in shallow water offshore at Worthing on 2nd September 1971 complete the records.

MUTE SWAN (*Cygnus olor*):- A resident and possible winter visitor which has shown no apparent change in status over many years. The species breeds on suitable waters and non breeding birds can be found in the Adur Valley throughout the year. Two recent studies organised jointly by the British Trust for Ornithology and the Wildfowl Trust revealed the following results.

	Nests	Other territorial pairs	Non-breeding birds	Total
1978	5	4	18	36
1983	6	2	59	75

The larger number of non-breeding birds in 1983 include a herd which, in recent years, has spent the summer near Beeding cement works but was not recorded in 1978. The maximum number counted in this herd was 61 on 7th July 1986. During the winter months the largest herd occur on the upper Adur Levels where 53 were counted in 1986.

A smaller party regularly frequents Widewater and the following monthly counts for 1985 are typical of recent years.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
15	15	12	11	2	2	—	—	13	14	12	21

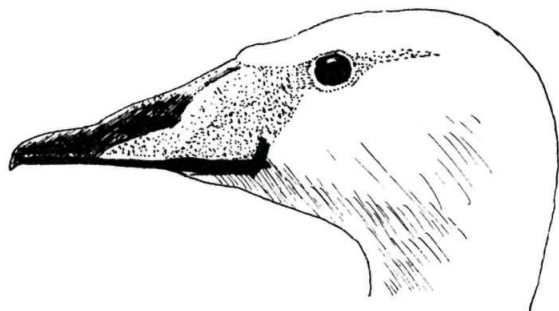
Between 1958 and 1986 nearly 300 have been ringed; the majority during a study in the 1960's. Many short movements both along the coast and inland as far as Kew have been noted but longer movements to the Netherlands (in December 1963) and East Germany (in February 1969) are unusual.

BEWICK'S SWAN (*C. columbianus*):- A winter visitor and passage migrant which has been more regularly recorded since 1978. This is clearly seen in the following table which shows the numbers seen in each year.

1963	1970	1971	1972	1973	1978	1979	1980	1982	1983	1984	1985	1986
2	6	8	8	4	12	26	47	5	9	3	26	39

All the records fall between November and early March and most are recorded on the upper Adur Levels particularly during cold weather or when the levels are flooded. These probably are part of the wintering herd in the Arun Valley and the largest count was 45 between 3rd and 10th February 1980. Elsewhere the largest parties have been eight flying westward at Worthing on 20th January 1972, 15 passing eastward over Ferriing on 2nd March 1980 and 15 flying north-westward over Brighton on 9th January 1985.

WHOOPER SWAN (*C. cygnus*):- A scarce and very irregular winter visitor to the area with 49 being recorded in just six different years. The earliest date recorded was 13th November 1971 when two were seen on the Adur Levels and the latest, 11th April, was recorded by a long staying immature which associated with Mute Swans on the River Adur during the severe 1963 winter. This bird was ringed during its stay and was subsequently shot during February 1964 in Sweden.



The first known record for the area was in 1895 when three swans were shot near the Shoreham railway bridge by the plumber and carpenter from Lancing College. After they were eaten a head was identified by the Brighton naturalist Pratt!! The largest party recorded was 18 which settled on the Adur on 12th February 1958 before continuing their flight westward. The remaining sightings were of up to 9 on Shoreham airport between 3rd and 16th February 1963, 5 flying northward over Worthing on 15th January 1966 and 6 over the Adur Levels on 4th March 1979.

BEAN GOOSE (*Anser fabalis*):- A very rare winter visitor which has only been recorded in two years. During March 1964 a party of 7 were seen grazing the fields around and resting on Wiston Pond. The other two sightings were during a large influx into Sussex during early 1979; a flock of 22 flew over Lancing on 11th February and 4 were seen on the Adur Levels on 3rd March.

PINK-FOOTED GOOSE (*A. brachyrhynchus*):- The six records show this to be a rare winter visitor. A flock of 20 flying east at Brighton on 4th April 1961, two at Coombes on 31st January 1963, one on Shoreham airport on 16th February 1969, three flying over Lancing on 18th December 1977 and four flying east offshore at Brighton on 1st January 1979 were all overshadowed by the most recent sighting of 32 flying southeast over Brighton on 10th February 1985.

WHITE-FRONTED GOOSE (*A. albifrons*):- This species is mainly seen flying over the area but during severe weather it has been recorded on permanent grassland either on

the Adur Levels or in the lower Adur Valley particularly on Shoreham airfield where 90 remained during wintery weather between 6th January and 2nd February 1963.

Apart from an October record from Shoreham in 1885, three March records and two flocks heard calling over both Findon and Lancing during the evening of 9th April 1984 this species is seen between November and February and the following table reveals January to be the peak month.

Total number of White-fronted Geese recorded between 1954 and 1986

Nov.	Dec.	Jan.	Feb.	Mar.
55	260	464	235	12

Not recorded in the years 1954–1955, 1958–1961, 1965–1968, 1970 and 1973–1974 but recorded annually since 1975. The largest number seen was 290, in two flocks of 240 and 50, flying over Hove on 18th February 1979. It seems likely that most of the birds seen in this area are part of the flocks wintering either in the valleys of the Hampshire Avon or the Severn.

GREY-LAG GOOSE (*A. anser*):- Like all the grey geese this species is only sporadically recorded with about 114 birds seen in 14 of the years between 1953 and 1986. The following table, showing the minimum monthly totals, demonstrates that most are seen in the winter and spring months with the latest three flying eastward at Brighton on 15th May 1984. Records are mainly from the coast or over the coastal plain with only 27 recorded inland. A single record of 9 flightless birds on the Adur Levels in early July 1985 and three different sightings in September are noteworthy.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
12	49	5	12	16	—	9	—	12	—	—	8

There has been a notable increase in recent years as 90 of the total have been recorded in the 1980's and the largest flocks occurred in 1985 when 34 flew east at Widewater on 9th February and 36 were seen at Lancing on 13th February. It is probable that most of the Grey-lag Geese seen in this area are from the feral populations which have become established in southern England (Hughes 1986) but some seen flying along the coast may be truly wild birds migrating between the Baltic States and southern Europe.

SNOW GOOSE (*A. caerulescens*):- Three adults and four immatures of the white phase which flew in from the sea at Ferring and headed inland on 2nd March 1984 may well have had wild origins whereas a blue phase individual which flew west along Worthing beach on 3rd June 1985 had undoubtedly escaped from a wildfowl collection.

CANADA GOOSE (*Branta canadensis*):- This species was probably first introduced into Sussex in the second half of the 19th century and has subsequently spread and flourished (Hughes and Watson 1985). Prior to 1972 the only three records in the area were of three on the sea at Lancing on 7th April 1953 and singles flying north-west over Worthing beach on 7th May in both 1966 and 1969.

In 1972 three adults and an immature were seen at Wiston Pond on 23rd July and three immatures were there on 24th June in 1973. Since 1972 the species has been recorded annually with numbers reaching a peak between 1979 and 1983. The greatest numbers are seen on the Adur Levels, and are probably birds coming from the large wintering population in the Arun Valley. The largest flock, of 200, was seen on the upper Adur Levels between 31st December 1979 and 5th January 1980. On 1st February 1979 a flock of 50 flew over Goring and spent most of February at Patching Pond, an unusual location for this species. The following table shows the numbers seen each year.

1958	1966	1969	1972	1973	1974	1975	1976	1977
3	1	1	7	4	11	50	2	16
1978	1979	1980	1981	1982	1983	1984	1985	1986
19	317	365	24	202	121	2	24	6

BARNACLE GOOSE (*B. leucopsis*):- This rare visitor has only been recorded on four occasions, during severe winter weather. One was shot at Shoreham on 10th January 1894, 8 were seen on Shoreham airfield on 13th February 1963, 13 there on 18th December 1981 and a single bird was on the fields at Goring Gap on 11th November 1982.

With this species the possibility of birds escaped from wildfowl collections cannot be totally dismissed and several other records were considered to be of escaped birds.

BRENT GOOSE (*B. bernicla*):- This, a frequent winter visitor, is seen in large numbers passing the shores on both spring and autumn migrations. The records show a notable increase from the mid 1970's extending into the 1980's. This increase, like many species recorded by seawatching, is partly due to the increased interest in observing offshore passage but also reflects the substantial increase in the population of Brent Geese wintering in Britain. The report for 1958 noted "more than usual when 105 flew eastward between 16th March and 5th April" yet in 1984 a total of 9883 were seen flying eastward past Brighton during the spring.

Figure 4 shows that the eastward coastal movement starts early in the year but reaches a peak in mid and late March. The largest movement was noted on 21st March 1985, a day with southeasterly winds, when 3218 passed Worthing and 3785 were seen at Brighton and included a single flock of 600 birds. Spring movements diminish throughout April and May with the latest recorded from Brighton on 20th June in 1983. The earliest autumn record is of 9 seen flying east at Worthing on 19th August 1966 but in most years the first autumn flocks are seen in late September.

This autumn movement gains momentum throughout October and usually reaches a peak in late October or early November. At this time peaks of westward movement include 2306 on 23rd October 1982 and 2566 on 2nd November 1986. The main autumn movements usually occur during or just after a period of northeasterly winds or at the onset of cold weather and on days when large coastal movements are seen there have been several large flocks noted moving south or southwestward overland.

Brent Geese are occasionally seen feeding either in the Adur Valley, at Widewater or near Ferring Rife. Prior to 1973 there are only 3 such records but as the following table

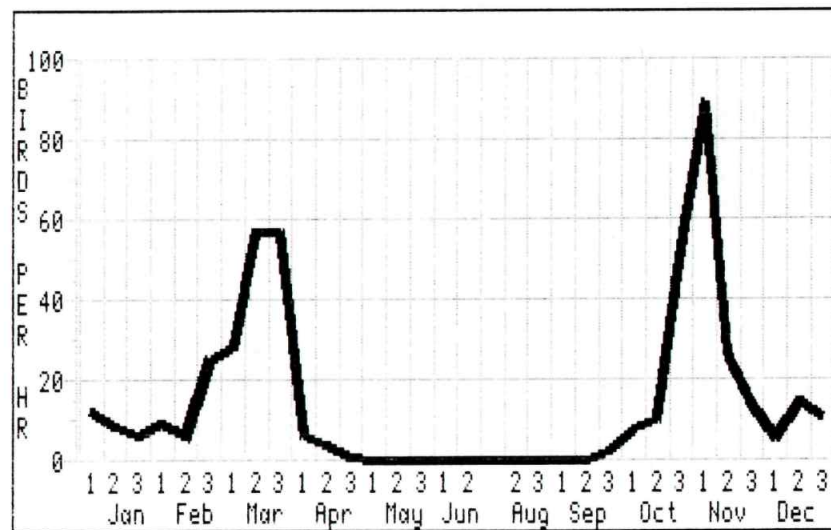


Fig. 4. Brent Geese seen in each hour of observation in 10 day periods at Worthing (1978-1986).

shows more have been noted in the 1970's and 1980's.

	1953-1959	1960-1969	1970-1979	1980-1986
No. recorded feeding	1	6	67	141

The table includes a flock of 45 grazing on the airport in February 1979 and 101 in a field next to Ferring Rife in January 1985.

Most of the records are of birds belonging to the dark-bellied race (*B. b. bernicla*) but 4 individuals of the pale-bellied race (*B. b. hrota*) have been seen at Goring on 26th November 1978, passing Worthing and Widewater on 18th January 1982, and at Worthing on 24th April 1983 and 19th November 1984.

SHELDUCK (*Tadorna tadorna*): This species has been recorded annually and in each month of the year. The following table reveals how most are seen passing the shore with a predominantly eastward movement during the spring and summer and a greater westward movement during the autumn and winter. Many of the eastbound spring birds are seen in the evenings during settled weather in May but the largest westward movements have been associated with severely cold weather and examples include 118 on 1st January 1979, 518 on 15th December 1981 and 125 on 20th November 1985.

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	43	17	184	320	706	23	29	61	7	17	3	16
No. flying west	536	109	77	313	349	1	1	21	34	122	445	1016

Likewise the observations from the River Adur are most frequent in the winter months with the largest flock of 46 being seen in February 1979.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total on Adur	194	197	90	3	11	6	—	1	—	11	11	46

There are occasional winter records from Ferring Rife, Brooklands, Widewater, Adur Levels and near Upper Beeding where 35 were recorded on 17th November 1983. In 1962 a pair bred successfully near Coombes and the records suggest that breeding may have occurred in other years in the early 1960's but there have been no breeding records subsequently.

WOOD DUCK (*Aix sponsa*): This species is not fully admitted to the British list but a small and fluctuating feral population exists in South East England. However, the single drake on Brooklands in January 1982 was probably an escape from a wildfowl collection.

WIGEON (*Anas penelope*): A regular winter visitor and passage migrant. The highest numbers are recorded during severely cold weather particularly when other favoured feeding areas of Britain and Europe are snow covered. During such spells Wigeon are regularly recorded on the Adur Levels and in the lower Adur Valley particularly on New Salts Farm and Shoreham airfield. The largest influx to the area was during January of 1985 when at least 3000 were noted including 735 flying westward at Worthing on 7th January, 950 on the Adur Levels and 250 by Ferring Rife on 13th January and a flock at New Salts Farm which reached 390 by 18th January. Prior to 1985 the largest flocks had been of 350 on Shoreham airfield in February 1963 and 400 at Old Salts Farm on 11th January 1970.

It is the sea-watching records from Worthing which provide the most regular records of this species. Here observations fall between late August and mid April and the following table, showing the total numbers seen in each month for the years 1978–1986, reveals most are seen flying westward invariably at the onset of cold winter weather.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	126	72	335	5	—	—	—	—	7	50	51	16
No. flying west	1695	400	2	—	—	—	—	8	47	53	720	1106

GADWALL (*A. strepera*): A scarce, but increasingly regular, winter visitor and passage migrant. Although Gadwall have been seen as early as 26th September the majority of wintering records come between January and March with a small spring passage noted from mid-March until early May.

First recorded in the area around 1890 when a single was shot near Shoreham but there were no further sightings until 30th September 1960 when two were seen at Widewater. Apart from four on Wiston Pond on 1st January 1964 and one flying east at Hove on 7th October 1966, there were no more records until 1979 since when it has been recorded more regularly and the annual totals are shown in the following table:-

1979	1980	1981	1982	1983	1984	1985	1986
5	8	9	—	—	16	40	3

The largest flock of 23 was recorded offshore at Widewater on 4th January 1985 during harsh weather conditions. During 1986 three remained in the vicinity of New Salts Farm all the year but these may have been part of the feral population established by the Wildfowl Trust at Arundel.

TEAL (*A. crecca*): A common winter visitor and passage migrant which occurs mainly in its favoured habitat of wet grassland as found on the Adur Levels. The records suggest there has been a decline in numbers on these levels, probably associated with improved drainage, and now large flocks are only encountered for shorter periods following heavy rain and flooding. In most years the peak numbers have occurred in January and the following table shows the peak counts for eight years.

1970	1971	1972	1974	1980	1981	1982	1984
600	200	200	400	300	220	425	160

Between August and early May small numbers are recorded annually passing offshore. The monthly totals seen passing Worthing between 1978–1986 are shown in the following table and, although the numbers are small, show predominantly eastward movement in the spring and westward flights in the autumn and winter.

Breeding has not been confirmed in the area although in 1986 a pair were present in suitable habitat on the Adur Levels between April and June.



MALLARD (*A. platyrhynchos*):- A common resident, passage migrant and winter visitor. As a breeding bird it is likely to be found in any suitable wet habitat with marginal vegetation but a pair nesting on Steyning Round Hill in 1982 were well away from water. In 1976 it was estimated that between 10 and 15 pairs nested in the lower Adur Valley and in 1983 a breeding survey on 55 ha of levels near Small Dole revealed 5 pairs so probably between 20 and 30 breed in the recording area.

During the summer months small flocks, totalling 20 to 50 individuals, have been seen regularly flying eastward low over the Goring roof tops at dusk.

In late summer the population is regularly augmented by the release of hand-reared birds by wildfowlers resulting in quite large flocks being recorded in August and September. In early September 1983 a flock of 97 regularly fed on stubble on Steyning Round Hill and in September 1986 a stubble field near Wiston held 56 birds.

During the winter Mallard are seen in any suitable wet habitat but usually concentrating on New Salts Farm, Shoreham airfield or the Adur Levels where the largest counts were 250 on 11th January 1970 and 200 on 2nd January 1979.

Like other wildfowl, coastal movements are noted with an eastward passage in the spring months and a westbound movement during the autumn and winter. The scale of this movement can be judged from the following table which sums the records from Worthing for each month between 1978 and 1986.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	7	11	47	31	32	7	—	4	2	8	—	10
No. flying west	62	6	2	4	4	—	—	1	1	35	116	36

PINTAIL (*A. acuta*):- An uncommon winter visitor and passage migrant. Between 1953 and 1976 the species was only recorded in three years; in 1963 when 23 flew eastward past Hove on 8th March, 1968 and 1970. Since 1977 Pintail have been recorded annually with most sightings being of passage birds seen from the shore. The following table shows the monthly totals seen between 1978 and 1986 at Worthing and, like other wildfowl, the movement is mainly eastward in the spring and westward during the autumn and winter. The main wintering area for this species in Sussex is in Chichester Harbour and birds seen passing Worthing may be flying to or from this site.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	11	9	45	20	7	—	—	—	2	15	—	4
No. flying west	42	1	—	2	—	—	—	—	1	16	40	14

The largest flock was 25 flying south-westward over the Adur on 24th November 1985 and other records of interest include six flying over Chanctonbury on 26th February 1981, five flying east at Cissbury on 17th February 1985 and a pair at Washington sand pits on 7th May 1984.

GARGANEY (*A. querquedula*):- A scarce migrant which, following the national trend, has declined in recent years. The total of 60 individuals have been recorded between 1954 and 1986 and apart from three on the Adur Levels on 31st July 1976 all the records are from the spring. This may be partly due to the relative ease of identifica-

tion of spring drakes compared with juveniles and birds in eclipse plumage in the autumn. The spring records span from 10th March (1979) when a pair was seen at Striven's Reed Bed to 31st May (in 1982) when one flew east at Brighton. The numbers seen in each year are shown in the following table.

1958	1960	1962	1967	1969	1971	1976	1978	1979	1980	1982	1983	1984
3	5	2	1	4	10	3	4	11	6	6	1	4

Since 1971 23 individuals have been recorded from the Adur Levels, where it is often noted in pairs, and 22 have been noted flying eastward along the coast between 24th March and 31st May.

SHOVELER (*A. clypeata*):- An uncommon winter visitor and passage migrant. The Shoveler has undoubtedly suffered from the drainage and "improvement" of the Adur Levels where it is now only recorded during exceptionally wet winter weather. In such conditions 30 were seen on the levels on 18th March 1979, 20 on 5th January 1980 and 3rd January 1982.

Most records are noted from the coast where there is a small eastward passage in spring and a smaller westward autumn and winter movement. The monthly totals seen from Worthing between 1978 and 1986 were:-

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	10	10	47	91	8	—	—	—	—	2	3	—
No. flying west	14	—	—	19	—	—	—	2	17	12	14	5

Between 1953 and 1986 there have been no records in seven years and the most unusual sightings were a flock of 28 seen on Widewater on 6th January 1965 and one flying over Shoreham on 20th July 1961.

POCHARD (*Aythya ferina*):- A winter visitor and passage migrant which has been recorded annually since 1979 and with the exception of 1959 was seen in each year between 1953 and 1971. However, during the 1970's there were six years when there were no records. During the 1960's Hove Lagoon was the principal water and there are counts of 50 there in January 1963 and 40 in January 1968. Thereafter this site has ceased to be used, presumably due to urban pressures, and Pochard have subsequently been found on Widewater, Brooklands, Wiston Pond and Southwick Canal. Apart from 56 on Brooklands in January 1971, counts at these waters have been less with a peak of 24 at Widewater in February 1986 and 11 on Southwick Canal in the early months of 1979.

Generally very few are recorded moving along the coast; a total of 66 flying westward during the cold weather in January 1985 was unusual and a quite exceptional movement was noted on 12th March 1984 when 236 flew eastward in small flocks at Worthing with a further 34 noted passing Widewater on the same day.

TUFTED DUCK (*A. fuligula*):- A regular winter visitor noted in small numbers and often in association with Pochard. Like the Pochard, it has occurred annually through-

out the 1960's and subsequent to 1977 with the highest numbers occurring in periods of cold weather. Unusually high counts include 35 on the River Adur and 30 on Brooklands between January and March 1963, 27 at Widewater during February 1956 and 14 at Wiston Pond in March 1974.

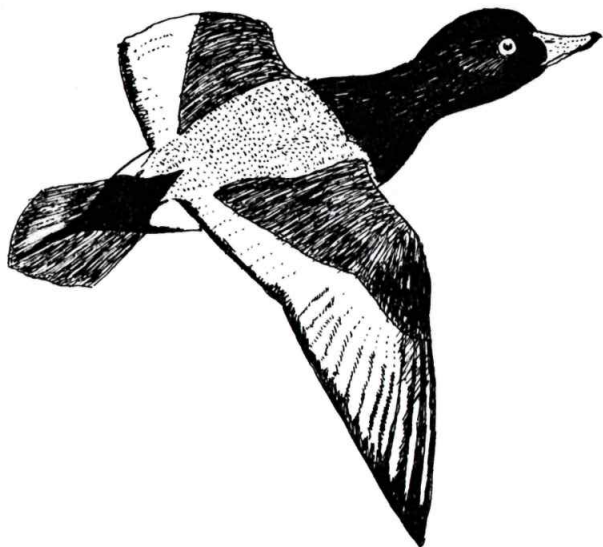
During the breeding season of 1967 a pair raised 8 young at Wiston Pond and two pairs have been seen there in 1978, 1982, 1983 and 1986 but breeding success in these years has never been proved.

Coastal movements usually involve only a few birds but during severely cold weather in January 1985 a total of 143 flew west at Worthing which included 103 seen on 7th January.

SCAUP (*A. marina*): A scarce winter visitor and occasional passage migrant. Between 1953 and 1986 a total of 181 individuals have been noted in 19 different years. Of the blank years eight occurred in the period between 1966 and 1977 and like other diving ducks most have occurred during cold winters. The following table shows the numbers seen during six cold weather influxes.

	1954	1961	1963	1979	1982	1985
	18	16	18	20	29	17

Most Scaup winter on the sea or on nearby waters so, apart from a single bird on the upper Adur on 16th February 1986, all the records for the area come from the coast, e.g. Widewater, Brooklands, the lower Adur or passing offshore. Between 1961 and 1974 Hove Lagoon was a preferred site where a total of 29 were seen. The largest groups were an exceptional party of 18 in Shoreham harbour in February 1954 and a



total of 19 flying westward offshore during a cold weather movement on 1st January 1979.

EIDER (*Somateria mollissima*): Recorded in small numbers feeding offshore or in Shoreham harbour with a single record of an individual on the River Adur on 21st October 1985. The numbers seen feeding or resting offshore vary considerably from years, like 1971, when only one was recorded to sizeable flocks of 37 seen offshore at Widewater on 12th October 1972 and 50 noted at Worthing on 13th November 1983. The following tables show the autumn and winter to be the most likely to encounter Eider remaining offshore but more are seen flying offshore with a notable eastward passage in the spring and a westward passage in the early winter.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total offshore (1953-1986)	37	14	13	27	13	3	4	3	6	54	91	42

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	109	64	231	835	263	18	—	1	18	49	64	25
No. flying west	77	35	51	20	12	16	12	21	33	14	137	244

The largest movements were 184, including two flocks containing more than 60 birds, flying eastward at Worthing on 18th April 1982 and 137 also flying eastward at Goring on the late date of 31st May 1984.

The records and following table suggest there has been an increase in the numbers of birds feeding offshore over the past three decades.

	1953-1959	1960-1969	1970-1979	1980-1986
Approx. numbers recorded offshore	7	49	78	172

LONG-TAILED DUCK (*Clangula hyemalis*): An uncommon seaduck with 52 individuals recorded in 16 different years since 1952. The records span between 26th October (in 1982) to 16th May (in 1984) but the following table of approximate monthly totals shows most have occurred in November.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
7	8	8	9	8	—	—	—	—	1	14	8

Between 1968 and 1979 there were no records but since 1979 records have been annual with 7 noted in both 1983 and 1984. The following table suggests a notable increase in the numbers seen in the 1980's but as most are now recorded passing the shore this increase may merely reflect a greater time spent seawatching.

	1953-1959	1960-1969	1970-1979	1980-1986
Numbers recorded in each decade	4	14	1	33

Although most are seen offshore there are records, occasionally of long staying individuals, from Shoreham harbour, Widewater and Brooklands.

COMMON SCOTER (*Melanitta nigra*):- A common and numerous seaduck recorded in each month with most seen during the winter and spring. Small flocks are frequently noted offshore; the largest being 100 off Southwick between 26th March and 10th April 1958, 50 at Shoreham on 4th January 1963 and a wintering flock of up to 60 offshore at Widewater in December 1980, 1981 and 1983, in January 1981 and February 1984.

Most, however, are noted passing the shore and figure 5 shows the rate of passage for the 26,859 Common Scoter noted flying past Worthing between 1978 and 1986. The movement is predominantly in an eastward direction with less than 10% noted flying westward. Numbers seen during each spring vary considerably; the largest movements are noted in unsettled weather when easterly or southerly winds occur between late March and May. The best movements recorded were 1000 flying east at Widewater on 17th April 1962, 1700 in just 1 hour on 17th March 1972, 4500 flying eastward at Worthing on 8th April 1979 and 1632 passed Southwick on 23rd March 1980.

Perhaps the most unusual record was a single bird on the River Adur on 17th August 1984.

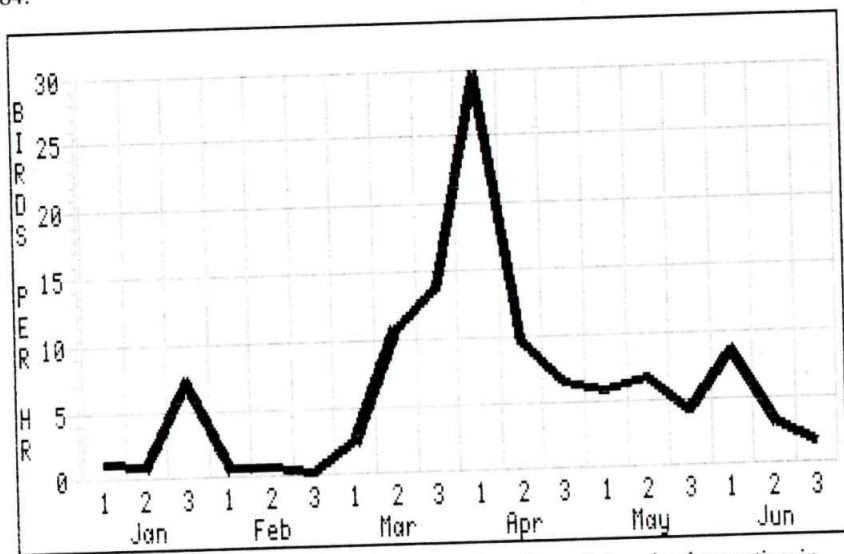


Fig. 5. Common Scoter seen passing Worthing in each hour's observation in 10 day periods (1978-1986).

VELVET SCOTER (*M. fusca*):- A regularly occurring but scarce seaduck which, like the Common Scoter, is most frequently seen during the winter and spring. All the sightings were from the coast and the records fall between 2nd August and 25th May (both in 1984). The following tables show that most birds noted feeding or resting offshore occur in the winter whilst those flying past are predominantly noted between March and May.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total offshore	15	30	3	11	4	—	—	—	—	1	9	15

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	—	—	37	171	110	—	—	—	—	4	7	9
No. flying west	6	2	—	41	9	—	—	2	—	6	6	2

The table includes a raft of 30 off Widewater on 18th February 1956 and a flock in 1980 which reached a peak of 15 on 21st December.

Spring migration varies from year to year with 170 seen from Brighton and Worthing in 1984 being the best year. Velvet Scoters are usually seen in small parties or flying eastward in flocks of Common Scoters; flocks of 36 flying westward at Worthing on 27th April and 33 passing eastward at Brighton on 12th May in 1981 were unusual.

GOLDENEYE (*Bucephala clangula*):- A winter visitor with 237 individuals recorded in 22 different years between 1953 and 1986. The earliest were three at Hove on 27th October 1956 and one flying east there on 23rd May 1984 was the latest. The majority of sightings are between January and March and the following table shows a gradual increase in numbers seen in the area in recent years.

1950's	1960's	1970's	1980's
6	26	70	134

Goldeneye can be found on any suitable stretch of water during the winter but during severe weather are most likely encountered on the unfrozen River Adur. During such a spell in January 1971 a flock of 13, the largest number noted in this area, was seen. Females and immatures are more often noted than adult drakes which conforms with the knowledge that adult males migrate shorter distances from their northern European breeding grounds than adult females and immatures (Cramp and Simmons 1977).

SMEW (*Mergus albellus*):- A scarce visitor which is noted in extremely cold winter weather and has only been recorded in seven years between 1953 and 1986. All the records fall between 26th December and 3rd March and the annual distribution of the 92 recorded individuals is shown in the following table:-

1954	1956	1957	1963	1979	1985	1986
4	1	2	11	4	67	3

Numbers in peak years are often difficult to assess, no more so than in 1954 when records of three in Shoreham harbour on 1st February, one on Hove lagoon and two flying west past Hove on 2nd February and four offshore at Brighton on 3rd February could be interpreted as any number between four and ten birds.

The table highlights 1963 to be the second large influx when 11 red-heads were seen between Southwick Canal and Brooklands with the maximum of four together at Shoreham footbridge on 3rd February. Most of the sightings in 1985 were on 20th January when 47 (34 red-heads and 11 males) were seen on the upper Adur, a gathering which was the largest ever recorded in the county and including the only males seen in this area. Fifteen were noted near Washington later in the same month. Apart from the sites previously mentioned Smew have been seen passing offshore, and at Wiston Pond and Widewater.

RED-BREASTED MERGANSER (*M. serrator*):- A common winter visitor most frequently encountered offshore between Widewater and Ferring with notably fewer noted from the steeper beaches east of Shoreham. Between November and April loose flocks of 30 or more individuals can be regularly seen from Worthing, Goring or Ferring beaches but counts at Worthing are frequently greater with 65 during the winter of 1972 and 70 in both April 1980 and February 1985.

Although recorded in each month this species is rare between late May and late September, therefore records of singles flying east at Worthing on 21st August 1969, east at Widewater on 10th July 1983 and a party of 10 passing westward at Worthing on 2nd June 1984 are noteworthy.

This species is regularly recorded on sea-watches. Although distinguishing passage birds from local movements of wintering flocks is difficult the following table suggests an eastward movement between March and May and a return westward movement between September and November.

The monthly totals from seawatching at Worthing between 1978 and 1986

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	376	290	730	1649	144	—	—	—	—	2	70	143
No. flying west	186	188	130	211	19	11	—	—	8	164	345	258

Red-breasted Mergansers are frequently noted in Shoreham harbour, on Widewater, Brooklands or the lower reaches of the River Adur but a record of one on Adur Levels on 20th January 1985 is the furthest from the coast.

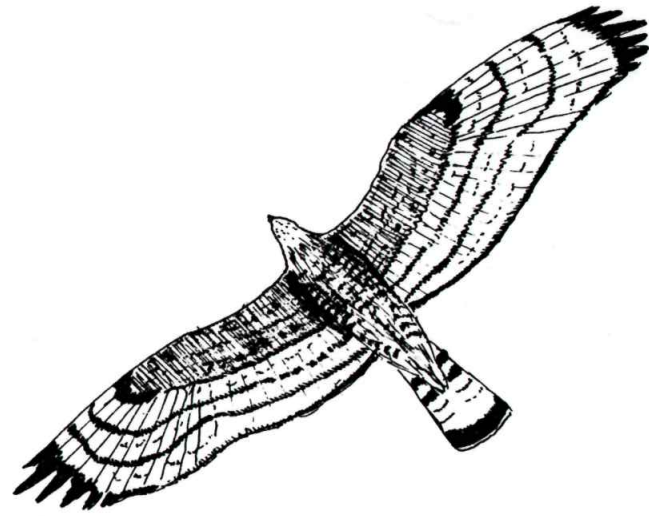
GOOSANDER (*M. serrator*):- A scarce winter visitor and passage migrant which has been recorded in 13 of the years between 1953 and 1986. The annual distribution of records is shown in the following table and shows the largest numbers are recorded in years with severely cold winters.

1956	1962	1963	1973	1974	1979	1980	1981	1982	1983	1984	1985	1986
6	2	18	3	1	27	5	1	2	5	1	52	5

Nearly all individuals are recorded on or near the River Adur, on the sea, or moving offshore on passage. The earliest was noted off Brighton on 15th November 1983 whilst the latest was a single red-head flying eastward offshore past Hove on 15th May 1984. The details of the large influx in 1985 are described by Smith (1985) but included the largest flock (33) in the area which flew south west over the River Adur at Cuckoo's Corner on 20th January.

RUDDY DUCK (*Oxyura jamaicensis*):- This category C species was first admitted to the Sussex list in 1978 since when there have been three records of single birds on Hove Lagoon between 16th and 19th January 1982, in Shoreham harbour on 18th January 1985 and at Brighton marina on 25th December 1985.

HONEY BUZZARD (*Pernis apivorus*):- Single birds seen flying north-west over Worthing beach on 8th June 1985 and over Worthing on 18th June 1986 are the only two records of this rare passage migrant.



BLACK KITE (*Milvus migrans*):- There are two records of this rare vagrant. The first flew north over Cissbury on 5th May 1977 and one was seen in the Washington Bostal area on 12th and 13th July 1980.

RED KITE (*M. milvus*):- Walpole-Bond quotes Gilbert White, of Selborne, as "having met with Kites on the Downs above Steyning on 1st December 1873" but they are a rare vagrant with only three other records. Singles were seen over Chanctonbury on 27th November 1971 and on the Adur Levels on 14th October 1979, this probably being the same bird seen at Cissbury on 20th October 1979.

WHITE-TAILED EAGLE (*Haliaeetus albicilla*):- The only records come from the 19th century; one shot at Shoreham in 1839 (Borrer), one described by Walpole-Bond as succumbing at Shoreham in February 1881 (also attributed to Borrer) and an immature shot near Lancing on 19th November 1896.

MARSH HARRIER (*Circus aeruginosus*):- A rare spring and early autumn passage migrant, confined almost entirely to the months of April, May, August and September. There are only two sightings later, on 1st October 1976 and one flying west at Widewater on 31st October 1956. The earliest of the four April records was one seen on the Adur Levels in 1984 on the 3rd.

Between 1953 and 1973 there were three records only, but the years 1974-82 show a much improved picture, with only four blank years. The period between 1978-82 coincided with exceptional sightings of Montagu's Harriers (*C. pygargus*), the two species sometimes being seen together over the Downs in autumn. The best year was 1980

when at least 7 individuals were recorded. Three Marsh Harriers were seen in one group in autumn 1980 and four in the same period in 1981.

Sea-watches have accounted for twelve records (ten since 1978) with records in April, May (10), and October from all the regularly watched coastal sites between Goring and Brighton with most noted at Worthing (6) and Widewater (3). On 1st May 1979 one flew south out to sea at Worthing. Of the 35 individuals recorded between 1953 and 1986, 90% were females or immatures and the most productive months were May (12) and August to September (10). Walpole-Bond recorded a specimen "secured" near Worthing on 14th June 1854.

HEN HARRIER (*C. cyaneus*):- A regular winter visitor and passage migrant, a feature of which is a large influx of birds in certain years. The winters of 1971-72, 1973-74, 1978-79, 1979-80 were exceptional. The table shows that most birds (97%) occur between September and April with only 2 records in both May and August and none for June and July.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total (1953-1986)	14	14	10	10	2	—	—	2	6	21	23	11
Coast (migrants)	1	—	2	—	—	—	—	—	—	1	2	5

The latest spring date is 11th May (in 1969) at Cissbury and the earliest autumn arrival on 4th August (in 1976) at No-Man's Land. There have been five blank years in the period 1953-1986. Birds range along the Downs and Adur Valley but there are few records from the Washington-Storrington ridge. Of the 113 records, twenty have been identified as males (17%). Groups of five birds (autumn 1973) and four (March 1968) have been recorded, together with several threesomes. There were eleven sightings of birds either coasting or crossing the coast between Goring (2), Worthing (2), Widewater (3), Hove and Brighton (4). The apparent decline in the 1980's is probably attributable to extensive cereal planting, creating less cover for both harriers and prey. The numbers seen in seven year periods are

	1953-1959	1960-1966	1967-1973	1974-1980	1981-1986
January-May	3	1	15	21	11
August-December	6	6	15	21	14

MONTAGU'S HARRIER (*C. pygargus*):- A scarce late spring and early autumn passage migrant, not recorded in April and only once in October in No-Man's Land on the 21st in 1972. A later record however is noted by Walpole-Bond of one netted at Brighton on 7th November 1867. Although overlapping with Marsh Harrier (*C. aeruginosus*), Montagu's Harrier tends to arrive later and has been seen in June on at least five occasions and in July on four. 1973 was a confusing year with 15 sightings reported on the Downs between 13th May and 12th September, three being males. Assuming a total of eight individuals in those months then the total between 1953 and 1986 matched that for Marsh Harrier, i.e. 35 birds.

Only 9 males were recorded and there were no migrants seen at the coast, possibly because this species is known to cross sea barriers at great height. Numbers were evenly spread between May and September, with 10 sightings in the latter month. Three were observed together on the Downs on 4th September 1980 and a melanistic bird patrolled Park Brow in 1974 from 8th June to 6th July. The peak years were 1973 (8) and 1980 (5) but nineteen of the thirty four years proved blank.

GOSHAWK (*Accipiter gentilis*):- A rare vagrant with just five sightings in different years between 1974 and 1986.

SPARROWHAWK (*A. nisus*):- A resident breeder and scarce passage migrant, uncommon before 1971 with only 66 sightings recorded in the previous 19 years. Since then the species has increased steadily with a further 185 sightings between 1971 and 1976.

During the 1980's the accent on reporting moved from sight records to estimations of breeding pairs and, in keeping with the findings throughout Sussex (Shrubbs 1984), the records indicate that breeding pairs have risen annually from 5 pairs in 1981 to 13 pairs in 1986. Ives (1984) indicated in his raptor survey that many woodland pairs had probably been overlooked and the recent figures tend to confirm his estimate of a probable 10-11 pairs in the area as accurate. Considering the birds preference for woodland sites, and the comparative paucity of these, the species has probably attained the maximum number supportable.

Since 1965 birds have occurred annually in every month of the year in all localities and is often reported soaring over urban areas and observed hunting prey through gardens in residential districts, particularly in Findon Valley, and from Ferring to Lancing. The scarcity up to 1964 was almost certainly due to the effects of pesticides used in the early 1960's. There are too few records to assess breeding success but between three and five birds have been seen together on at least six occasions.

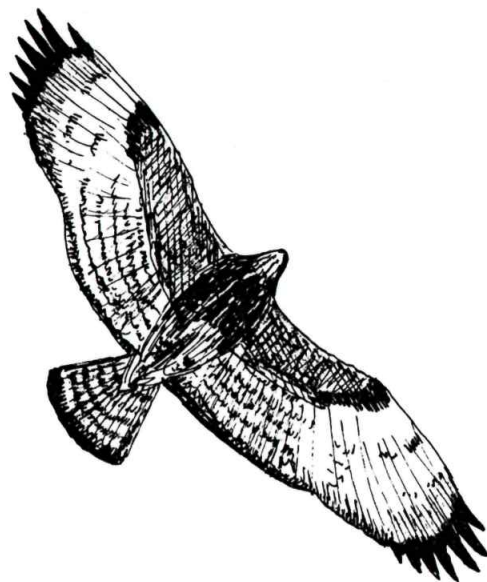
Although migrants from Northern Europe occasionally pass through the south coast (Brown 1976), local seawatching has produced very little evidence of migration with only five records — one at Worthing beach on 24th July 1969, three along the coast in the spring of 1982 and one flying north at Widewater on 1st May 1985.

BUZZARD (*Buteo buteo*):- Although reported in every month of the year this is mainly a spring and autumn passage migrant and scarce winter visitor. Records date back to 1885 when one was seen at Coombes on 7th February, then prior to the current period there were two other records in the same area in October 1911 and March 1951. During the years 1953 to 1965 records are scarce, with only 7 sightings, and none at all in 7 of those years. From 1966 it has been recorded annually and, as the following table suggests, in increasing numbers but with a decline in 1985 and 1986. The numbers seen in seven year periods are:-

	1953-1959	1960-1966	1967-1973	1974-1980	1981-1986
Downs	3	7	34	45	44
Coast (migrants)	—	4	4	8	7

Most records (84%) are from the Downs, the peak periods occurring between March–June and August–October. Sightings along the coastal plain and Adur Valley (16%) can be interpreted mainly as migrants with 15 birds actually seen passing over the coast. Four were seen together over Findon on 27th October 1969 and four groups each comprising of three and two birds have been seen. In 1984 a pair frequented a small patch of woodland from 29th January to 16th April. The following table shows the monthly figures from 1953–1986.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Downs	5	1	7	9	9	9	6	18	33	23	8	5
Coast	3	—	3	2	1	—	—	1	7	2	1	3
(migrants)												
Total	8	1	10	11	10	9	6	19	40	25	9	8



ROUGH-LEGGED BUZZARD (*B. rufinus*):- A scarce and irregular winter visitor, usually associated with cold north-easterly winds. Birds can arrive in small parties and have wintered from 15th October (earliest arrival) to the end of March. Most sightings have come from between Cissbury and Chanctonbury where 21 of the 25 birds have occurred. Of the other four, in 1966 individuals flew south-west at Goring on 30th October and over Salvington on 15th November. In 1974 one was over the Sanctuary on 4th November and another flew south-west over Highdown on the 23rd. The largest group seen was of four in 1974. The following table is based on the number of birds considered to be present at the time but some overlapping of December birds into January has probably occurred.

There is an early record of a bird shot at Shoreham in 1839 (Walpole-Bond).

Annual numbers of Rough-legged Buzzards recorded (1953–1986)

Year	1966	1967	1969	1972	1973	1974	1975	1976	1977	1978
January–February	—	2	—	—	—	3	2	—	—	—
October–March	4	—	1	1	2	6	—	1	1	2

OSPREY (*Pandion haliaetus*):- An irregular spring and autumn passage migrant confined to the months April to May and August to October. The earliest spring record is of one flying north over Hollingbury on 17th April 1962 and the latest was seen off Shoreham on 18th October 1981. There have been 25 sightings in 15 of the years between 1953 and 1986 but as birds tend to patrol the coast, sometimes for several days, overlapping occurs and the estimated total for the period is nearer 21 birds. The peak period was between 1977 and 1982 when 11 were seen but none have been recorded since.

Eight records come from the Adur Valley and Shoreham harbour area and involve an individual which frequented the Adur from 18th to 27th September 1981, roosting at Cuckoo's Corner and once seen devouring a meal on the airfield. Offshore five have been recorded between Ferring and Worthing and four between Lancing and Hove. Four others were seen passing over the Downs, all in September, between 1974 and 1982. The following table shows the monthly totals seen between 1953 and 1986.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
—	—	—	3	5	—	—	2	7	4	—	—	21

LESSER KESTREL (*Falco naumanni*):- One seen on the Downs near Steyning on 4th November 1973 is the only county record.

KESTREL (*F. tinnunculus*):- A widespread resident throughout the area and the most numerous bird of prey. Ives (1984) estimated the population at 31 breeding pairs in the western area but available records would tend to suggest a further 10–12 pairs in the eastern sector. Although it is well below a suggested national average of 75 pairs per 10 kilometre square (Sharrock 1976), the survey area is comparatively small, possessing a large urban sprawl and much downland given over to sheep and cereals, which is devoid of cover. However, many small, isolated woods and copses are made use of as breeding sites, also churches, barns, bridges and even hospitals are utilised with a pair having bred on the Royal Sussex County Hospital in Brighton between 1966 and 1969.

Birds often frequent built-up areas and are equally at home hunting the shore, river and canal banks and roadside verges as over their more traditional haunts. The breeding population increased steadily from 1969 (12–14 pairs) and became static at its present density in 1981. A rather drastic reduction seems to have occurred in 1985 and 1986, probably the result of two harsh winters.

The resident population is obviously augmented in autumn by post breeding dispersal and passage migrants, giving rise to the exciting spectacle of 18 birds hovering together at Long Furlong on 14th September 1978 and Chanctonbury on 15th September 1984

whilst groups of 15 were also recorded in 1976 and 1977. These sites are usually on steep downland slopes, facing an updraught of wind. Sea-watches have provided 19 sightings since 1968 with 16 of these occurring between 1982 and 1986. Although only 16 have been ringed in the area since 1953 a female trapped at the Shoreham sanctuary in September 1979 had been previously ringed as a nestling near Doncaster, Yorkshire three months earlier.

RED-FOOTED FALCON (*F. vespertinus*):- A rare vagrant recorded once in recent years when an immature female was present on Cissbury from 25th May to 1st June, 1979. Walpole-Bond also refers to one obtained near Brighton racecourse on 20th May 1873.



MERLIN (*F. columbarius*):- A winter visitor and spring and autumn passage migrant that has occurred regularly in 21 of the 34 years of the review period (1953–1986). Prior to this there were just 3 records of singles on the Downs in November 1835 and March 1886 and a pair at Cuckoo's Corner in February 1948. However since 1953 a total of 57 single individuals have been recorded; eight identified as males and seven as females. The table shows records were scarce between 1953 and 1967 (five records only) but reported in every year since, bar 1970 and 1973 and with a marked increase since 1980.

	1953–1959	1960–1966	1967–1973	1974–1980	1981–1986
Downs	—	1	6	13	13
Coast (migrants)	2	2	2	7	11

As the following table shows all the records save one occur between September and April. One seen over Truleigh Hill on 21st August 1985 was an unusually early autumn

arrival whilst the latest date was recorded over Shoreham on 22nd April 1977. The monthly totals were:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Total
13	3	6	4	—	—	—	1	6	11	8	5	57

With 33 birds reported from the Downs and 24 from the coast the coverage was widespread within the area. Only one bird was seen coming in from the sea, flying north-east at Brighton on 22nd October 1955.

HOBBY (*F. subbuteo*):- Now regarded as a regular spring and autumn passage migrant and scarce summer visitor, being only recorded ten times between 1953 and 1971 but seen in every year since in increasing numbers with 31 between 1972 and 1978 and no less than 109 in the period from 1979 to 1986. The total number for the review period of 150 includes 38 (25%) seen on or over the coast, 28 of these in the spring and 10 during the autumn. Thirty of these were recorded since 1979 and sightings were probably influenced by the resurgence in sea-watching in this period, reports coming from all coastal watch points. Records span between 14th April (in 1982) and 12th October (in 1980) and the monthly totals are shown in the following table.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Downs	—	—	—	3	25	13	8	22	35	6	—	—
Coast	—	—	—	7	17	4	—	1	9	—	—	—
(migrants)												
Total	—	—	—	10	42	17	8	23	44	6	—	—

Apart from the coastal birds most were seen on the Downs, at Shoreham airfield, at the Sanctuary or over the Adur Levels.

The late C. A. Grigg of Steyning stated that the Hobby bred on the north escarpment between 1936 and 1948 and there have been two sightings since of birds displaying in the area.

GYR FALCON (*F. rusticolus*):- A light phase bird which frequented the downland between Steyning and Cissbury from 11th–22nd March 1972 is the only record.

PEREGRINE (*F. peregrinus*):- A rare passage migrant and occasional summer visitor which has been recorded at least once in each month except January, July and December. There have been 13 sightings between 1955 and 1986, involving 10 separate years. Two were seen in 1958 and three in 1983, all records referring to single birds. Four females and two males have been identified, one of the latter frequenting Southwick Hill from 26th March to 2nd April 1958 but all other sightings being of transitory birds. The monthly totals were:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
—	1	1	1	1	1	—	1	5	1	2	—	13

Six records occurred in the Adur Valley and Shoreham harbour area, five from the Downs and singles at Brighton and Worthing. The absence of birds in January and December seems unusual particularly as at this time large numbers of waders occur on the mudflats of the River Adur. The five in September could involve a dispersal of post breeding birds.

RED-LEGGED PARTRIDGE (*Alectoris rufa*):- This is not a native species to Britain with several attempted introductions occurring in the 17th century before it became established in the late 18th century.

There are few records of this species but they occur commonly on agricultural land and the records from the Downs suggest the numbers have increased since the early 1970's. This increase may be partly due to the release of reared stock and the introduction of Chukar and Chukar/Red-legged hybrids.

GREY PARTRIDGE (*Perdix perdix*):- This species is regularly seen throughout the year in areas of mixed cultivation. There are, however, few local records but both the national farmland census and an intensive study done on farmland near Washington (Potts 1970) show that this species has declined dramatically in recent years.

QUAIL (*Coturnix coturnix*):- This summer visitor occurs almost every year in varying numbers; the fluctuations are thought to be partly due to the invasion-type movements undertaken by this species particularly in warm springs (Cramp 1985). Nationally there have been four "quail" years in this century, 1947, 1953, 1964 and 1970 but interestingly no increase in local records were noted in those years and 1970 produced no records at all. The following table shows the best years in this area.

1964	1965	1971	1977	1979	1986
5	10	5	6	4	5

Long term national population trends for this species are very vague but suggest there was a decline in numbers from the early 19th century with a subsequent rise again after 1940. The area records show the average number recorded in the 1960's as two per year, in the 1970's four per year and 1.5 per year in the 1980's.

Quails are seldom seen but announce their presence in fields of cereals by their characteristic call. Most records are from mid-summer but one was seen unusually early in March 1973 on the beach at Widewater.

PHEASANT (*Phasianus colchicus*):- This, the commonest of the game birds, was thought to be introduced into Britain in the 11th century and can be regularly seen in wooded areas. Like the other game birds there are few breeding records and many reared birds are released to augment the population for shooting.

WATER RAIL (*Rallus aquaticus*):- This species occurs mainly as a winter visitor, noted particularly in harsh weather, and a passage migrant. Most records are from damp

areas like the Shoreham sanctuary, Striven's reed bed and the New Salts Farm/airfield area. In recent years smaller numbers have been recorded from fewer sites than during the 1960's and 1970's. Since 1983 only singles have occurred whereas in the past up to 10 were regularly seen at Striven's reed bed.

There are several reports of individuals in gardens, including a detailed account of one which took up residence in a Worthing garden between January and March 1970.

SPOTTED CRAKE (*Porzana porzana*):- One found dead by a pylon near Shoreham on 18th October 1951 is the only record.

LITTLE CRAKE (*P. parva*):- Walpole-Bond records one caught alive in Beeding chalk pit in October 1845 and Knox notes one prior to this but gives no date or site.

BAILLON'S CRAKE (*P. pusilla*): There are just two old records of this rare crake; singles were obtained at Brighton on 2nd September 1894 and at Lancing on 13th November 1900.

CORNCRAKE (*Crex crex*):- Now a rare passage migrant and winter visitor; des Forges and Harber consider that the decline in the Sussex breeding population began from the early part of the century and Shrubbs in 1979 felt there had been no change in the apparent status since 1947. The late C. A. Grigg listed this species as one which had bred in the Steyning area since his boyhood.

Between 1951 and 1986 records have only been received in 10 years and all before 1975. The majority of sightings or reports of birds calling are from the Downs, although in 1956 one was seen in a Shoreham garden, in 1966 one was reported from a Steyning water-meadow and in 1972 one was found at Ferring. During 1971 one or two were present at Cissbury and a dead specimen, thought to have been killed by a tractor, was sent to the Game Conservancy. Two other dead specimens have been located, one in 1951 at Shoreham and the other in 1957 which apparently had flown into wires near Steyning.

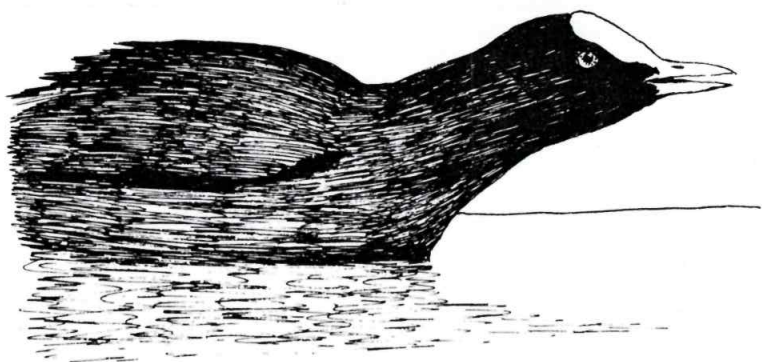
Most records refer to passage birds but winter records exist at Cissbury where singles were reported in 1908, 27th November 1972 and 9th March 1973.

MOORHEN (*Gallinula chloropus*):- A common resident species found near any small area of water. Although this species undoubtedly breeds in many ditches, dykes and small ponds the breeding records are few with confirmed breeding only noted at the Shoreham sanctuary, Woods Mill, Brooklands, Ferring duck pond, and the mill ponds at Steyning and Storrington.

Moorhens do not achieve the large winter flocks of Coot; 37 at Brooklands on 23rd January 1985 being the maximum count. Nevertheless most records refer to winter counts, particularly in severe winters such as 1986. There is no evidence of passage through this area.

COOT (*Fulica atra*):- A regular breeding species and common winter visitor. There were few records for this species in the 1950's and 1960's, although the count of 150 on the water meadows near Coombes in late February 1963 is the largest count for this area. Since the 1970's it has been regularly reported from Brooklands, Widewater, Small Dole and various parts of the Adur.

Breeding information is scarce but confirmed nesting has been reported from Steyning mill pond, Brooklands and Wiston Pond. Most records refer to winter counts at Brooklands and other favoured sites where numbers build up from October to a peak in late January or February. Maximum numbers in more recent years include 102 at Brooklands on 3rd January 1985 during severely cold weather and 120 near the Sussex Pad on 28th January 1979 again in extreme winter weather. Widewater holds a much smaller winter population than Brooklands and no confirmed breeding has been reported from this well watched site.



CRANE (*Grus grus*):- A large invasion of this rare species occurred in 1963 when over 500 arrived in the country with over 300 being seen in Sussex. It is hardly surprising therefore that records refer to this influx; a flock of 12 were seen flying south east over Lancing on October 30th and 22 were present on the Adur Levels on 31st October 1963. A juvenile seen at Small Dole in May 1984 is the only other record.

GREAT BUSTARD (*Otis tarda*):- One reported on the Downs above Brighton just before Christmas 1875 was eventually shot further east, near Ripe, on 12th January 1876. This is the only record of this extreme rarity.

OYSTERCATCHER (*Haematopus ostralegus*):- Recorded throughout the year with virtually all the observations coming from the coast or Adur estuary. There are no breeding records although several birds are noted in the summer. The largest numbers are recorded during the spring sea-watches and most of these birds, like those seen in the summer, are probably non-breeding individuals.

During the 1950's and 1960's records comprised of just singles or small parties with the exception of 17 flying west at Southwick in December 1962 and 24 at Lancing beach in the autumn of 1968. Although no figures were published there are also reports of "many sea records" in 1957 and "more than usual noted on passage" in 1961.

The majority of the wintering birds in the 1970's were seen at Ferring beach where the maximum was 36 in January 1976. In the 1980's there has been a gradual increase in records from other beaches and the River Adur culminating in records of 38 on Shoreham beach in April 1985 and 22 on the Adur during August of the same year.

Similarly there has been a notable increase in the spring and autumn coastal movements between 1979 to 1986. This, in part, may be due to increased observer activity but there does appear to be a genuine trend; 1985 was the peak year with 694 flying eastward and 594 westward seen between January and May. As this coincides with the increase in local records and the emergence of a pattern of eastward movement in the morning and westward flights in the evening it is likely that most birds seen passing Worthing beach are undertaking local flights.

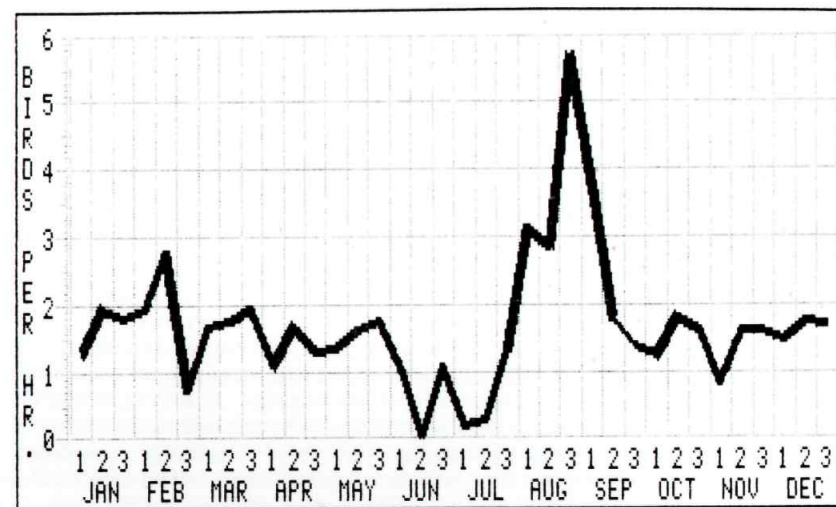


Fig. 6. Oystercatchers seen passing Worthing in each hour's observation in 10 day periods (1978-1986).

The graph showing the numbers seen in each hour for all the watching at Worthing between 1978 and 1986 shows a fairly steady observation rate throughout the year with a small decrease during the summer and a small peak during early autumn. The largest flock recorded was 60 which passed Ferring beach on 9th September 1985.

AVOCET (*Recurvirostra avosetta*):- This species is predominantly a spring passage migrant, seen offshore either singly or in small parties, the largest being 14 on 10th April 1983 and 13 on 20th May 1986 both passing Worthing beach. It is much rarer to be seen over the sea on autumn migration.

Only 13, including 9 offshore at Hove on 2nd April 1960, were recorded between 1953 and 1975 however, since 1976 it has been recorded annually. The following table of the monthly distribution of all the records highlights the April and May peaks.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	1	4	47	42	6	1	1	7	—	3	3

Several of the records, particularly outside the spring period, come from the lower Adur and New Salts Farm area.

STONE CURLEW (*Burhinus oedicnemus*):- This species represents one of our saddest losses, its extinction in the county being briefly described by Prater (1985). Since 1938 the Sussex population declined considerably probably due to changing agricultural practice (Shrubbs 1979). One flying north over Lancing on 24th June 1982 is the only record since 1973 when they last bred on the local downland.

Between 1955 and 1965 it was recorded regularly as both a breeding and migrant species with up to 3 pairs nesting on the downland between Steyning and Lancing. A remarkable concentration occurred in 1955 when 50 were noted north of Lancing on 27th September, increasing to 125 by 1st November but rapidly leaving after this date. The same area held 27 on 27th September 1959.

In more recent years only 1973 provided several records with an exceptional flock of 12 seen flying over Mile Oak on 27th April. During that year there were 15 other sightings with one confirmed breeding pair. Sadly the eggs failed to hatch and were subsequently stolen. There have been no wintering records.

LITTLE RINGED PLOVER (*Charadrius dubius*):- Since the first record in 1964 it has been seen in 10 of the following years until 1986. It occurs mainly as a scarce migrant although a pair has bred at two sites. Although records fall between 21st March (1985) and 21st September (1980) the following table shows that most migrants are noted in April.

Mar.	Apr.	May	June	July	Aug.	Sept.
2	11	7	—	—	6	1

Two were seen together on 26th April 1981 and 17th August 1984 however, most are seen as singles either passing the shore in spring or in the Adur Valley during spring or autumn. One on downland on 16th April 1981 was unusual.

RINGED PLOVER (*C. hiaticula*):- Although a scarce breeding species it is a common migrant and winter visitor where it can be regularly seen on the River Adur and shoreline particularly between West Worthing and Ferring.

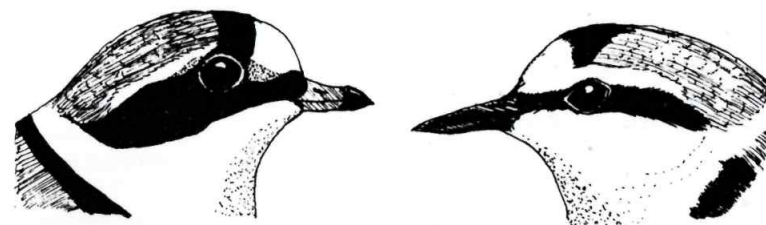
Systematic monthly counts on both the River Adur and at the Goring Gap wader roost have highlighted an increase in the numbers during both the autumn and winter since 1960. The counts reveal peak numbers to be present in August to early September and in November with a levelling off during winter and rapidly decreasing in February and

March. Although 330 were counted on 27th August 1986 the usual autumn number on the Adur in recent years is about 250 with similar numbers in November and about a third less in the winter months. Although counts at Goring Gap have reached 300 in both September and November of 1984 the peaks are usually less than 200 and occur during the winter months.

Small numbers are recorded annually passing offshore on spring passage, usually in small groups and often associated with other waders such as Dunlins, Grey Plovers or Turnstones. Numbers vary from a total of 26 flying eastward in 1983 to 80 in 1984, the peak then was 13 on 28th April. Higher numbers are noted offshore in the autumn but at this season it is difficult to separate passage birds with those flying between roost and feeding sites.

Since the first pairs bred at Portslade and Southwick power stations in the late 1960's they have bred regularly but with variable success. The best year was 1984 when 10 pairs nested. Breeding pairs have been recorded from 4 coastal sites between Brighton marina and Ferring but the chosen shingle beaches are often prone to disturbance. Additionally, since 1972 between 1-3 pairs have been recorded on downland sites.

There are 2 records of birds in unusual plumage; a partial albino on the Adur in November 1980 and a melanistic individual at Goring in October 1984.



KENTISH PLOVER (*C. alexandrinus*):- One was shot at Shoreham on 5th October 1876 but thereafter there were no records until 1953. The seven records, involving just 9 birds, since 1953 reveal this to be a rare passage migrant and winter visitor. Most have been seen on the Adur during the autumn with records of single juveniles on 3rd-4th August 1975, 12th-13th August 1978 and 11th November 1982. A party of three arrived on 21st September 1980, one of which was still on the river on 24th September and the most recent observation on the Adur was a single bird on 17th July 1984.

The only spring migrant was seen flying eastward at Brighton marina on 11th May 1980 and the only wintering bird was a juvenile female which was first noted at Worthing beach on 24th October 1981 but thereafter was seen at either Goring or on the Adur until 15th March 1982.

DOTTREL (*Eudromias morinellus*):- Since 1953 there have been five records involving 8 birds which show this to be a rare passage migrant. Most have been seen in the vicinity of Steyning Round Hill with notes of three there on 26th-27th April 1977, two on 13th-16th May 1980, a juvenile on 16th-17th September 1981 and one on 10th Sep-

tember 1982. The most recent record and the only one seen at another site was at Newmarket Hill, Brighton on 26th September 1985.

This species is known to show site fidelity on passage therefore regular watching of these areas may produce further records in future years.

GOLDEN PLOVER (*Pluvialis apricaria*):- This species has been recorded in all months except June and is a regular winter visitor and passage migrant particularly in the autumn.

The earliest autumn record was one on the Adur on 28th July 1984. Numbers then increase steadily from August, mainly of singles and small parties of up to 10, reaching a peak in November when parties of up to 40 individuals have been seen. Most wintering birds are reported from the Adur Levels where between 10 and 40 are typically seen from December to February. However, 71 on 26th December 1979 and 70 on 3rd December 1976 were notably larger than the usual flocks. Smaller numbers are recorded during the winter from other sites; the maximum being 50 on the Downs on 18th March 1972.

This species is frequently seen moving in harsh weather conditions. These movements often involve greater numbers with the maximum, and area record, of 309 south at Upper Beeding seen on 12th December 1981 and the largest coastal movement at Worthing of 70 flying westward on 7th January 1985.

Rarely recorded in spring after March except in 1969 when there were 60 on Adur Levels on 7th April with 20 still there on 19th April. On 19th April 1963 a party of 5 at Applesham Farm were in summer plumage and could be identified as belonging to the Northern race. There have been just 3 other April records involving 9 birds between 1953 and 1986. The latest spring, and only May record was a single bird flying north over Worthing beach on 8th May 1981.

GREY PLOVER (*P. squatarola*):- A winter visitor and passage migrant seen regularly on the shore westward of Worthing and occasionally on the Adur. Few were seen in the 1950's and 1960's with only records of singles or small groups up to 4 birds. The wintering numbers increased steadily between 1969 and 1978 when counts at Ferring were between 20-50. Regular monthly counts at the Goring/Ferring high tide roost since 1979 reveal a further increase which is shown in the following table.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
January	20	173	83	102	190	54	286	228	189
February	34	184	78	105	104	13	230	192	196
March	n.c.	n.c.	n.c.	99	12	80	0	52	9
December	80	109	23	140	164	114	119	158	n.c.

Grey Plovers wintering in southern England are thought to originate from the Soviet Union where the breeding population has increased in recent years (Prater 1981).

The offshore spring passage was described by Newnham (1984) and, as shown in figure 7, reaches a peak in the first half of May. The numbers seen vary each spring ranging between about 100 to 439 which was the total seen in 1981. The largest movement in a

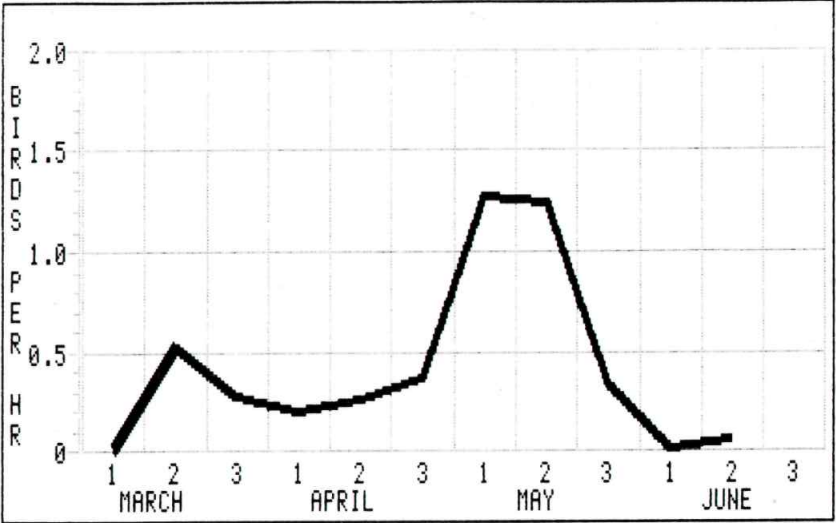


Fig. 7. The rate of eastward spring passage, in 10 day periods, of Grey Plovers seen at Worthing (1978-1986).

day was 398 which flew east in a strong south easterly wind on 7th May 1981 and the latest date was 11th June (1985). Offshore movements in the autumn are notably smaller, are invariably seen in south west winds and seldom exceed 100 birds between August and November. These apart there are only a few records in the area between 6th August (in 1977) and November when over 100 may be present.

Small numbers regularly occur on the Adur, here too a marginal increase has occurred with a maximum of 28 in February 1986. There are no records away from the coast or Adur estuary.

SOCIABLE PLOVER (*Chettusia gregaria*):- The only record is of a first year bird, found feeding with Lapwings on the downs on 31st October 1985. It later moved to the Adur Valley and Shoreham airport where it remained until 3rd January 1986.

LAPWING (*Vanellus vanellus*):- A resident, winter visitor and passage migrant, particularly in cold weather. Walpole-Bond recorded that the breeding population in Sussex had been declining since the end of the last century and Shrubb (1979) noted a sharp decline from 1968. In 1984 the Sussex Ornithological Society studied breeding Lapwings and related their distribution to land use. The results suggested that major changes in agricultural practice had resulted in a major decline in this species in the county (Shrubb 1984). The local results were documented by Newnham (1984) and revealed 87 pairs in 70 square kilometres of downland and river valley. Nearly 50% were found in field of spring sown cereal, 13% in areas of autumn sown cereals and 25% on various grassland habitats. A previous count revealed 22 pairs in 2500 acres of chalk downland north of Worthing. A more recent abrupt decline has been recorded

on this downland with only 9 pairs in 1985 and 5 pairs in 1986 over an area which held 24 pairs in 1984.

Lapwings flock quickly in June after breeding, as indicated by 135 in the lower Adur Valley on 19th June 1983 and 200 at Coombes on 13th June 1962. In 1985 1000 were reported on the airfield on 10th August but rapidly dispersed to feed on downland as soon as ploughing had started. During the autumn the largest flocks are recorded from the Adur Valley and the downland. These numbers fluctuate from year to year but typically involve some 500–2000 birds. Winter flocks gather in the Adur Valley, airfield and at New Salts Farm between November and March where a high count of 6000 was made in December 1984. However, flocks of 2000–3000 are not unusual.

Winter movements have been well reported and are sometimes substantial, particularly at the onset of harsh weather. These movements tend to be short-lived with notably smaller numbers noted in subsequent days. A most spectacular movement was observed on 31st December 1978 when in excess of 40,000 flew south out to sea whilst another 5000 were recorded arriving from the opposite direction. More typical movements however are 2310 moving south west over Upper Beeding and 591 flying in the same direction at Goring on 9th January 1982. Cold weather movements have involved fewer numbers in recent years.

KNOT (*Calidris canutus*):— Recorded in all months but predominantly a spring and autumn passage migrant with small numbers occasionally wintering. Since 1953 wintering numbers have remained fairly constant with one to four individuals seen on the Adur or Widewater although 17 on 3rd March 1963 was exceptional. Larger flocks are occasionally noted on the shore during the winter, examples being 30 on West Worthing beach in December 1981 and 18 on Worthing beach in December 1978.

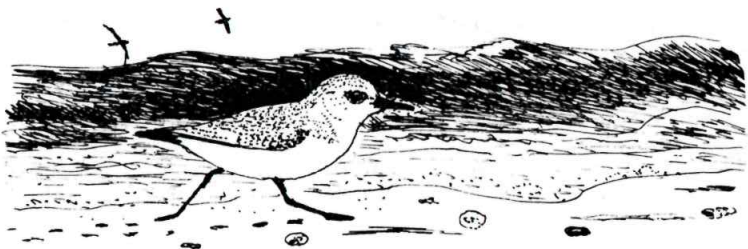
The largest numbers are seen moving eastward along the coast during the spring. Such movements have been seen between 4th March (in 1984) and 7th June (in 1984) but peak in May and typically are seen moving in association with other waders in settled weather with winds blowing from the east. The numbers seen fluctuate considerably from year to year as the following counts from Worthing show:—

	1981	1982	1983	1984	1985	1986
Moving east	275	93	13	135	87	82
Moving west	—	2	1	1	1	—

During 1981, the best year, 257 of the total were seen on 7th May.

First noted in autumn on 23rd July (in 1983) and thereafter seen in small groups of up to 20 on the Adur and coast. Numbers are largest from mid-August and through September before declining in October and November. A few are seen passing westward on autumn seawatches but flocks of 20 and 180 passing southwest over Worthing beach on 13th August 1985 were quite exceptional.

SANDERLING (*C. alba*):— Although recorded in all months of the year the Sanderling is mainly a winter visitor and passage migrant. In recent years most have been recorded passing the shore during spring; the following table shows the numbers seen in each spring at Worthing since 1978.



	1978	1979	1980	1981	1982	1983	1984	1985	1986
Moving east	89	133	186	591	614	286	650	559	257
Moving west	44	75	83	49	20	56	4	77	157

These movement were described in more detail by Newnham (1984) but figure 8 which displays the rate of passage clearly shows May to be the peak month with several still noted in early June. The largest number recorded was 247 flying east during an exceptional wader movement on 7th May 1981.

Like most waders, the number seen passing the coast in the autumn are very few with the total of 16 flying east and 37 west in 1984 being the greatest. Autumn records extend from 18th July (1983) but only a few are noted in most years mainly from the beaches to the west of Worthing although occasional singles are seen on Widewater and the Adur.

The wintering population is found on the beaches between Worthing and Ferring and in recent year counts have been made of the high tide roost at Goring Gap. Here the

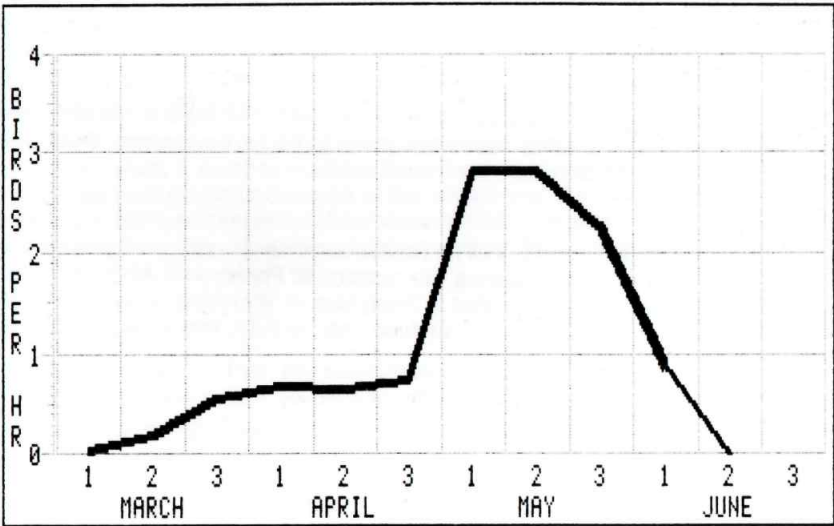


Fig. 8. The rate of spring passage of Sanderlings seen at Worthing in 10 day periods (1978–1986).

numbers fluctuate considerably from year to year and even day to day but monthly counts for the recent years are shown in the following table.

	1980	1981	1982	1983	1984	1985	1986
January	133	130	150	11	152	80	203
February	78	134	120	85	70	60	133
March	n.c.	120	132	71	n.c.	236	30
November	70	94	n.c.	0	140	40	n.c.
December	104	40	40	4	83	89	n.c.

The maximum counts however, occurred in the early 1970's when counts were taken of birds feeding on the beach and examples were 400 in March 1971, 380 in December 1972 and 300 in January 1973.

LITTLE STINT (*C. minuta*):- A scarce passage migrant, mainly in the autumn, and a rare winter visitor which is recorded almost exclusively from coastal sites with the majority of recent records coming from the Adur, Widewater and Worthing beach.

Between 1954 and 1962 up to six were recorded in each year except 1958. However, it became scarce between 1963 and 1978 when only 6 individuals were noted in just six of the years. Since 1979 it has been recorded annually again with between one and nine birds seen in the year. The monthly distribution of the records between 1954 and 1986 is shown in the following table:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	1	1	6	—	1	12	38	9	—	3

The table does not include two long staying individuals noted on the Adur between 15th January 1982 and 26th March 1982 and from 28th October 1982 to 9th March 1983. The possibility that the same bird was involved cannot be excluded.

Rare in spring but 3 singles were seen at Worthing in 1980. The earliest autumn record is 25th July (1984) but the table shows the peak to be in September. During the autumn individual birds often remain for several weeks.

TEMMINCK'S STINT (*C. temminckii*):- Rather surprisingly, this rare passage migrant has only been recorded once during this century, at Portslade in May 1916. Prior to this there were a number of birds shot at Shoreham or Worthing between 1871 and 1878. Of these three were in May, one in June, one in July, two in September and interestingly one in December.

BAIRD'S SANDPIPER (*C. bairdii*):- An adult at Widewater on 18th-19th August 1981 is the only record.

PECTORAL SANDPIPER (*C. melanotos*):- The only record is of one seen on the Adur on 26th September 1970.

CURLEW SANDPIPER (*C. ferruginea*):- A regular passage migrant mainly in autumn when most birds are seen singly or in small flocks on the Adur, at Widewater or occasionally on the beaches between Worthing and Ferring.

Numbers each year fluctuate with peaks in 1954, 1969, 1970, 1975, 1979, and 1985 but the annual pattern of occurrence during the past 30 years is remarkably similar to that described above for the Little Stint. Apart from 1958 and 1959 records were annual between 1954 and 1962 but during the following 15 years it was recorded in only 4 years. Two of these years however, yielded the areas largest records with 23 on the Adur on 7th September 1969 and 25 recorded between 9th August and 21st September in 1975. Since 1978 it has been recorded annually.

The earliest autumn and only July record was on 7th July 1982 but in most years it is seldom seen before mid-August and the clear peak is in September. Few remain into October and the latest was seen on 26th October 1979.

There have only been 3 spring records of singles at Widewater on 7th May 1962, on the Adur on 3rd April 1982 and on a breakwater at Brighton marina on 17th May 1984. There have been no winter records.

PURPLE SANDPIPER (*C. maritima*):- An uncommon but regular winter visitor and rare passage migrant, exclusively seen at coastal sites where it can be seen feeding amongst seaweed covered rocks or on man made structures such as breakwaters and jetties. Rarely has it been found with other waders at high tide roosts.

Not noted between 1953 and 1958 but seen annually since from the regular sites at Shoreham harbour, Brighton marina and the rocky beaches between Goring and Ferring. Wintering birds are seen between November and March and numbers vary in each year with the highest count of 17 at Ferring in March 1971. Between 1970 and 1980 between 3 and 15 could regularly be found on Goring or Ferring beach however since 1980 only occasional singletons have been seen here. The Sussex wintering population occurs mainly at Newhaven and Littlehampton and it is possible that birds noted in this area are feeding parties from either or both of these sites.

There are 8 spring records of singletons spanning between 4th April (1982) and 24th May (1971) when a number of these have been seen passing eastward at Brighton marina. The earliest autumn record in the county was also noted at Brighton marina on 30th July 1981 and thereafter there were records in August (4), September (2), and October (4). Interestingly, three of these were at Widewater where the only other record was of 4 in December 1967.

DUNLIN (*C. alpina*):- This, the most abundant of the wading birds to visit our area occurs as a common winter visitor and passage migrant. It has been recorded in all months of the year and the records clearly show that the wintering population has increased in number.

In winter, the majority feed on the Adur estuary, an important site for the species, or on the inter-tidal area on the beaches particularly between Worthing and Ferring. Traditional high tide roosts are at Goring Gap and the New Salts Farm and Shoreham airport area.

As the tide rises and falls flocks of Dunlin are recorded moving between roosting and feeding sites; most are seen passing Worthing heading towards the Adur Valley as the tide rises, typical counts being 493 on 26th January 1986, 515 on 24th December 1981 and 350 on 22nd December 1979. Movements, not thought to be locally wintering birds, sometimes hundreds strong have been noted during periods of hard weather.

The following table shows counts from the River Adur in each month between 1978 and 1986 and although far from complete it demonstrates an arrival of the wintering birds in November, a peak in December or January and a notable departure by March.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
January	500	1050	—	1000	1570	1130	450	1030	1400
February	876	—	1400	500	750	1300	600	500	1250
March	600	—	730	30	350	300	620	70	820
April	—	—	—	—	—	17	29	13	8
May	—	—	—	—	—	—	—	—	5
June	—	—	—	—	—	—	—	—	—
July	—	—	—	—	—	—	20	7	6
August	—	—	42	36	18	—	37	33	49
September	20	34	29	24	90	—	29	30	—
October	—	79	13	—	—	190	42	20	17
November	650	593	900	700	450	500	600	520	378
December	600	—	1300	—	1200	1300	900	1000	—

A ringing study of these wintering birds on the Adur was briefly described by Newnham (1976) and confirmed they belong to the nominate race *C. alpina alpina* which breed in the western U.S.S.R. and Fenno-Scandia. Other races, notably *C. a. schinzii* may well occur on spring and autumn migration.

Systematic winter counts have also been conducted at the roost at Goring Gap and these are shown in the following table.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
January	810	320	410	492	850	75	550	350	289
February	1040	300	250	664	360	416	300	300	420
March	—	—	—	200	180	250	—	30	18
November	—	—	400	314	142	0	42	120	102
December	300	300	516	600	270	280	450	370	170

During both spring and autumn Dunlins are regularly seen passing the shore on passage but numbers vary from one year to the next. The spring movements show peaks in both late March and early May with most eastward movement being seen in periods of settled weather and a curious and often substantial westward movement in fierce southwesterly winds. In some years a few late migrants are noted into early June. Although immature birds occasionally spend the summer in their winter quarters (Shrubbs 1979) there are no definite records of summering individuals.

Autumn coastal passage begins in July but not until late October or early November are any large movements seen. Such movements coincide with the arrival of Dunlins on the River Adur and often occur at the same time that large movements of Brent Geese are recorded. The highest daily total in spring is 156 flying eastward on 2nd May 1986 and in autumn, 459 flying westward on 26th October 1980.

Inland records are confined mainly to the Adur Levels although occasional reports are received of singletons flying over the Downs.

BROAD-BILLED SANDIPER (*Limicola falcinellus*):- There are two records of this rare vagrant. One was shot at Shoreham beach in a party of nine Dunlin in late October 1845 and one was present at Hove Lagoon on 6th March 1948.

RUFF (*Philomachus pugnax*):- This passage migrant and irregular winter visitor has been recorded in most of the years between 1953 and 1986 and in all months except June and July. Usually singles or small parties are seen, the largest being 12 in fields near the Sussex Pad on 14th October 1978 and 10 on the Adur Levels on both 19th April 1970 and 5th January 1985, this latter group being associated with harsh weather. Most occur on or near the coastal plain in wet meadows or arable land. During passage periods singles are occasionally seen passing offshore. Reports have been received of Ruff feeding on scraps in town gardens during severely cold winter conditions. The following table, covering the years 1953 to 1986, illustrates the monthly pattern of occurrence:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
29	8	5	14	4	—	—	18	8	22	1	8

As can be seen, most winter visitors are seen in January, the peak of spring passage is in April and autumn passage commences in August with a peak in October.

JACK SNIFE (*Lymnocyrtus minima*):- A scarce winter visitor and passage migrant, recorded in most years between 1953 and 1986 with typically one to four individuals seen each year. Most are recorded from marshy areas, such as permanent grassland of the Adur Levels, reed beds, small pools and ditches, and nearly always in association with Snipe. There are three records from the Downs, probably involving passage birds.

The latest spring record is of one flushed from gorse on the Downs on 25th April 1976 and the earliest for the autumn was noted at Steyning Round Hill on 30th September 1972. The most recorded together is five at Hove Lagoon in January 1971.

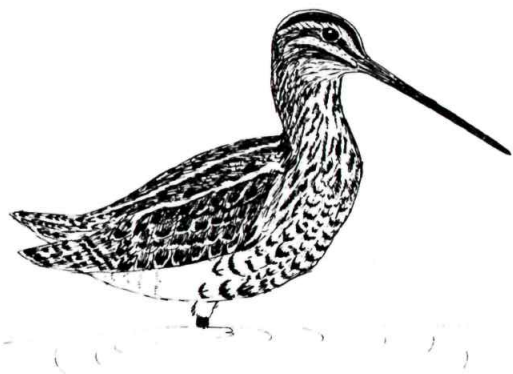
The following table, showing the records between 1953 and 1986, reveals that the majority are seen between December and March.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	13	16	7	—	—	—	—	1	7	11	16

SNIFE (*Gallinago gallinago*):- A resident and winter visitor, mainly to the Adur Levels and river valley down to Shoreham. Although never numerous, it has declined as a breeding species along with other species of wet meadows and now only numbers two or three pairs in the area between Bramber and Henfield whereas in the 1960's and early 1970's at least five pairs could be found between Shoreham tollbridge and Wyckham farm.

In contrast, however, large numbers are frequently recorded in the winter months with a maximum of 1000 on the Adur Levels in January 1982 and "hundreds" near Ferring Rife in the early part of 1985. Up to 80 have been counted on Shoreham airfield (February 1961) and 40 at Brooklands (December 1963 and 1964) with 15 at the Mill Pond, Steyning in January 1966.

Strangely it is rarely seen on migration although small numbers are observed amongst other species in hard weather movements.



GREAT SNIPE (*G. media*):— The only two records are of singles trapped at Sompting on 24th October 1868 and shot at Coney Hill on 18th September 1909.

WOODCOCK (*Scolopax rusticola*):— There have been no proven breeding records of Woodcock in this area although birds have been seen roding over suitable habitat at Patching and Storrington and two adults with two juveniles were found on the Downs in July 1974. There have also been summer sightings at Steyning and Wappingthorne which suggests there is a small breeding population in the area.

Virtually all the other observations of this largely crepuscular species have been between October and March. The best years have been those with particularly harsh winters; in 1963 20 were recorded between 2nd January and 1st February and in 1985 at least 26 were seen. Of these 9 were at Lychpole Hill on 27th January, 8 at Moulsecoomb and several in gardens at Shoreham and Worthing. Between 6th January and 4th March 1985 three flew past Brighton and one was noted passing westward at Worthing.

Late autumn migrants have been seen arriving or passing at Brighton marina, Hove, Southwick, Worthing and Lancing Clump.

BLACK-TAILED GODWIT (*Limosa limosa*):— This species is the less common of the two godwits which regularly visit or pass through the area and has been recorded in the

majority of the years between 1953 and 1986 with sightings in all months except December. Although an occasional winter bird, most are seen on spring and autumn passage. There are two records of summering individuals, probably non-breeding birds.

Most reports are of singles and parties up to four individuals but larger groups do occur, notably 15 passing westward at Widewater on 10th November 1981 and 15 flying eastward at Worthing beach on 2nd May 1986. Sightings are confined to the coast and Adur Valley with the exception of five flying south over Lychpole on 6th September 1978 and a singleton seen flying over the Downs on 19th August 1974.

The monthly distribution covering the years 1953 to 1986 is given in the following table which shows that spring passage birds are mostly seen in May and autumn birds in August.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	5	1	12	44	5	3	28	12	2	17	—

BAR-TAILED GODWIT (*L. lapponica*):— A regular, but not numerous winter visitor and passage migrant, noted feeding mainly on the Adur and occasionally on the foreshore between Worthing and Ferring. In many years between 1 and 6 are seen on the Adur with most occurring in August or September and the maximum of 20 recorded in September 1985. Wintering birds are found more frequently on the beaches west of Worthing and are more numerous in cold weather and here the largest flock was 14 at the Goring Gap roost during January 1985.

Large numbers however, can be seen passing eastward along the shore particularly during the spring. Figure 9 shows how this movement is at its peak during late April

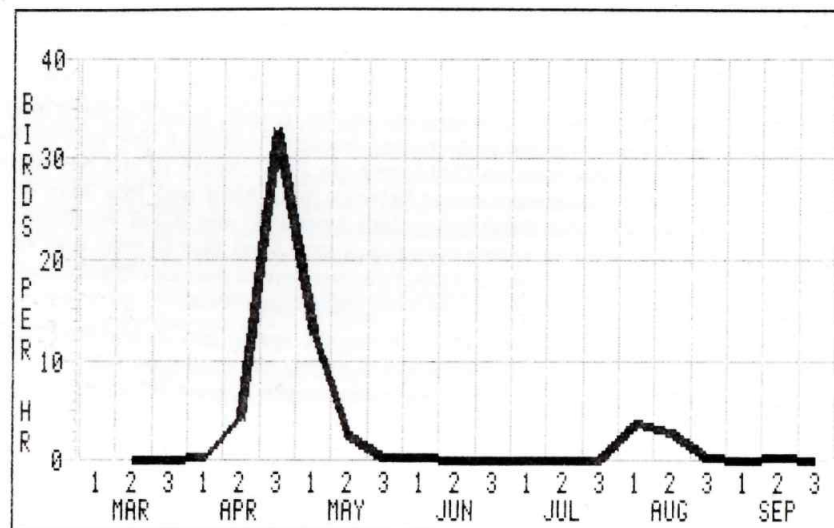


Fig. 9. The rate of passage in 10 day periods of Bar-tailed Godwits passing Worthing (1978–1986).

and early May. Like most species observed passing the coast the numbers fluctuate from year to year with most seen in seasons when a settled period of weather with east to northeast winds occurs in late April. The best spring was 1984 when the total was 9590 which included 3029 flying eastward at Worthing on 29th April and 2019 at Brighton on 27th April.

These movements in the spring of 1984 were described in more detail by Newnham (1984). Other large movements were 2266 on 26th April 1980 and 2146 on 3rd May 1980. In some years only a fraction of these numbers are seen and at other seasons there are only a few records of coastal movements usually during the early autumn or during severely cold winter weather.

The most extraordinary records were at Worthing beach where a flock of 100 passed south-westward on 9th August 1985 and 160 flew in the same direction, apparently having flown over Worthing, on 13th August 1985. The only other record away from the coast and river was of a single flying west at Cissbury on 8th August 1984.

WHIMBREL (*Numenius phaeopus*):- The pattern of records show this to be a regular passage migrant and rare summer and winter visitor. The following table of approximate numbers recorded on the Adur since 1954 show marked peaks during the spring and autumn.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	1	—	29	92	—	22	66	33	12	2	—

On the Adur parties of up to 13 have been recorded in May and groups of 8 have been seen in autumn. The earliest, and possibly a wintering individual, was seen near Cuckoo's Corner on 20th February 1984 and the latest was on 21st November 1959. The latest record in the spring was of a single at Widewater on 1st June (1984) and the same year produced an early autumn record of a single over Mill Hill on 1st July. One seen on the Adur Levels on 19th June 1983 was possibly summering.

Larger numbers have been recorded passing the shores, usually in an eastward direction and often associated with other migrating waders. Although the first spring records were of 3 passing Brighton on 23rd March (in 1984), figure 10 and Newnham (1984) show the largest movements occur between mid April and mid May with maxima of 243 flying eastward at Brighton on 24th April 1983 and 203 at Worthing on 7th May 1980. Numbers seen on spring seawatches vary from year to year with 1984 producing the record eastbound total of 1469. Fewer are noted passing offshore during the autumn with 60 flying east on 8th August 1968 being exceptional.

Whimbrel are regularly noted turning inland during the spring and several have been seen or heard away from the coast or river valley during the migration seasons. The largest flocks were 24 passing south over the downs on 6th August 1973 and 20, also flying south, over Wiston on 14th August 1985.

CURLEW (*Numenius arquata*):- This species is mainly a spring and autumn passage migrant and, to a lesser extent, a winter visitor. There are no breeding records.

Although most birds are seen moving offshore (see figure 10), singles or small parties are regularly observed flying over the downs in the latter half of the year, notably in

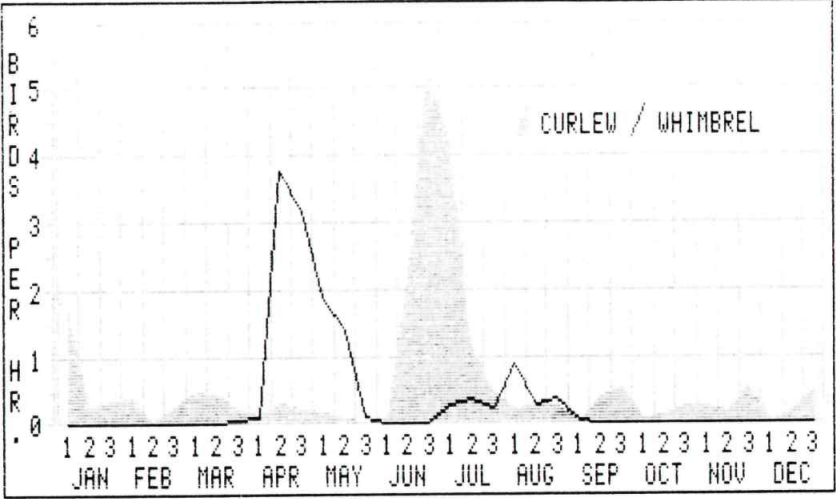


Fig. 10. The rates of passage in 10 day periods of Curlew and Whimbrel at Worthing (1978-1986).

October and November suggesting that some overland, as well as coastal, migration occurs. The highest total in a day was 53 on 16th October 1980.

Wintering birds seldom remain for any length of time, the largest parties appearing in periods of hard weather when 61 flew westward offshore at Worthing on 8th January 1985, 15 were on Shoreham airfield on 21st January 1985 with 16 there on 3rd February 1961 and "many" were noted during the severe winter of 1963.

In Sussex, most wintering birds congregate outside the recording area in Chichester and Pagham harbours which are preferred both as feeding areas and roost sites. Generally few are found in seemingly suitable local habitats such as those represented by the Adur Valley and coastal mudflats, generating speculation that more would utilise these sites but for the adverse factors of human (and canine) disturbance, the probable reduction in invertebrate food items (such as lugworms and ragworms) caused by bait digging, possible environmental pollution, and inadequate nearby high-tide roosting areas which this species prefers.

The following table shows the total of Curlews seen passing the beach at Worthing in each month for the years 1978 to 1986.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	2	13	95	190	81	1	—	—	—	—	5	—
No. flying west	112	13	10	47	30	150	83	37	56	29	63	39

Westward movements in the winter months are usually prompted by cold weather; the spring passage extends from March to May and in recent years, regular sea-watching in June has highlighted a marked westerly return passage, probably involving adult birds (Cramp and Simmons 1983), throughout the month and continuing into July and August, with juveniles arriving later in the autumn.

SPOTTED REDSHANK (*Tringa erythropus*):- This uncommon passage migrant and occasional winter visitor has been recorded in 18 of the years 1953–1986 and in only seven years since 1971. Most are reported from the River Adur, Adur Levels, Widewater or passing offshore although there is a record of a singleton flying over Chanctonbury Ring on 6th September 1986.

Records in each of the years 1959 to 1965 show a single bird arriving on the Adur in late August and staying until March. These probably involve the same individual returning to winter each year. There are five other winter records for late November to late February.

Most sightings are of single birds, however, four were present on the River Adur on 17th August 1960, six flew east off Worthing with four Greenshank on 7th May 1975 and three flew eastward there on 22nd April 1986. No more than six individuals have been recorded in any one year. The following table covering the years 1953 to 1986 indicates that this species occurs mainly as an autumn migrant and to a lesser extent in spring and winter.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	—	5	—	2	—	10	8	9	1	1

REDSHANK (*T. totanus*):- If not the most numerous then certainly the most familiar of waders, the Redshank is the typical bird of the Adur saltings and formerly must have been a widespread breeding species in the river valley.

From a surveyed total of 14 to 16 pairs in 1965 (Shrubbs 1967), and still 10 pairs all north of Steyning in 1981 (Mitchell 1981) it has declined to only two pairs in 1985.

In the autumn and winter, as with the Dunlin, the largest numbers are found on the river mudflats at Shoreham with smaller scattered groups on the intertidal zone mostly between Lancing and Ferring. The following table shows monthly counts from the River Adur for each month between 1978 and 1986 and although incomplete gives an impression of the numbers and pattern of occurrence. Some of the counts are taken at the high tide roosts which vary in position from New Salts Farm, Shoreham airfield or on the saltings near to the Norfolk Bridge. Numbers seen on the river vary too as many Redshank can be found feeding on nearby grassland and farmland in wet periods.

Table showing monthly counts of Redshanks on the River Adur.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
January	50	250	120	130	231	116	115	116	148
February	100	150	80	185	128	300	110	70	160
March	—	—	—	—	60	43	73	60	29
April	—	—	—	—	—	—	—	—	2
May	—	—	—	—	—	—	—	—	—
June	—	20	—	—	—	39	—	27	10
July	—	65	—	74	—	65	72	—	—
August	—	—	108	130	58	80	75	54	80
September	—	69	120	131	57	—	130	102	69
October	—	76	—	—	100	104	60	46	130
November	—	68	—	124	90	130	158	94	77
December	—	—	185	—	103	68	93	107	129

The largest count was 300 in February 1983. A total of 68 Redshank have been ringed on the River Adur and the only recovery was from Langstone Harbour in Hampshire in mid March some four months after being ringed.

Few Redshank are seen on migration as demonstrated in the following table showing the grand monthly totals seen at Worthing between 1978 and 1986. There is a small westerly movement in cold weather and equally small eastward movement in the spring.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	10	10	46	19	23	—	1	2	16	51	20	4
No. flying west	42	1	3	4	43	2	7	10	16	54	38	14

A total of 42 flying westward in two flocks on 6th May 1986 was most unusual and is the highest number noted passing in one day.

A creamy coloured individual frequented the Adur mudflats in 1985 and 1986.

GREENSHANK (*T. nebularia*):- A passage migrant in small numbers with more occurring during the autumn than in the spring. It has been noted in all months except February and December and has gone unrecorded in only three of the years between 1953 and 1986.

Most are seen either on the River Adur, Adur Levels or passing offshore, and it is recorded less frequently at Widewater, Shoreham sanctuary and the coastal beaches with the occasional bird noted in flight over the downs or coastal plain. Generally singles or small parties are involved, the largest being nine on the River Adur in September 1986 and eight flying westward over Durrington on 11th September 1984. Offshore, most are recorded in spring with typically between one and five individuals but 1984 was exceptional with a total of 20 flying eastward and one westward, the peak being eight on 5th May.

All early and late dates involve sightings of single birds on the River Adur and records for spring span between 15th March (in 1959) to 7th June (in 1983) whereas those for autumn occur between 24th July (in 1963) and 5th November in 1978.

The following table illustrates the monthly distribution for the years 1953 to 1986 and shows the spring passage commencing in April with a peak in May and the peak in autumn occurring in September.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	—	1	13	29	1	5	58	80	20	1	—

Early autumn migrants in July and early August comprise mainly adults with juveniles predominating from mid-August (Cramp and Simmons 1983). It is not unusual for autumn birds to remain for several weeks.

There is one winter record of a singleton on the River Adur on 2nd January 1963.

GREEN SANDPIPER (*T. ochropus*):- A passage migrant that regularly winters in small numbers, the Green Sandpiper is not a particularly common bird in this area especially away from its favoured haunt of the Adur Levels. Only small numbers

winter there and other January records come from Brooklands pool, Woods Mill and Ferring Rife where winter records are increasingly regular.

These same sites with Cuckoo's Corner on the River Adur, Washington sand pits and Small Dole provide the majority of passage records which are mainly in April during the spring and between July and September in the autumn. A count of 12 on the Adur Levels on 9th July 1980 is the highest number recorded in autumn and 10 at the pools near Small Dole refuse tip on 20th April 1982 is the largest spring gathering.

WOOD SANDPIPER (*T. glareola*):- Recorded in only seven of the years between 1953 and 1986, this species remains a rare passage migrant and was last reported in 1981. There have been seven individuals recorded during the autumn with one seen in July, three in August, two in September and the latest at Strivens reed bed on 5th and 6th October 1980. Most sightings have come from small pools on rubbish dumps at both Shoreham and Worthing.

COMMON SANDIPER (*Actitis hypoleucos*):- Like the Green Sandpiper, it is a passage migrant and occasional winter visitor. It has been recorded in every month of the year. In 1967 two were present at a small pool on Worthing refuse tip from 1st May to 7th August but there was no evidence of breeding. Numbers are at their highest in late July and August when, in 1978, a maximum of 26 were counted on the River Adur north of the tollbridge at Shoreham.

Although the river is the favoured site, any small area of water with a muddy fringe be it a pool, ditch, farm pond, downland dew pond or river bank, will provide a stopover and feeding habitat in the autumn. In the 1950's the pool on Shoreham refuse tip attracted up to 15 birds.

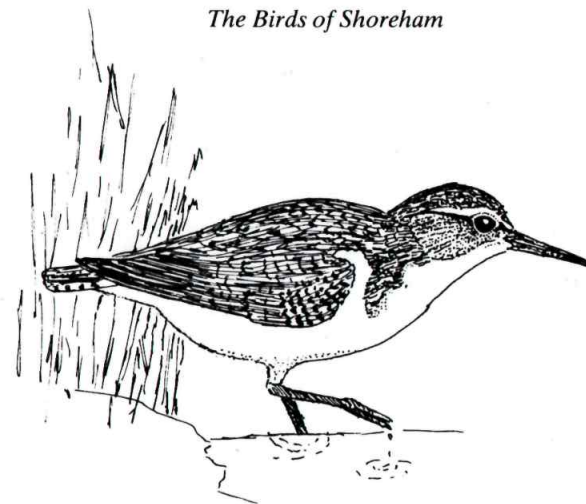
May is the principal spring month and again the river bank is a good site but birds are regularly seen at Widewater (maximum of 5) and Brighton marina where 9 out of the area's 1982 spring total occurred on 11th May.

In the winter single birds have been recorded at Shoreham, Brooklands, Small Dole and Steyning.

SPOTTED SANDPIPER (*A. macularia*):- One shot at Shoreham on 27th November 1908 is the sole record.

TURNSTONE (*Arenaria interpres*):- Typically a wader found on rocky shores the Turnstone is most frequently seen on the coast between Widewater and Ferring during the winter months. The peak numbers occur in April and November when up to 25 have been recorded but only six or seven normally stay through from December to February although 14 were counted at Ferring on 10th February 1979.

A flock of 14 at Cuckoo's Corner on 28th August was unusual and presumably a party on passage. Other passage birds are noted passing the beaches and the following table showing the monthly totals at Worthing for the years 1978 to 1986 inclusive suggest the Turnstone is only regularly seen flying eastward in April and May.



	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. flying east	—	2	7	210	439	—	2	2	1	—	5	22
No. flying west	6	—	—	14	43	—	—	10	8	22	6	5

A large proportion of these birds were seen in 1980 when the spring total was 386 flying eastward which included 115 on 1st May and 98 on 3rd May.

RED-NECKED PHALAROPE (*Phalaropus lobatus*):- Singles at Brooklands pool on 16th September 1948 and on Hove lagoon in September 1952 are the only records in this century. However, there are notes of three earlier individuals shot either at Shoreham or Worthing in September of 1845, 1852 and 1899.

GREY PHALAROPE (*P. fulicarius*):- This species is an uncommon autumn migrant and rare winter visitor which has occurred in only 12 of the years between 1953 and 1986, with more regular appearances in the 1950's during which there were between one and seven in each of the years between 1954 and 1960 (excluding 1956). There were none from 1960 until 1963 (3), then no sightings until 1970 (2) and again none until 1981 (8). It was last recorded in 1984.

Most birds are seen either moving westward offshore, in Shoreham harbour, or on one of the coastal pools, e.g. Widewater, Brooklands or Hove lagoon. There is an old record of five together on Widewater on 17th October 1891.

It is the most pelagic of the phalaropes, migrating well offshore and influxes occur only during or after periods dominated by vigorous Atlantic depressions with their associated south-westerly gales, bringing some of these birds onshore or within sight of the coast. These conditions prevailed in 1981 when eight different birds were seen between 22nd September and 17th October.

Generally single birds are involved although there is a record of five at Widewater on 5th October 1960, the largest number seen together. All records are for the months

September to December, with the earliest on 22nd September 1981 and a peak in October as the following table covering the period 1953 to 1986 shows.

September	October	November	December
7	25	14	3

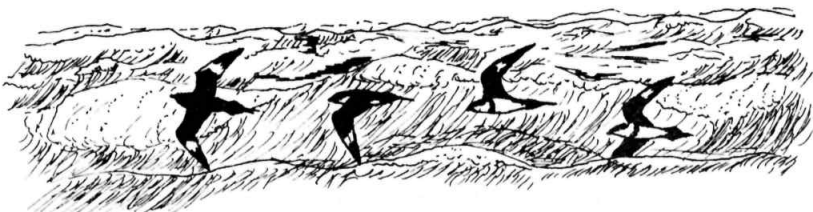
The three December records, which interestingly include an individual on the Goring Gap wader roost on 11th and 12th December 1982 possibly involve wintering birds as most should be in their winter quarters at sea off West Africa or South America by the end of November (Cramp and Simmons 1983).

POMARINE SKUA (*Stercorarius pomarinus*):- Although there is a record of a small party being blown inland at Shoreham on 24th October 1882 in recent years this species was first recorded on 1st November 1957, and until 1986 it has been recorded offshore in 13 years with a total of 580 sightings. The combination of an increased commitment to seawatching, a succession of good springs and the increasing tendency for this species to pass through the English Channel on spring migration heavily weights the distribution of these records to the 1980's, indeed 97% of the records occur in this period. The best year was 1984 when the total of 182 included 109 passing eastward at Brighton and 64 at Worthing on 14th May. The following table clearly shows May, with 96% of the records, to be the peak month:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	—	1	7	559	3	—	—	1	4	3	1

Although spring records span between 10th March (in 1970) and 6th June (in 1985), the graph plotting the rate of passage indicates more precisely the period in mid-May to be the peak. Typically in spring, Pomarine Skuas are seen in settled weather with winds blowing between south and east, however, the largest movement on 14th May 1984 occurred during a northeasterly wind. Unlike the other skuas this species is regularly seen in flocks, the largest of which was 51 seen at Brighton also on 14th May 1984.

The few records from the autumn have been noted during severe onshore winds and the winter records were of singles at Widewater on 7th January 1983 and passing Worthing on 21st December 1985.



ARCTIC SKUA (*S. parasiticus*):- This, the commonest species of skua, has been seen in most years since 1956 and recorded offshore in each month of the year. Like most seabirds, however, most observations come from recent years with 83% of the 1155 records being noted between 1981 and 1986. The number of Arctic Skuas seen in each

year depends, to some extent, on the time spent seawatching and on the weather during the migration seasons.

The ideal conditions, described by Newnham (1983), are fresh to strong onshore winds which bring more birds in sight of the coast; such conditions occurred regularly in 1983 and 1986 when 191 and 230 were respectively recorded. Likewise, these conditions have induced the largest daily movements in both migration seasons with 50 seen on 4th May 1986 and 22 on 16th October 1982.

Only 17% of the records fall outside April or May but the precise timing of the migration is clearly shown in the graph (figure 11) and shows the peak to be the first period in May, marginally before the peak of movement for the Pomarine Skua. Both migrations are more protracted than the Pomarine Skua with records regularly starting in late March and continuing throughout the summer. The graph also shows two peaks occurring later in the year; the first in October and a second in December with the last record on 24th December 1985. They are at their scarcest during January and February with only singles noted off Brighton in January 1956 and off Worthing in February 1984.

Virtually all the records are from the coast but 2 flew northeast over Hove on 9th May 1957 and 2 were seen over Steyning on 3rd October 1980.

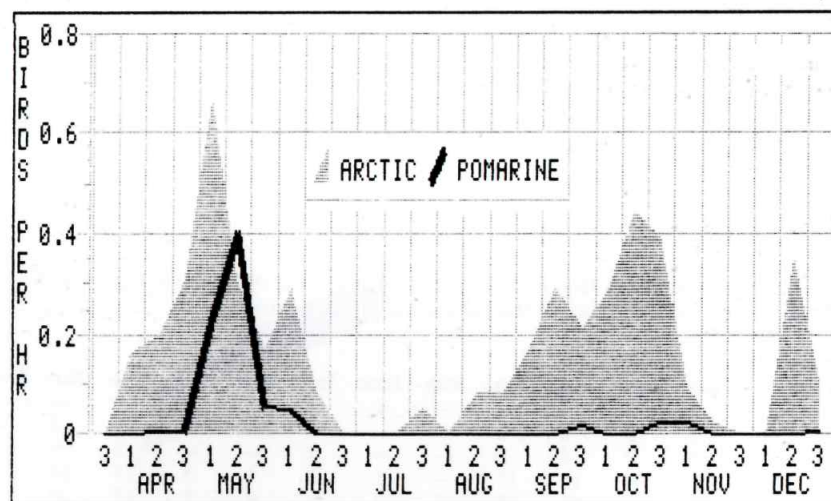


Fig. 11. The rate of passage in 10 day periods of Arctic and Pomarine Skuas seen at Worthing (1978-1986).

LONG-TAILED SKUA (*S. longicauda*):- The only two accepted recent records were a juvenile flying westward at Widewater on 11th September 1981 and an adult flying eastward at Brighton on 16th May 1984. However the Booth Museum has records of three from the 19th century; singles caught near Brighton in November 1844, shot whilst swimming on flooded water meadows near Henfield on 7th October 1862 and shot at Brighton sometime in 1870.

GREAT SKUA (*S. skua*):- Knox noted the Great Skua or Bonxie as the scarcest of the regularly occurring skuas and this situation remains with only 165 sightings occurring since 1957. From 1978 it has been recorded annually but prior to this there were only 8 records from 6 different years. This increase purely reflects the increased interest in seawatching in recent years. The best year was 1986 when 50 were seen which included the largest daily movements of 8 on 16th April and 7 on the 22nd April. The monthly distribution of these records is shown in the following table:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	1	2	72	31	4	—	1	7	32	4	6

Although Bonxies are seen offshore in most months they are most regularly seen in the spring and autumn with peak periods in mid-April and again in mid to late October. Most Bonxies are seen in singles, with groups in excess of 2 being rare, and most are seen in conditions of fresh to strong onshore winds. All the records come from the coasts except one, found dead at Wiston on 18th November 1940 and one which departed north-west from Widewater over Lancing on 22nd April 1986.

GREAT BLACK HEADED GULL (*Larus ichthyaetus*):- One seen at Hove on 9th August 1932 is the only record.

MEDITERRANEAN GULL(*L. melanocephalus*):- There were no acceptable records in Sussex before 1950 (Shrubb 1979). The first in this area was in 1956, since when sightings have occurred in all bar three years and have been increasingly regular with at least 15 individuals seen in 1984.

	1953-1959	1960-1969	1970-1979	1980-1986
No. of different birds	8	16	47	71

The following table shows that Mediterranean Gulls have occurred in each month but fewer have been recorded during the summer and early autumn.

Monthly totals	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956-1959	—	2	4	—	—	1	—	1	1	1	—	—
1960-1969	2	5	2	2	—	—	2	3	1	2	4	4
1970-1979	10	7	4	6	—	—	2	—	—	3	8	10
1980-1986	11	6	11	17	—	1	6	4	5	11	14	5
Total	23	20	21	25	13	2	10	8	7	17	26	19

Until the late 1970's most were recorded during the winter with individuals being regularly seen overwintering at sites like Widewater or Hove lagoon. Some of these records may have involved the same birds returning in successive winters. During the 1980's a higher proportion (58% compared with 25% prior to 1980) have been recorded in the spring passing along the coast. Most of the observations have been from coastal sites but birds have been seen over the downs and at both Sompting and Small Dole refuse tips.

An adult trapped at Hove on 15th January 1977 had been ringed as an adult in Belgium in April 1972.

LITTLE GULL (*L. minutus*): Although seen in every month the pattern of records show this to be mainly a passage migrant with a few noted during the winter. During the 1950's and 1960's there were several years when none were recorded but since the mid 1970's many more have been seen. This increase is partly due to an increase in the breeding population in the Baltic states and partly due to more time spent sea-watching. The following table, showing the monthly occurrence prior to 1978 and totals seen passing Worthing between 1978 and 1986, demonstrates that prior to 1978 most were seen in the autumn whereas subsequently more have been seen in the spring. The movements in the English Channel are, as expected, in an easterly direction during the spring and westward during their autumn.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total (1953-78)	5	2	4	4	7	1	1	2	14	10	12	3
No. flying east	4	8	8	107	271	1	—	—	3	4	3	8
No. flying west	—	—	1	14	2	—	—	3	18	81	68	17

The table only notes those seen passing Worthing but in each year many others are noted passing other points along the coast particularly at Hove and Brighton.

Numbers fluctuate considerably each year with the best years being 1981 and 1984 when the respective totals were 153 and 185 different birds. The best coastal movements in the spring are seen with other seabirds when the winds are blowing from the southeast; in such conditions 43 flew east on 7th May 1981 and 54 passed on 11th May 1982. Fresh onshore winds also bring more in sight of the coast in the autumn with 31 flying west on 22nd November 1981 being the best movement.

The only records away from the coast were of singles over Lancing on 30th June 1969 and at the Adur Levels on 29th January 1984.



SABINE'S GULL (*L. sabini*):- There are just five records of this scarce species, all singles — found moribund at Hove in September 1871, at Flood Arch on 2nd September 1956, passing west at Worthing on 3rd January 1979 and 11th May 1983 and in Brighton marina on 28th September 1984.

BONAPARTE'S GULL (*L. philadelphia*):- a first summer at Portobello, Brighton on 20th June 1971 is the only record.

BLACK-HEADED GULL (*L. ridibundus*):- This is the commonest species of gull recorded throughout the year but particularly numerous from late July until late March. It is found virtually everywhere feeding on farmland, on refuse tips, in urban gardens and along the shore. Each evening large flocks gather to roost on the beach or, in stormy conditions, in the Adur Valley.

The British wintering population of this species is increasing (Bowes *et al.* 1984) and in Sussex a coordinated winter roost count in 1983 showed there had been a 27% increase in just 5 years (Newnham 1983). Records in this area too show an increase in numbers as note was made of 3800 on 24th September 1958, 2000 on the River Adur, Brooklands and Worthing refuse tip in 1966 and 7000 were counted on 7th January 1969. The first large count was of 20,000 on Shoreham airfield on 15th January 1972 and thereafter there have been several winter counts of up to 40,000 there during gales or at times when the airfield was flooded. Coastal counts have also been impressive; the coordinated counts between Brighton and Ferring revealed 39,266 on 20th January 1979 and 27,000 on 26th January 1983, however, counts of c. 100,000 between Worthing and Shoreham on 25th December 1981 and 50,000 at Worthing on 5th September 1979 are considerably larger.

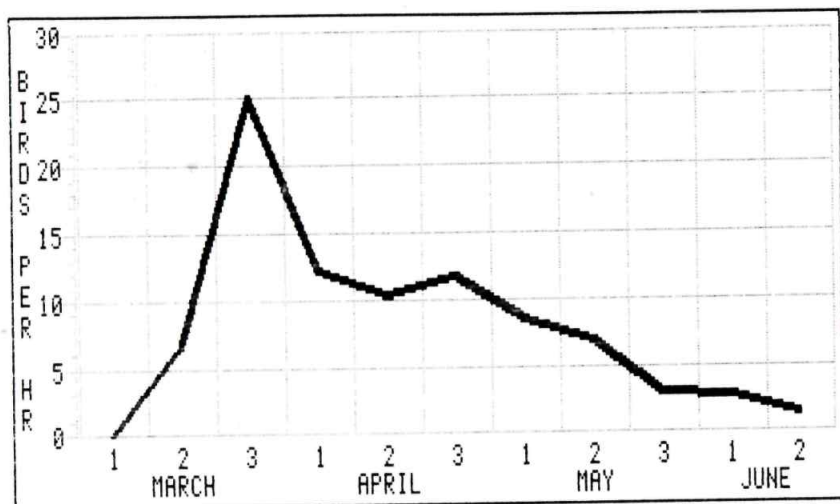


Fig. 12. Black-headed Gulls passing eastward at Worthing in 10 day periods during spring (1978-1986).

After late March when most of the wintering population have departed there is a notable eastward passage along the coast. This is most obvious during the evenings when light westerly winds are blowing and many of the flocks are predominantly immature birds.

The largest movements were in 1984 when 3000 flew east at Worthing on 29th March and 4500 passed westward at Brighton marina on 1st April 1984. Figure 12 shows how this passage declines through April and May. Numbers are at their lowest in June, only 162 were found roosting on Worthing beach on 21st June 1981, but by July adult birds have returned with sample counts at Worthing in 1981 showing 4184 on 18th July, over 9000 by 29th August and 33,500 on 29th September. The largest visible movement in the autumn was 35,000 flying westward at Ferring in 2 hours on 14th October 1982.

Since 1975 Black-headed Gulls have been studied by an extensive ringing programme; by 1985 over 15,000 had been ringed and the 610 recoveries are described in detail by Newnham (1985). During the study over 100 birds have been trapped which had previously been ringed as nestlings. The following map plots the sites where these birds have originated and it is clear that most are from the Low Countries, the Baltic States and Fennoscandia.

There have been several records of leucistic or albino Black-headed Gulls between 1953 and 1986.

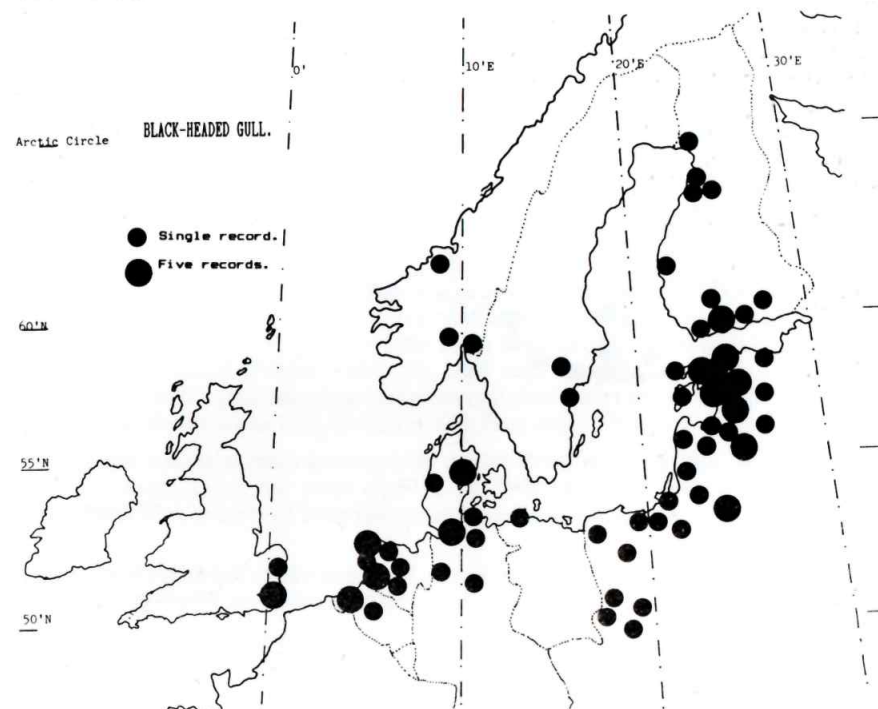


Fig. 13. Sketch map showing the sites where nestlings ringed and subsequently retrapped at Worthing.

RING-BILLED GULL (*L. delawarensis*): A first winter on the River Adur at Shoreham on 11th and 22nd January 1985 is the only record in this area and was the second record for Sussex.

COMMON GULL (*L. canus*): Like most gulls this species is recorded throughout the year with most being noted during the spring and autumn migration periods. Although flocks of between 2–600 have been regularly noted on the downs in the late autumn and early spring, the largest numbers are recorded on the coast where in the spring there are counts of 7000 at Southwick on 19th March 1979, and 3000 on Shoreham air-

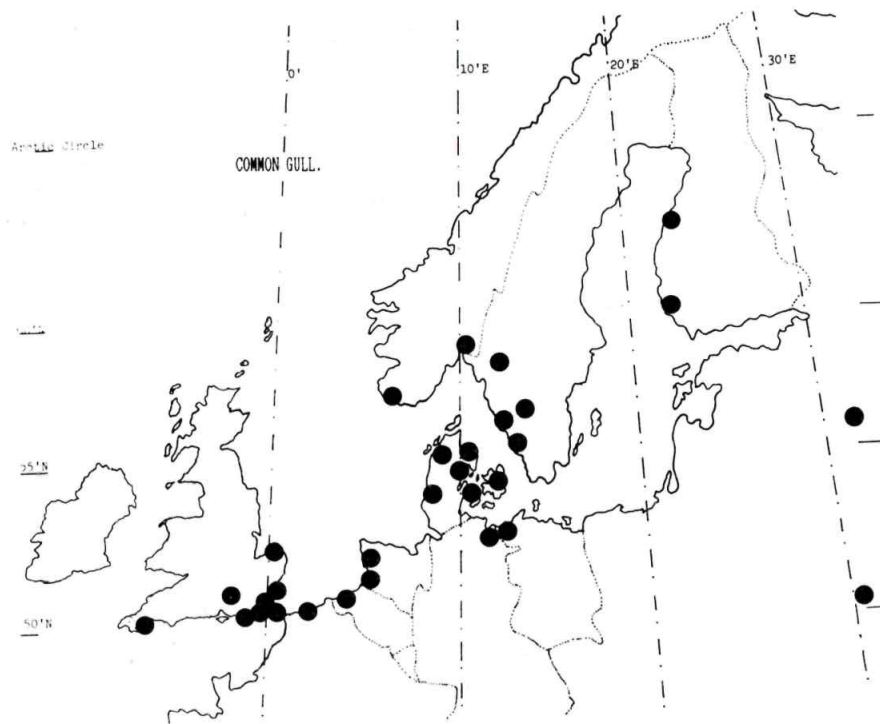


Fig. 14. Sketch map showing all movements recorded by ringing at Worthing.

field on 8th April 1979 and at Worthing on 7th April 1982. Autumn roost counts at Worthing include c. 10,000 on 27th September 1979 and 6700 on 29th September 1981.

The species is common in the winter but the peak winter counts of 2000 on Shoreham airfield on 28th January 1978 and 3653 roosting between Brighton and Ferring on 26th January 1983 are less than those during spring and autumn.

Least are found in June when small parties of immatures frequent the beaches and River Adur. The first returning adults usually appear in early July although adults have been noted as early as 14th June. A few are noted passing the coast in the spring

but at Worthing between 1978 and 1986 the total is less than 3000 in nearly 4000 hours of observations, the largest movement of 389 flying eastward was noted at Brighton on 4th April 1984.

Between 1975 and 1986 over 600 Common Gulls have been ringed in the area and the map plots the recoveries generated by this study.

LESSER BLACK-BACKED GULL (*L. fuscus*): The least numerous of the regularly occurring gulls and the records from the coast, River Adur and local refuse tips suggest that this species is mostly encountered during the spring and autumn migrations. Counts on the River Adur are usually less than 30, the exceptions being 115 on 29th September 1955 and 50 during September in 1981. Coastal numbers are even fewer except in spring when occasional small parties are noted flying eastward but the totals are generally small with 105 passing Worthing in spring of 1982 and 73 passing Brighton in 1984.

Up to 15 have been noted on Worthing beach during the summer and in 1983 a pair held territory amongst the breeding Herring Gulls on the roof tops in Worthing. Winter records involve few birds however, the largest and most unexpected count occurred in this season when 1000 roosted on Shoreham airfield on 28th January 1978.

Both races are recorded and the records suggest the darker Continental race (*L. f. fuscus*) is most numerous in the spring whilst *L. f. graellsii* predominates at other seasons.

The only interesting movement shown by ringing was an adult of the race *L. f. graellsii* which was ringed in March 1984 and found in the following July in the Faeroes.

HERRING GULL (*L. argentatus*): A common species seen throughout the year either on the coast or scavenging at one of the local refuse tips. This is the only species of gull to breed regularly and successfully in the area and the numbers are increasing. Breeding on roof tops near the coast has been a growing trend nationally (Monaghan and Coulson 1977) and locally was first observed in Brighton and Hove in 1973 and in Worthing in 1974 (Shrubbs 1979). By 1983 there were 24 pairs nesting in Brighton and 23 pairs in Worthing (Prater 1984). In 1986 roof top nesting was also noted in Shoreham. As well as the breeding adults several immatures spend summer in the area with counts at Worthing in 1981 of 452 on 20th June and 750 on 29th August.

There are few counts at other seasons; 560 on the River Adur on 16th December 1982 and roost counts along the coast of 3312 on 28th January 1978 and 1380 on 26th January 1983.

Between 1975 and 1986 gulls have been ringed in this area; the recoveries from 1066 ringed Herring Gulls are plotted on the map and show that most migrate relatively short distances.

Individuals of the yellow-legged race (*L. a. michahellis*) have been recorded annually since 1975. Prior to this there was only a single record in December 1958. Most of this race are noted in the Adur Valley particularly at Small Dole refuse tip and the following table demonstrates the main occurrence in the early autumn with the peak of 90 in July 1982.

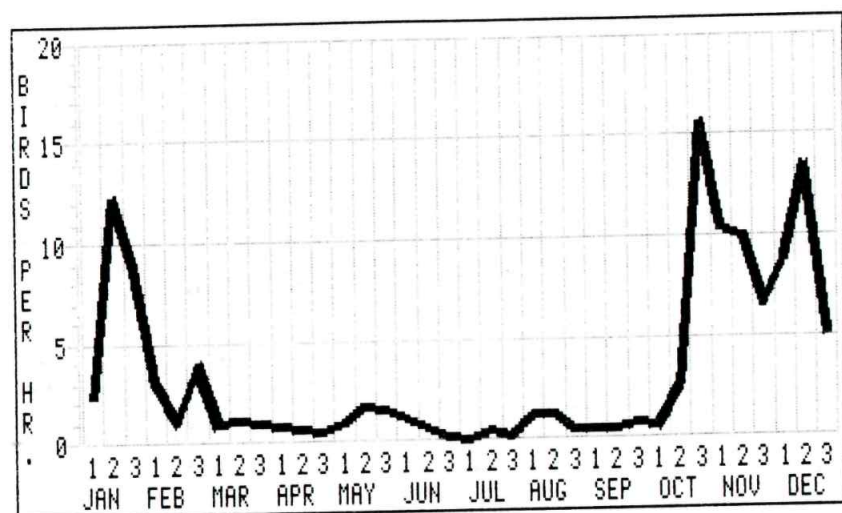


Fig. 16. Kittiwakes seen in each hour's observation in 10 day periods at Worthing (1978-1986).

GULL-BILLED TERN (*Gelochelidon nilotica*): One at Shoreham on 17th September 1950 and one passing eastward at Ferring on 26th April 1984 are the only two records.

CASPIAN TERN (*Hydroprogne caspia*): The three records are of singles at Worthing on 30th April 1969 and 16th May 1971, and one 7 miles off Shoreham on 28th July 1981.

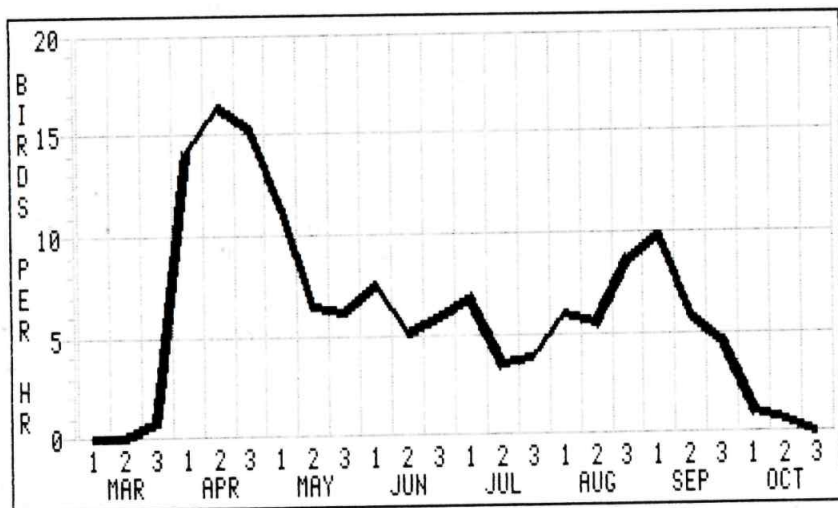


Fig. 17. Rate of passage of Sandwich Terns noted at Worthing in 10 day periods (1978-1986).

SANDWICH TERN (*Sterna sandvicensis*): This species is rarely seen away from the coast where it occurs as a migrant passing or feeding offshore; records span between 13th March and 14th November but the largest numbers are seen passing eastward during April and early May. The spring passage is fairly constant from one year to the next as each season produces an overall rate of between 8 and 10 birds per hour during April and May.

However, 1983 was an exceptional year when the eastbound total seen from Worthing was 5654 and from Brighton 5816; this movement included the largest daily total of 1248 on 10th April 1983. Most of the large spring movements are noted during periods of fresh to strong on shore winds and particularly when the wind direction swings between south-east and south-west.

Figure 17 not only shows the pattern of the spring passage but also clearly shows the rate of passage during the summer and autumn to be less than the spring. A steady, mainly westward, movement can be observed offshore during August and September particularly in south-west winds; the largest numbers recorded include 605 flying west on eight dates in August 1971 (maximum in one day of 148), 60 flying west on 24th August 1975 and 60 passing east in 1 hour on 9th September 1981.

A rare winter visitor with records near Shoreham harbour or Hove lagoon in January 1974, December 1975, January 1982, February 1983 and February 1985.

ROSEATE TERN (*S. dougallii*): The total of 39 individuals since 1968 shows this to be an unusual migrant. The numbers seen in each year are shown in the following table:

1968	1971	1973	1978	1980	1981	1982	1983	1984	1985	1986
2	6	7	1	4	5	2	2	4	2	4

The more regular observations during the 1980's are undoubtedly a reflection of the marked increase in time spent seawatching during the spring. This is emphasised further by looking at the monthly distribution of the records.

April	May	June	July
2	32	2	3

Most of the sightings refer to birds moving along the coast; however in 1971 two were seen on East Worthing beach on several days between 26th April and 2nd July.

COMMON TERN (*S. hirundo*): Few are specifically recorded on the coast although the great majority of terns seen passing close to the shore in spring are of this species. Regularly seen resting and feeding on the River Adur between July and September, and occasionally until mid October, with the maximum of 37 on 3rd August 1981.

ARCTIC TERN (*S. paradisaea*): Like the Common Tern few are specifically recorded on passage along the coast. In most years only one or two are identified but on 18th April 1978 in 2 hours 173 passed east at Hove. Undoubtedly Arctic Terns were more

abundant on the Sussex coast in 1978 as the only other record of note is of 30 feeding off Southwick on 20th April 1978.

COMMON/ARCTIC TERN:- Nearly all the records for Common and Arctic Terns have been noted as "Comemics". The extreme dates are 29th March 1981 and 7th November 1957 but the largest numbers are noted passing, usually eastwards, during the spring migration.

Numbers seen each spring fluctuate considerably largely depending on the weather during late April and May: seasons with the regular passage of frontal systems and periods of winds from the east or south-east being the best. Thus in 1983 a total of 10,550 were noted at Worthing whereas in 1982, despite similar periods of observation only 1939 were seen.

Figure 18 shows a peak of movement in early May although the largest number seen in a single day was 3084 on 20th April 1983. Movements continue well into June and in 1984 totals of 996 and 913 passed east on 1st and 3rd June respectively.

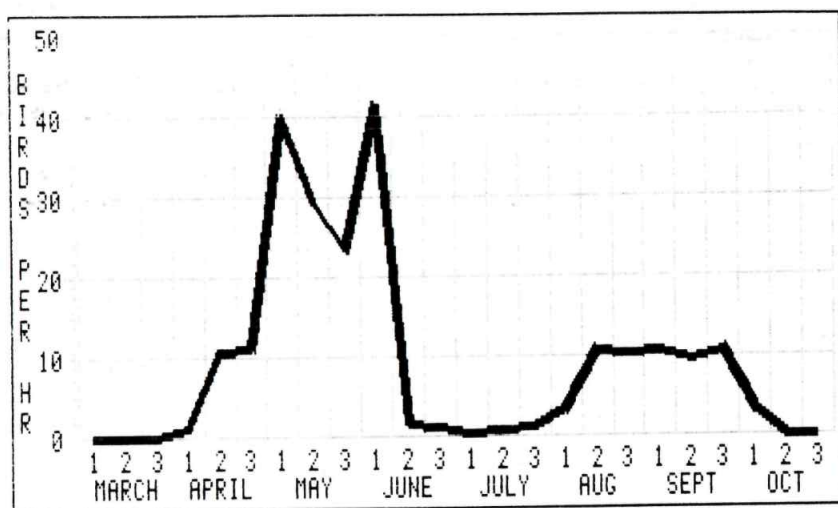
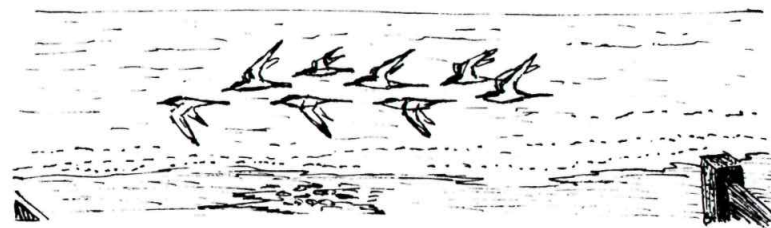


Fig. 18. The rate of passage of Common/Arctic Terns seen at Worthing in 10 day periods (1978-1986).

Autumn movements are never spectacular; better examples include 225 at Ferring on 4th September 1961, 400 there on 24th August 1975, 348 passing west at Worthing on 21st September 1980 and a total of 689 flying west there in the autumn of 1982. In the late 1950s there were regular records in late October and early November but during the past few years observations have only extended into mid October.

Unlike the other species of terns there are regular records in both migration seasons of small parties moving overland.



SOOTY TERN (*S. fuscata*):- One obtained at Brighton on 24th April 1911 was the first record in Sussex.

LITTLE TERN (*S. albigrons*):- Records span between singles at Worthing on 3rd April 1985 and at Southwick on 9th October 1972; however, most are noted by sea-watchers during spring.

The histogram (figure 19) shows the pattern of this migration quite clearly with the peak movement in May. Curiously the highest annual totals of eastbound birds are very similar with 699 in 1980, 687 in 1983, 636 in 1984 and 638 in 1986. There have been only four days when more than 100 have been recorded and each of these was a day with light or moderate south-easterly winds; the best total was 152 flying east on 11th May 1982.

During August and September small numbers are seen on the River Adur with 12 in 1976 being the largest count. Along the coast they are remarkably scarce during the

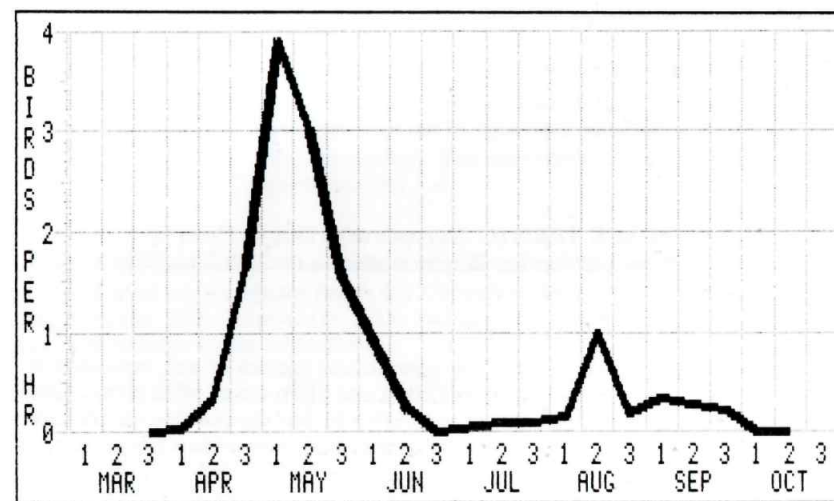
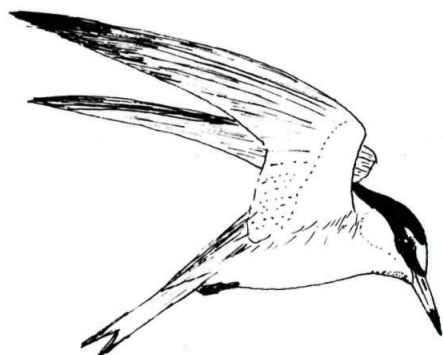


Fig. 19. The rate of passage of Little Terns seen at Worthing in 10 day periods (1978-1986).



autumn with the notable exceptions of 80 recorded in 1971 and 52 during autumn sea-watches in 1985.

WHISKERED TERN (*Chlidonias hybrida*):- One in full summer plumage passed eastward at Worthing on 25th May 1985.

BLACK TERN (*C. niger*):- A regular passage migrant with the earliest record on 12th April 1981 and last noted on 21st October 1967.

Most have been recorded on sea-watches in May, mainly during periods of easterly or south-easterly winds. Annual totals vary considerably according to the weather in May with only 4 seen in 1979 and then 214 flying east the following year. The largest numbers noted in a single day were 85 on 7th May 1981 and 48 on 7th May 1980.

Most autumn records involve small numbers the most noteworthy being 10 offshore at Worthing on 9th September 1963 and 70 feeding over the River Adur after a gale on 24th August 1977.

WHITE-WINGED BLACK TERN (*C. leucopterus*):- One at Hove on 15th June 1956 and an adult seen flying eastward at Brighton marina on 21st June 1986 are the only two records.

GUILLEMOT (*Uria aalae*):- This is the commonest species of auk recorded in this area. The records are exclusively from the coast and often are of oiled birds. Although there have been no systematic counts of auks offshore and the positive identification of distant flying auks is difficult, the table reveals the Guillemot is most frequently seen in the winter months.

At Worthing	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. offshore	152	42	7	8	2	—	5	3	6	13	10	22
No. flying past	39	1	—	1	2	—	—	—	6	—	102	1

The records suggest there has been an increase in the numbers wintering offshore during the 1980's as shown in the following table.

	1955-1959	1960-1969	1970-1979	1980-1986
No. recorded offshore	11	32	40	187

The largest counts offshore were in 1982 when 53 were noted between Widewater and Southwick on 15th January and 60 at Brighton marina on 24th January. Greater numbers too have been identified passing the shore with the largest movement occurring on 4th November 1985 when 151 passed east at Brighton and 81 flew east at Worthing.

There are two records of the darker Northern race, *U. a. aalge*, at Brighton on 29th October 1956 and at Worthing on 23rd July 1969.

RAZORBILL (*Alca torda*):- Recorded offshore in each month but less numerous than the Guillemot and with a different pattern of occurrence as the autumn and winter peaks are not so pronounced and a small increase is noted in May. This is shown in the following table.

At Worthing	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
No. offshore	19	5	6	6	15	2	5	2	4	32	26	9
No. flying past	18	3	—	5	19	2	—	—	7	—	18	3

Unlike the Guillemot there has been no marked increase in numbers seen in the 1980's as records are comparable to those for the 1950's.

	1955-1959	1960-1969	1970-1979	1980-1986
No. recorded offshore	47	16	21	47

The peak offshore counts were of 10 in both October 1955 and 1957.

BLACK GUILLEMOT (*Cepphus grylle*):- The only record is of one in winter plumage off Portslade beach on 7th January 1982.

LITTLE AUK (*Alle alle*):- The earliest record was on 9th March 1900 when a female was found dead on Shoreham beach but thereafter there are records of 14 individuals falling between 29th October (in 1955) and 23rd February (in 1983) but the majority occur in November as the table shows.

Oct.	Nov.	Dec.	Jan.	Feb.
1	9	3	2	2

Most were seen passing offshore but singles were noted in Southwick Canal between 16th November and 5th December 1959, in Shoreham harbour on 12th November 1973 and in Brighton marina on 14th February 1982. Four have been found dead at Aldrington in December 1929, at Shoreham airfield in November 1979, at Queen's Park, Brighton in December 1982 and at Brighton in January 1984.

PUFFIN (*Fratercula arctica*):-A scarce species in this area with only 12 individuals recorded in 9 of the years between 1957 and 1984. There is no obvious pattern with records occurring in January, February, March (2), April, May (3), August and December (2). Half the records were of apparently healthy birds seen offshore, the others were of dead or dying birds the most unusual being one found freshly dead near Steyning on 4th March 1953, an immature picked up by a shepherd at Sompting on 5th December 1962 and an old record of one shot in the Adur Valley near St Botolphs in December 1894.

AUK SPECIES:- Most auks noted passing the shore not positively identified, are recorded under this heading and are described in more detail in the Sussex Bird Report (Newnham 1986). With more systematic seawatching between 1978 and 1986 a total of 1506 auks have been recorded moving eastward and 901 westward from Worthing.

Figure 20 clearly shows more are seen in the late autumn and winter months, a small peak in May and a virtual absence between June and August. Throughout the year the largest movements are seen when fresh onshore winds blow particularly after a period of settled weather.

All the largest movements have been recorded since 1985 and include 544 flying westward at Brighton in 1.5 hours on 26th January 1985, 540 flying east at Worthing in 5 hours on 4th November 1985, 737 passing west in 1 hour at Brighton on 19th January 1986 and 153 also flying west at Worthing in 3 hours on 21st January 1986.

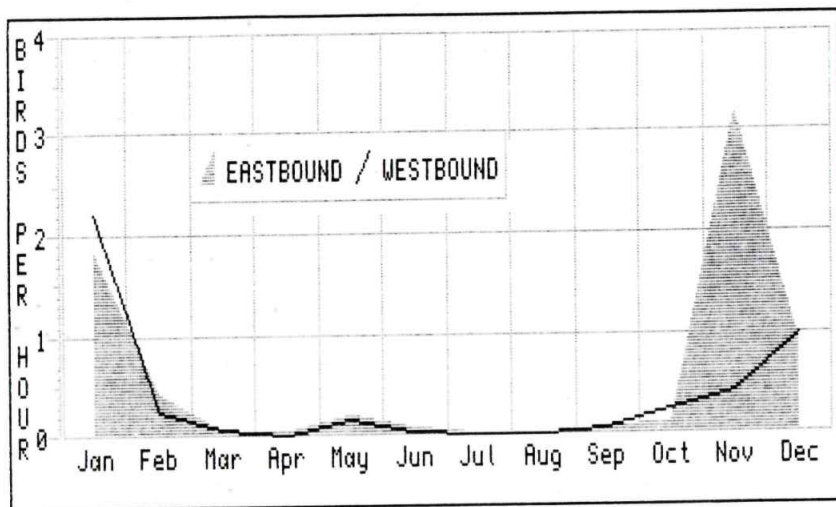


Fig. 20. Rate of eastward and westward movements of Auks in each month at Worthing (1978-1986).

PALLAS'S SANDGROUSE (*Syrhaptes paradoxus*):- The only records occurred during the invasion of 1888 when a small covey was on the shore between Lancing and Shoreham in May and June. Later in the year one was shot at Shoreham on 8th November.

STOCK DOVE (*Columba oenas*):- This tree hole nesting species seems to have become more common in recent years with reports of only five pairs in 1979 rising to 20 pairs in 1986. The local figures however, may purely relate to more systematic searching by local observers but they do reflect the findings in national studies which show the population to be recovering following a sharp fall in the 1950's.

Large flocks often occur outside the breeding season particularly on the downs where flocks of over a hundred are not unusual in autumn and 400 gathered in November 1976.

WOOD PIGEON (*C. palumbus*):- This is a common and widespread species found throughout the year in both urban and rural areas. Outside the breeding season large flocks congregate on farmland and flocks in excess of 2000 are seen regularly on the downs. At the onset of cold weather in late autumn substantial movements are occasionally noted, the largest on 27th October 1975 when a two hour count totalled 4500 birds flying eastward.

COLLARED DOVE (*Streptopelia decaocta*):- This is probably the most successful species of the 20th century, a time which has seen it spread from Turkey and Greece in 1930 to be well established in Britain and Ireland by 1970.

The first Sussex birds were recorded at the Witterings in 1958 but it was not until 1964 that the first were seen in this area when five pairs nested, two or three at Ferring and single pairs at both Steyning and Worthing. The following year a pair was also at Bramber and no less than 15 pairs were recorded from Patcham. By 1966 breeding was recorded at several other coastal and wealden sites and winter flocks had grown to 90 at Patcham and 40 at Steyning.

Since then it has become a familiar garden bird and is frequently encountered in large flocks where grain is available. A small roost was regularly used at the Sanctuary from 1972, but after peak counts of 200 in 1976 it has subsequently declined to less than 20 birds.

TURTLE DOVE (*S. turtor*):- This summer visitor breeds in most wooded areas in small numbers. Records span between 25th March in 1980 and 27th November, also in 1980, but most birds arrive between late April and mid-May and have departed by the end of September. Turtle Doves gather in the autumn prior to their migration to Africa and the largest counts from the downs are 30 in August 1975, 110 in August 1976, 30 in August 1979 and 35 in September 1980.

Although national figures show a slight population increase (Cramp 1985) the local records suggest a decline in numbers in the 1980's, possibly due to climatic variation or local destruction of their nesting habitat, and certainly not helped by the unwelcome pressure caused by the remorseless hunting of this species as it passes through the Mediterranean lands on its long migration.

RING-NECKED PARAKEET (*Psittacula krameri*):- This Category C species (introduced and surviving in the wild) is an unpopular addition to Britain's avifauna especially with fruit growers as it is very destructive.

Most records refer to the small breeding population in Hollingbury Woods in Brighton and the following table lists the records from there since 1977.

1977	1978	1979	1980	1981	1982	1983	1984	1985
1 pair	3 pairs	5	—	6	7	8	8	8

Elsewhere there are records of singles at Worthing in 1979, Shoreham in 1984, Lancing in 1985 and at Preston Park in 1985.

CUCKOO (*Cuculus canorus*):- This harbinger of spring with its familiar call is regularly heard and seen during the spring and early summer in the Adur Valley and on the downs. Cuckoos normally arrive in early April, the earliest being seen on 1st April 1972, and most have left by late September. However there have been three October records, on 6th in 1986, 15th in 1977 and the latest on 22nd October 1959.

Reed and Sedge Warblers appear to be the main species to be parasitised in the Adur Valley whereas on the downs the foster parents are usually Dunnocks. Birds are generally recorded singly but three together in April 1986 at Shoreham airport probably were newly arrived migrants.

BARN OWL (*Tyto alba*):- Although probably taken for granted in the past, it is sad to relate that this most popular of owls has now reached a very low ebb in this area, with probably no more than two breeding pairs present. Shrubbs (1979) described the species as uncommon but quoted densities of five to seven pairs in 15 square kilometres of coastal farmland and nine pairs in 58 square kilometres inland, in 1969/70. This must have been a vintage period as that season 10 pairs were recorded in this survey area, by far the greatest density achieved since 1945.

On a national basis Prestt (1965) for the British Trust for Ornithology showed that the bird had decreased notably from an estimated population of 12,000 pairs in England and Wales in 1934, mainly in southern and eastern England. Working on this basis and from a 12 year detailed examination of records compiled by many observers, Sandison (1980) arrived at a county population of between 100-130 pairs in 1980. Apart from 1969/70, between one and three pairs only were recorded locally in 14 of the years between 1953 and 1986, a figure well below that projected for the county. Although limited in number, birds are widespread and, as shown in the table, have been reported in every month. The table shows random sightings and does not include known breeding pairs.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total - 1953/86	5	3	8	6	3	7	4	2	1	7	7	4

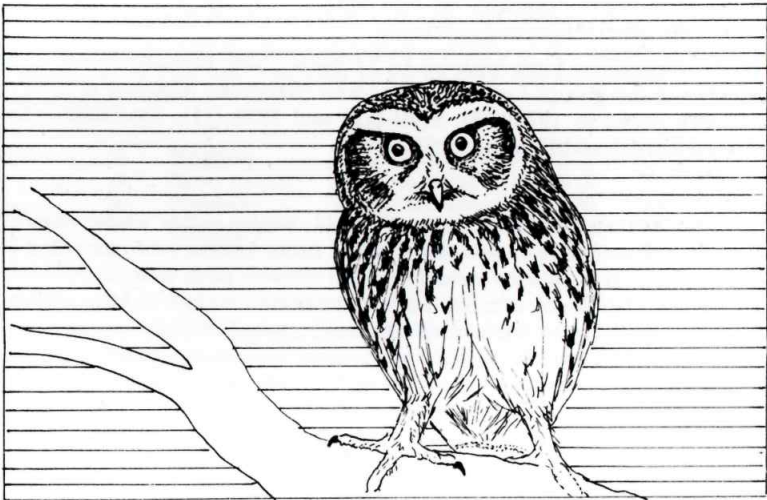
Most birds are sedentary but some influx does occur, possibly even from the continent. Two examples assigned to the dark-breasted central European race, *T. a. guttata*, were collected at Shoreham in October 1893 and September 1901 and on 14th October 1975

a dark plumaged bird resembling the Belgian or northern France race, but not considered *T. a. guttata*, was picked up moribund on Shoreham beach.

Favoured areas are the downs, airfield, Sompting brooks, Adur Levels, Cissbury, Clapham Woods, Castle Goring and Wiston. It seldom occurs in urban districts and only one or two have been picked up dead on local main roads. Barns, derelict buildings and old trees are the normal breeding sites.

LITTLE OWL (*Athene noctua*):-This owl was introduced into Kent in 1874 and has since become a widespread and successful coloniser and resident. The first local record relates to one shot near Shoreham in March 1877 and the species is now established in both downland and urban areas. Ives (1984), in his raptor survey, suggested a breeding population of eight pairs, which although slightly above the national average could be on the low side. As Ives states the bird tends to be sedentary and even in our local area there are still a few secluded sites possibly harbouring a few pairs. There is no evidence of depletion by pesticides but severe winters and Dutch elm disease have certainly contributed to population fluctuations.

In the review period breeding was not positively proven until 1963 and in the following 24 years until 1986 there were 78 pairs recorded in 14 productive years, an average of five per season or just three per year overall. However, between 1977 and 1986, in which there were two blank years, the average rose to six pairs overall. In the last 13 years the species appears to have become more nocturnal, with fewer daytime sightings. It appears to be equally at home in urban areas, with records from most of the residential areas, and on the downs, where the stronghold is between Cissbury and Chanctonbury with up to six pairs. Other favoured areas include the railway bridges, Buckingham Park, Lancing College and Brighton Power Station. There is insufficient evidence to detail breeding success.



TAWNY OWL (*Strix aluco*):- The most common owl in the area which has maintained its numbers and is equally at home in urban surroundings as in its more natural woodland habitat, but mainly by reason of its nocturnal nature it is probably under-recorded. Ives (1984) estimated the breeding population at 8 pairs but this study was conducted over a very short period and the records show that 20 pairs were present in 1969 and 15 pairs in 1968. In the years 1977 to 1986 increased observer interest and coverage has produced 88 pairs in 8 productive seasons — an average of 11 per season or nine overall. The present population is probably between 12–14 pairs.

There were no breeding records at all until 1965 when, as in the case of Little Owl (*Athene noctua*) and Barn Owl (*Tyto alba*) the presence of birds was taken for granted, a situation paralleled exactly in the Sussex Bird Report whose editor began asking for breeding records with some urgency in 1963. Allowing for several pairs present in this earlier period, the species has been remarkably stable but has increased since 1980. Apart from woodlands birds have been reported from all urban areas with parks, cemeteries and hospital grounds included in its territories. The last locale was, unhappily, unable to succour five birds killed on the A27 between Swandean Hospital and Patching Pond.

LONG-EARED OWL (*Asio otus*):- Although this secretive and crepuscular owl has bred successfully in at least eight years between 1928 and 1979, its status as a resident must be open to doubt. The following table shows that there is a large influx of birds in certain years between December and March but very few are recorded in between and it is probably these arrivals that breed and leave again in July.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total – 1953/86	23	9	15	3	3	2	4	1	1	1	4	10

Observed in every month of the year, breeding takes place in dense thickets on the downs, with up to three young per pair being on the wing during May and June. It is seldom seen in daylight, although one bird delighted watchers at Brighton marina on 16th March 1984 when it flew east overhead.

Large roosts sometimes form with up to 12 birds (14th January 1976), eight (2nd March 1980) and two groups each of five and four. Recorded regularly in 12 of the past 15 years, with peaks in 1976 (18), 1980 (12) and 1973 (11). One was calling in a Shoreham garden 6th and 13th July 1985.

SHORT-EARED OWL (*A. flammeus*):- A regular winter visitor whose numbers fluctuate, presumably according to prey availability. From 1953 to 1968, recorded 19 times in seven years but has been seen annually since 1969 with peak years in 1974 (12), 1972 (10) and 1982 (8). Birds arrive in September and remain as late as May, giving rise to many sightings involving far fewer birds. Approximately 105 birds have been recorded in the review period, of which ten years were blank and annual numbers ranging from one to twelve in the productive years. The earliest arrival was on 9th September 1981 and after a peak in October numbers taper off through to April. The latest sighting was on 14th May 1975 and there are no records for June, July or August.

Eight roosted in thickets in No-Man's Land in September 1972 and there have been two groups of six reported. Birds mainly frequent open downland (66 observed), and

the Adur Valley — airport area (24). Apart from one observed in a park in central Worthing the remainder were seen along the shore with 11 noted coming in from the sea and one noted passing southwestward out to sea on 20th October 1979. The monthly totals were:-

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total – 1953/86	10	10	9	9	2	—	—	—	14	24	14	13
Coast-migrants	—	—	1	2	—	—	—	—	2	5	1	1

NIGHTJAR (*Caprimulgus europaeus*):- This summer visitor, renowned for its eerie nocturnal churring, has become a rare visitor to this area. It once nested on the downs near Cissbury, Lancing and Sompting with six pairs recorded in 1963. However, since 1965 only 12 have been reported of which only one was heard churring, the others being autumn migrants seen during September.

A national decline in this species probably started at the end of the 19th century (Cramp 1985) and the following incomplete table of reports in the last thirty years show this trend to be continuing.

1958	1959	1961	1963	1969	1974	1980's
few pairs	1 pair	1 nest	6 nests	? breeding	1 churring	no breeding

One seen in a Worthing garden on 5th November 1961 is the latest sighting in Sussex and the 10th latest in the United Kingdom (Hudson 1973).

SWIFT (*Apus apus*):- Screaming parties of these birds are a familiar sight over the towns in high summer. Large numbers arrive during mid and late May but the earliest record for the area is on 16th April 1972. Most have departed by the end of August but a few stragglers may stay on into September. There are five years in which Swifts have been recorded in October the latest being 11th October 1978.

The Sussex Ornithological Society conducted a survey of the breeding population of Swifts between 1968 and 1970 (Hughes 1970) and the following table lists the counts during that census.

Bramber	8	Brighton	240	Clapham	3	Ditchling	12
Fulking	4	Hove	235	Lancing	6	Nyetimber	16
Poynings	26	Portslade	24	Shoreham	30	Sompting	20
Steyning	35	Storrington	40	Upper Beeding	12	Washington	4
Findon	30	Patching	5	Southwick	7	Worthing	206

Since 1970 there has been no systematic count but the population appears healthy. During the summer and on migration large flocks feed over the downs; a count of 1375 flying southward in four hours on 16th August 1985 gives an indication of the numbers which pass over during the autumn.

ALPINE SWIFT (*A. melba*):- An exceptionally rare bird in this area with only four records. Singles were seen at Lancing in 1892, at Hove on 23rd June 1925, at Hollingbury on 11th October 1964 and at Brighton seafront on 14th April 1982.



KINGFISHER (*Alcedo atthis*):- This brightly coloured species is a resident in the area and has probably bred in each year but breeding has been proven only since 1979 with four pairs noted in 1986.

It most frequently is seen in the Adur Valley and north of the downs it occurs in the sand pits. It bred at Widewater in 1964 and is often recorded there in the winter. In very cold winter weather Kingfishers are seen in more coastal areas with regular sightings from Southwick Canal, Ferring Rife and even along the foreshore.

Although fairly sedentary in its habits one was seen flying over a Lancing garden in February 1982, one flying over Durrington in February 1986 and a young bird ringed at the Shoreham sanctuary in July 1980 was retrapped at Steyning just 11 days later.

BEE-EATER (*Merops apiaster*):- The only record of this exceptionally rare visitor to Britain was at Lancing on 19th September 1958.

HOOPOE (*Upupa epops*):- This striking species bred a few years before 1849 at Southwick Square. However, since then no more have bred and it has become a scarce migrant. Most records are of singles seen in the spring but three were seen together at Lancing College in April 1966. The following table shows the decline in number seen over the past thirty years.

	1950's	1960's	1970's	1980's
Total seen	19	15	5	2
Maximum in a year	8 in 1958	7 in 1966	2 in 1974	—

The latest was one shot at Durrington on 6th November 1902.

WRYNECK (*Jynx torquilla*):- Apart from a record of a pair nesting in an orchard in Steyning in the 1920's this remains a scarce migrant with only 21 individuals noted in 15 of the years between 1953 and 1986. The earliest was noted from the 5th until 10th April 1958 near Shoreham railway bridge and the only other spring sightings occurred at Long Furlong on 19th April 1975 and in a Broadwater garden on 29th April 1984.

Most have been seen in the autumn when records span between 15th August and 25th September, several staying for a few days, often frequenting gardens. September is the prime month with 12 recorded whilst six have been seen in August. The best year was

1984 when four were seen; two were noted in each of the years 1968, 1969, 1976 and 1980 otherwise only singles were seen.

GREEN WOODPECKER (*Picus viridis*):- A widespread but not numerous breeding resident found throughout the year particularly in habitats where woodland, containing mature trees, admixes with open areas of short turf. Most records, therefore, come from the downs, Adur Valley, Adur Levels and from large parks and gardens.

During 1986 at least 14 pairs were reported including eight from downland woods and five from the weald but it is more likely that nearer 30 pairs nest in the area. The records suggest there may have been an increase in numbers in the 1980's as more are reported feeding in gardens on the coastal strip. Only 16 have been ringed until 1986 revealing no further information.

GREAT SPOTTED WOODPECKER (*Dendrocopos major*):- A fairly common resident associated with most woodland areas and recorded regularly during the winter visiting bird tables in urban gardens where it is particularly fond of fat. The numbers within the area have never been studied but in 1986 there were 11 pairs reported of which five were from downland sites, four on the coastal plain and only two were reported from the heavily wooded wealden areas where this species is undoubtedly widespread. Up to 1986 there were 55 birds ringed; several have been retrapped after several months showing the sedentary nature of this species.

LESSER SPOTTED WOODPECKER (*D. minor*):- A scarce resident which is undoubtedly under-recorded as the records suggest only two or three pairs breed in the area. Most records are of singles seen at sites such as Withdean, Hollingbury, Brighton cemetery, High Salvington, Clapham Woods and in gardens at Shoreham, Steyning and Worthing. Curiously, with the exception of a pair near Woods Mill, few have been noted from the wealden woodlands. The ringing totals too show this to be the scarcest of the woodpeckers with a total of only 6 ringed up to 1986.

WHITE-WINGED LARK (*Melanocorypha leucoptera*):- One netted at Brighton on 22nd November 1869 was the first British record. The only other record is three seen on Hove seafront on 15th November 1917.

SHORT-TOED LARK (*Calandrella brachydactyla*):- The only two records of this rare vagrant were birds trapped near Brighton in September 1854 and 16th November 1909.

CRESTED LARK (*Galerida cristata*):- This rare vagrant was recorded three times during the 19th century. In the spring of 1879 one was shot near Worthing, and individuals were caught at Shoreham and Portslade, both during October, in 1863 and 1881 respectively.

WOODLARK (*Lullula arborea*): A scarce passage migrant and winter visitor which has featured in the reports of the Shoreham District Ornithological Society in just seven years:- 1958, 1959, 1966, 1967, 1971, 1977 and 1981.

It is most often found on the downs or in coastal areas, either during spring or from late autumn to the end of the year. Grigg (1960) regarded the Woodlark as a breeding species in the Steyning district but no details or dates are given. In the 1960's small groups were occasionally noted including a party of 8 at Brooklands on 13th April 1967.

In the more recent years records have been restricted to one or two per year, with the latest being one flying eastward along Goring beach on 26th December 1981.

SKYLARK (*Alauda arvensis*):- A common resident, winter visitor and passage migrant. There are few detailed records of breeding numbers, but surveys, on a 55 hectares plot of permanent grassland pasture on the Adur Levels, indicate a maximum of 32 pairs. Most other records relate to winter movement, with flocks most frequently reported from the downs, coastal fields and the coastline itself. Largest numbers occur in severe winters with a maximum count of 7-10,000 flying west over Shoreham on 1st January 1979. Despite several severe spells of weather in the 1980's numbers recorded have been much lower.



SHORELARK (*Eremophila alpestris*):- The only record is of one seen on many occasions near the footbridge at Shoreham between 1st January and 4th February 1974.

SAND MARTIN (*Riparia riparia*):- This species has undergone a severe decline both as a breeding species and as a passage migrant. The reduction in status in this area reflects a trend across the whole of Europe which has been attributed to a series of droughts in the Sahel district of Western Africa where Sand Martins spend the winter.

Being the most habitat specific of the hirundines the breeding population has been closely monitored and the development of the declines well documented (Edgar 1986). Surveys of the Sussex population between 1965 and 1972 indicated about 4000 pairs; almost 50% of these were in this area, at the colonies around Storrington. From this

healthy situation the population has fallen as revealed in the following table which shows counts from Washington and Storrington sand pits in more recent years.

Year	1978	1979	1980	1981	1982	1983	1984	1985	1986
Number	140	40	No data	30-60	No counts made			35	20-25

Away from the breeding colonies numbers have also become very low, even amongst the large numbers of hirundines logged passing along the coast in spring and autumn in recent years. The flock of 200 seen over Hove lagoon on 12th September 1970 now appears as a historic record from a previous age.

SWALLOW (*Hirundo rustica*):- It is difficult to accurately assess the status of this species as there are so few detailed breeding records. Shrubbs (1979) considered that no definite change in status had occurred in Sussex and despite some popular feeling that numbers are lower than in the past, this may well be so in this area.

Arrival and departure dates vary considerably from year to year with 7th March being the earliest recorded. During the regular spring sea-watches of recent years large numbers are seen reaching the coast during late April and May. Autumn movements are often far more concentrated and spectacular. There are numerous reports of "huge" and "massive" assemblies of mixed hirundines over the years. In October 1969 an albino swallow was seen in one such flock over Mill Hill in Shoreham.

In 1979 4000 Swallows were seen passing Salvington on 22nd September and large groups are regular virtually anywhere at this time of the year although most counts have been from the coastal strip between Ferring and Worthing. The most impressive movement occurred on 20th September 1986 when an estimated 24,000 passed Goring beach in two hours of watching. The latest autumn sighting was on 14th December.

Most of the movements shown by ringing involve Swallows ringed at Shoreham and subsequently found in other parts of southern Britain although in 1958 a Swallow ringed at Shoreham was found in South Africa in January 1959.

HOUSE MARTIN (*Delichon urbica*):- As with many of the more numerous species breeding information is scarce, although at present House Martins appear to remain a common breeding species and abundant passage migrant.

Arrival dates vary with 31st March being one of the earliest although mid-April is more typical. Similarly to Swallows a number of House Martins are seen coming in from the sea during spring sea-watches.

Autumn passage is again far more spectacular and although there have been records of large movements in the past, it is only in recent years that sustained watches have provided detailed data. On 20th September 1986 a total of 36,000 flew eastward at Goring (in addition to 24,000 Swallows) and it is a tribute to the observer that, not only were these birds counted but that an albino House Martin was noted. A few birds remain into November each year and the latest date is 11th December.

Ringing data reveal some interesting movements with a bird from Strathclyde controlled at Shoreham, 588 km south east and 27 days later, whilst a number of Shoreham ringed birds have been recovered in France.

RICHARD'S PIPIT (*Anthus novaeseelandiae*):- This rare species most frequently occurs in Britain in September and October (Sharrock 1976) but the two dated records are of singles seen at Clayton Hill on 12th March 1869 and on a grassy area near Hove lagoon between 25th and 29th January 1956. Des Forges and Harber note a further 20 were taken in the Brighton area during the 1860's, eleven of which were in one year.

BLYTH'S PIPIT (*A. godlewskii*):- One taken by a bird catcher near Brighton on 23rd October 1882 was the first record for Britain. Indeed this species is so rare that no further European sightings occurred until one was recorded in Finland in September 1975 (Shrubb 1979).

TAWNY PIPIT (*A. campestris*):- The four recent records of this rare pipit conform to the pattern of occurrence found nationally; a single was seen on Hove sea front on 10th September 1956, and on the downs near Cissbury two were recorded on 27th August 1970, one on 23rd August 1977 and two on 21st and 22nd September 1980. There is an old record of one caught near Brighton during October 1871.

TREE PIPIT (*A. trivialis*):- This summer visitor which is rarely seen on spring migration, breeds in small numbers but is most regularly noted during the autumn migration. The earliest records of Tree Pipits are of singles at Cissbury on 8th April 1984 and 15th April 1979, and one flying over Brighton marina on 13th April 1983.

Breeding records of Tree Pipits are scarce but one or two pairs of displaying birds have been reported from the downland area between Cissbury and Steyning, Lancing Clump, Devil's Dyke, Shave's Wood, Washington Common and Sullington Warren.

Systematic watching and counting of migrants on the downland near Cissbury has revealed a regular autumn passage. Although one was seen near the Shoreham sanctuary on 4th July 1960 and a few noted at Cissbury in early August this passage most typically starts in mid August reaching a peak at the end of August or early September. Numbers seen vary from year to year with totals of 241 recorded in 1980 and 134 in 1985 being the best and in most recent years up to 30 have been noted on the peak day with 50 on 27th August 1984 being exceptional. By late September most have departed and the only October records are of birds flying south-eastward over Brighton on 3rd, 8th, 9th and 10th October 1951 and five at Ferring beach on 10th October 1982.

MEADOW PIPIT (*A. pratensis*):- The most widespread and numerous of the area's pipits is both a resident and migratory species being recorded in most open localities and noted passing over the coast and towns during the migration seasons. Detailed breeding counts are few but in 1967 seven pairs were located in 1400 acres of downland between Cissbury and Chanctonbury whilst there were 13 pairs in 900 acres of golf courses near Worthing. In 1978 a total of 33 pairs were found in 300 hectares of the Adur Levels between Bramber and Henfield but the most consistent recording is from a Common Bird Census on the Adur Levels, the results in the following table suggesting a reduction in numbers.

	Number of pairs in each year					
	1981	1982	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	31	30	29	23	12	18

In spring most are seen arriving over the coast, usually from mid morning to mid day when light to moderate northerly winds are blowing in late March and early April. Counts of over 200 in a morning are not unusual but on 31st March 1984 a total of 1046 were seen flying over Brighton marina and 1000 over Worthing with obviously many thousands passing between these sites.

Apart from 150 flying eastward at Shoreham on 29th September most of the autumn records are from the downland. From late September to mid October there are many records of large flocks; the greatest counts being 500 at Cissbury on 27th September 1980, 800 there on 2nd October 1983, 400 at Brighton golf course on 4th October 1983, and 650 at Cissbury on 11th October 1984.

During the winter Meadow Pipits are scarce inland and on the downland with most records coming from the coast and river valley, the only large winter flocks were 250 on coastal arable land on 16th December 1981 and 300 at Ferring in January 1985. In harsh weather small, mainly westward, movements are noted and small parties can be found feeding along the beach. A semi-albino was noted at Brighton during November and December in 1985.

ROCK PIPIT (*A. petrosus*):- An autumn and winter visitor to the area being found mainly along the beaches and saltings of the River Adur. The earliest record of one at Widewater on 25th August 1983 is unusual as most arrive in this area in September and October. The numbers are never great with counts of 17 between Shoreham and Brighton in December 1967, 10 at Ferring in December 1969, 23 between Worthing and Widewater in January 1982 and approximately 35 noted on the beaches between Ferring and Hove in 1985.



A bird showing characteristics closest to the Scandinavian Rock Pipit (*A. p. littoralis*) was seen at Brighton marina on 10th April 1984. The only other records are from the 19th century; one shot on Shoreham beach in August 1868 was noted as the first of this sub-species recorded in Britain, however, the Booth Museum has seven birds collected at Portslade in March 1866 and at Shoreham in March 1880.

WATER PIPIT (*A. spinoletta*):- A scarce migrant as only 20 have been recorded in 10 of the years between 1953 and 1986. Apart from four seen together on the Adur Levels on 30th December 1983 the records fall between 22nd February (in both 1982 and 1984) and 17th April (in 1980). The monthly totals are:-

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	3	7	6	—	—	—	—	—	—	—	4

The records are from Widewater, Flood Arch, the old Shoreham refuse tip, Shoreham airfield and beach, Adur Levels and Brighton marina.

YELLOW WAGTAIL (*Motacilla flava flavissima*):- A summer migrant which is seen on both spring and autumn migrations and breeds in the area in small numbers. The favourite haunts of the Yellow Wagtail are meadows with short grass therefore most are recorded on the Adur Levels, in the Adur Valley and during the autumn on the short downland turf. A survey between 1965 and 1967 revealed 20 pairs on the Adur Levels but a similar survey in 1980 and 1981 showed only four pairs (Mitchell 1981) with a further decline to one or two pairs in 1986. Occasional pairs successfully nested near Coombes in the 1960's but the only breeding record from the lower Adur in recent years involves a pair with young at New Salts Farm in 1984.

In most years the first Yellow Wagtails are seen in the first ten days of April but unusually early were records on 4th March 1885, 8th March 1927 and 24th February 1947. More recent early arrivals were singles on the Shoreham airfield on 20th March 1968 and at Steyning on 23rd March 1980. Numbers seen in the spring are usually small and often involve birds seen flying over the coast. Autumn passage however is more pronounced and reaches its peak in late August and September when large flocks have been recorded. In most years the largest groups number less than 100 but 250 were noted near Brooklands on 17th September 1970 and 226 seen on the downs on 30th August 1982. During an exceptional widespread fall of migrants on 21st September 1980 at least 295 were counted from five different localities including 110 on Adur Levels. Similarly, during September 1985 the records suggest at least 300 passed through the area and on 31st August 1986 a total of 135 was noted at two sites.

Stragglers are regularly recorded in the first few days of October but the latest birds were singles recorded at Hove on 15th October 1954, at Ferring on 15th October 1986, near Shoreham on 27th October 1947 and at Clapham on 13th November 1966.

BLUE-HEADED WAGTAIL (*M. flava flava*):- There have been eight records of this race from Central Europe. One was found breeding with a Yellow Wagtail on the water meadows near the Shoreham sanctuary in 1952. The remainder were all singles noted at Bramber on 7th May 1965, at Upper Beeding on 26th April 1980, on the Adur Levels on 10th July 1982, at Adur recreation ground on 30th August 1982 and at Widewater on 10th August 1982, 25th July 1983 and 18th August 1985. It is interesting that six of this total have occurred in the 1980's.

GREY-HEADED WAGTAIL (*M. flava thunbergi*):- This race from Scandinavia has only been recorded twice; one was shot at Lancing on either 28th May 1869 or 24th

April 1870 and a bird of this race, or just possibly Ashy-headed Wagtail (*M. flava cinereocapilla*), was at Mile Oak on 17th May 1984.

SYKE'S WAGTAIL (*M. flava beema*):- One at Portslade on 24th and 25th April 1957 is the only record of this Russian race.

GREY WAGTAIL (*M. cinerea*):- Although a resident species the Grey Wagtail is most regularly recorded during the autumn and winter. The records show this to be the scarcest of the regularly occurring wagtails with seldom more than 20 being recorded in a year.

Pairs have bred successfully at Woods Mill and Storrington Mill Pond but few have been recorded at other possible breeding sites during the spring or early summer. Most of the records are of small numbers, up to seven, seen during the autumn either flying along the coast, over the downs or at sites near water like Brooklands, Ferring Rife, Widewater, the River Adur and Levels or the Shoreham sanctuary. Although singles were seen at Cissbury on 22nd August 1981 and at Brighton marina on 10th August 1984 most are seen in September and October.

During the winter the same sites occasionally support one or two although seven have been recorded at Brooklands and six along the old Steyning railway line running by the Adur Levels.

PIED WAGTAIL (*M. alba yarrellii*):- This familiar town and garden species is mainly an autumn and winter visitor to the area yet some are resident and a few pairs probably breed. The only confirmed records of breeding are from the Adur Levels in 1981, and Woods Mill.

The numbers seen gradually build up during late August and September with a marked influx occurring in October. From September until early spring Pied Wagtails can be found in a variety of habitats from open country, the beaches, parks and gardens and even in town centres. The numbers in the area can be best estimated from counts taken at their communal roosts which are listed below:-

Brighton Power Station	— 50 in February 1966, no other records
Glasshouses near Thakeham	— 500 from October to December 1973, 1000 in December 1974 and 1975
Shoreham reed bed	— from 1975, maximum in October (700 in 1978).
Adur Levels	— 25 in December 1981
Bramber	— 137 on 29th August 1982
Worthing	— at Worthing Hospital in 1970's and recently in the Seeboard buildings in East Worthing, up to 1000 in December

There are several records of parties of Pied Wagtails fighting to these roosts in the evening. Particularly noted are those flying eastward over Goring, presumably to the Worthing roost, where 229 were counted on 14th October 1985.

Small numbers are noted moving along the coast in settled weather. October 1985 was exceptional when a total of 374 were seen flying eastward along the shore at Worthing during short early morning sea-watches, the maximum being 84 on 14th October.

Up until 1986 a total of 1485 Pied Wagtails have been ringed in the area, most being trapped at the reed bed roost site at Shoreham during the late autumn. There have been no foreign recoveries but three movements from Yorkshire, Cumbria and Northumberland suggest the origin of some of the wintering birds.

A melanistic bird was seen at Southwick on 22nd June 1973.

WHITE WAGTAIL (*M. alba alba*):- The following table shows the monthly distribution of the 29 individuals of this continental race and clearly reveals most have been recorded during April.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	1	3	16	—	—	—	—	4	1	2	—

The records span 19th September (in 1954) to 27th April (in 1983) and apart from three together at the Shoreham refuse tip pool in 1958 and two there in 1959 involve single birds. All have been seen at coastal locations.

WAXWING (*Bombicilla garrulus*):- There are few records of this attractive northern species. A flock of 20 on the downs near Bramber on 20th April 1941 is not only the largest flock seen in this area but the date is the latest recorded in Sussex. A small party was seen near Lancing College in January 1947 but all the other records are from the large invasion in 1965 when a party of six remained near the Shoreham toll bridge between 26th November and 12th December 1965, five were in a Shoreham garden on 17th January 1966 and finally one was seen in a Goring garden on 12th March 1966.



WREN (*Troglodytes troglodytes*):- There are few records for this species which is an abundant resident and possible passage migrant. Most records relate to the period following the extreme winter of 1962/63, when a gradual re-establishment of a drastically reduced population is implied. There is no strong evidence to suggest any coastal movement in the autumn through this area, similar to that reported from Beachy Head. However a report from 1974 indicates particular abundance in the Shoreham sanctuary during October.

The Wren is a common garden breeding species and occurred in 53% of the gardens surveyed in the Garden Bird Feeding Survey organised by the Shoreham District Ornithological Society in 1985. Systematic counts of breeding pairs show there are marked variations in breeding numbers; only three or four pairs have been found in 55 hectares of permanent grassland pasture on the Adur Levels whereas 66 pairs were found in a 280 hectares plot of mixed scrub and woodland at Hollingbury Wood and golf course in 1985 and in a 14.2 hectares area of mixed scrub at Cote Street, in Worthing, 34 pairs were counted in 1984.

DUNNOCK (*Prunella modularis*):- An abundant resident species found throughout the area and well known as a familiar garden bird both during the breeding season and as a wintering visitor. It occurred in 100% of gardens surveyed in the local Garden Bird Feeding Survey in 1985.

A breeding survey at the Shoreham sanctuary suggested 9 pairs in 1983. In the same year a survey of 55 hectares on the Adur Levels produced 5 pairs. In areas with more cover they are more numerous as shown by counts of 51 pairs in 280 hectares at Hollingbury Wood and golf course and 12 pairs in 14.2 hectares at Cote Street, Worthing in 1984.

ROBIN (*Erithacus rubecula*):- This species is an abundant and widespread resident, a passage migrant and a winter visitor. Like many of the commoner species there are few records which show changes in the population over the years but recent surveys have shown 17 pairs breeding at the Shoreham sanctuary in 1983, and in 1984 there were two pairs in 55 hectares on the Adur Levels, 22 pairs in a 14.2 hectares area of scrub at Cote Street in Worthing and 67 pairs in 280 hectares at Hollingbury Woods and golf course.

It is a common garden bird in the winter months, appearing in 100% of the gardens surveyed in the Garden Bird Feeding Survey in 1985. During the autumn and winter local Robins are joined by birds with continental origins. This is supported by two remarkable recoveries of birds ringed at the Shoreham sanctuary in early October 1979 and subsequently found dead in Denmark, one in the spring of 1980 and the second a year later.

NIGHTINGALE (*Luscinia megarhynchos*):- An uncommon summer visitor and passage migrant which is normally seen or heard from mid-April until late August. The extreme dates, however, are 13th April 1961 and 23rd September 1966.

Breeding numbers fluctuate but in a few favoured sites a small but regular population is maintained. Most of these sites are in the wooded, wealden area north west of

Steinying and in the woodland near Small Dole. In the past breeding pairs were regularly recorded near Shoreham, including the Shoreham sanctuary, and up to 5 pairs nested at Salvington between 1949 and 1953, but in recent years such reports have ceased. Detailed surveys of the breeding distribution and population were organised by the Sussex Ornithological Society and the British Trust for Ornithology in 1976 (Merritt 1978) and in 1980 (Newnham 1980) and showed that Sussex held about 20% of the national population of Nightingales and that locally few were found at sites apart from those previously mentioned.

Coastal records are scarce although an individual was seen arriving from the sea at Brighton marina in the spring of 1982, whilst in the same year another sang for three days from the Ilex tree plantation on Goring beach. Some passage movement is indicated by spring and autumn records from the downland scrub near Cissbury, and the recent development of ringing at this site may add to this information. Only six Nightingales have been ringed in the area in the past two decades, yet remarkably one ringed as a juvenile at the Shoreham sanctuary in August 1983 was trapped again at Cissbury in August 1986.

BLUETHROAT (*L. svecica*):- There have only been five records, involving six individuals, of this rare vagrant. In 1862 a specimen of the red-spotted race (*L. s. svecica*) from Scandinavia, was obtained near Brighton.

All the other records are thought to relate to the white-spotted form (*L. s. cyanecula*) from Southern Europe. In 1958 an immature was found at Shoreham rubbish dump on 11th and 12th September. In 1959 two males were present at the same site between 11th and 23rd September, one was caught and ringed. Singles were seen at Ditchling Beacon on 3rd September 1961 and at Black Patch Hill near Patching on 29th August 1962. However in the following 24 years there were only two records; one seen in a Hove garden on 27th May 1971, and one at Standean, Brighton on 5th and 6th October 1986.

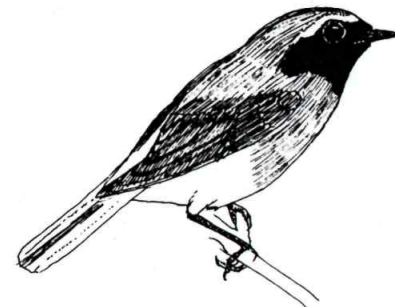
BLACK REDSTART (*Phoenicurus ochruros*):- A rare breeding species and uncommon but regular winter visitor and passage migrant. Records in this area suggest a decline in the numbers of this species as a passage migrant.

Shrubb (1979) considered there was no definite change in the overall Sussex breeding status. However, a countywide search of known breeding sites in 1977 (Porter 1977) revealed only two successful pairs, both in the Brighton area. The last recorded breeding record concerns a pair which attempted to nest at Brighton marina in 1981; success was not confirmed. Pairs certainly bred at Southwick and Worthing five times in the 1970's and pairs twice produced two clutches. In the 1960's breeding records were scarce, although nesting was confirmed at Worthing in 1964.

Most birds are recorded on passage from mainly coastal, downland or river valley locations with Shoreham harbour and the beaches at Southwick, Worthing, Goring and Ferring being particularly well documented. Numbers vary from singles to small groups, 8 together were found at Ferring Rife in November 1982, whilst in 1984 counts between Brooklands and Shoreham beach on 16th October totalled 16 individuals.

REDSTART (*P. phoenicurus*):- Formerly a scarce breeding species and a regular passage migrant. At present a passage migrant with numbers showing some decline since the peak counts of the early 1980's.

In the 1960's breeding was confirmed or suspected in a Coombes garden in the years 1960, 1961 and 1965, since when no breeding has been recorded.



Spring passage is normally poorly observed, with 31st March being the earliest date, although mid April is more typical. Autumn migration has been well recorded during the 1980's with Cissbury providing both the highest counts and the most regular data. Movements begin in mid August and continue until early October with 3rd October being the latest date recorded. At Cissbury, and other sites such as Wild Park, Brighton and Ferring Rife peaks are observed between early and mid September. The maximum autumn total at Cissbury was 130 seen between 15th August and 22nd September 1982.

WHINCHAT (*Saxicola rubetra*):- A regular passage migrant which bred prior to the 1940's. Records suggest there has been little change in the pattern of movements during recent years.

The earliest arrival date is 21st April 1974 but spring sightings are restricted to a few individuals whilst during autumn passage Whinchats are more widespread and common. Autumn movements begin in August and continue until early October with the last being seen on 20th November 1982. Favoured sites are on the downs, at Ferring Rife and in the New Salts Farm/Shoreham airfield area. The highest numbers are recorded from Cissbury with a maximum of 273 during the autumn of 1981 and the highest daily total of 75 was recorded on 17th September 1974.

STONECHAT (*S. torquata*):- A scarce resident species although more regularly seen as a winter visitor and passage migrant. The Stonechat seems to be declining throughout Sussex and its breeding status in this area has certainly deteriorated in recent years. Records of confirmed breeding totalled only seven in the last seven years compared with 17 in the previous seven year period. No breeding was reported in 1986.

A detailed account of the breeding status of this species in Sussex was described by Hughes and Shrubbs (1973). Shrubbs (1979) considered that it was suffering from a long term decline. In this area, the decline in breeding, wintering and passage numbers is well evident.

Most records are received from downland areas, particularly Cissbury, and from coastal and river valley sites. The largest counts occurred during the 1970's when regular watching at Cissbury confirmed an October passage and produced counts of 27 on 16th October 1976 and 60 on both 17th and 19th October 1976. In recent years other regular locations have been the Shoreham airfield, new Salts Farm and Ferring Rife but numbers usually involved singles or small parties of up to six together with the peak in the 1980's of 12 at Cissbury on 6th October 1984.

WHEATEAR (*Oenanthe oenanthe*):— This species is a regular passage migrant and rare winter visitor although formerly it was also a summer visitor which bred in small numbers on the downs and coast. Regular breeding in the area ceased during the 1970's although a juvenile bird seen near Cissbury in the early autumn of 1981 may have been of local origin.

The Wheatear's decline as a breeding species in this area reflects the situation throughout Sussex where the population has diminished rapidly since the 1930's when it was a common bird at many sites.

A survey of Wheatear migration through this area was carried out in 1985 (Hall 1985) although fluctuations in numbers from one year to another make the assessment of general trends very difficult. Spring passage normally begins during March and peaks in early April. The majority of the early arrivals are males whilst a second, smaller peak in early May is made up largely of females. Usually spring numbers are lower than those seen in the autumn and almost all are reported from the beaches and other coastal areas. A record number was recorded in the spring of 1986 with a total of 270 seen by 15th May. In 1984 during a large influx between 10th and 12th April a total of 86 were counted at Ferring beach in just two hours. The earliest arrival date was of one at Worthing beach on 7th March 1981.

The Wheatear's autumn passage normally begins in July and extends until October. Birds are usually reported from a wider range of habitats and localities with Cissbury and other downland, river valleys and open land near the coast being the most regular sites. Peaks usually occur in late August or early September with a maximum daily total of 115 at Cissbury on 20th August 1984. Other notable parties of up to 50 or 60 occur occasionally at other sites such as Shoreham recreation ground, New Salts Farm and West Hove golf course.

The first record of wintering in the area occurred when a bird was found at Shoreham harbour on 29th November 1982 and remained there until 2nd February 1983. Another winter bird was reported from New Salts Farm on 3rd December 1983.

WHITE'S THRUSH (*Zoothera dauma*):— One was present in a Hove garden for two or three weeks before being found dead on 26th September 1898.

RING OUZEL (*Turdus torquatus*):— A passage migrant seen in variable numbers in most years with the records clearly falling into two periods as shown in the following

table. The table demonstrates the minimum number seen and for parties of Ring Ouzels staying several days includes only the first date an individual or flock was recorded.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
—	—	3	34	16	—	—	—	18	183	4	—

During the spring records span singles seen at Mill Hill, Shoreham on 25th March 1969 and at Hove on 29th May 1984. However over three quarters of the sightings are from the period 10th April to 9th May. Most spring records involve only one or two birds but six at Cissbury on 28th April 1976 was exceptional.

The table and figure 21 clearly shows more birds are seen in the autumn but in this season the totals are more difficult to evaluate as Ring Ouzels probably remain in the area for several days. This has been confirmed from a ringing study on downland near Lewes (Leverson 1985). The earliest seen in the autumn occurred on 11th September and none have been recorded after 19th November.

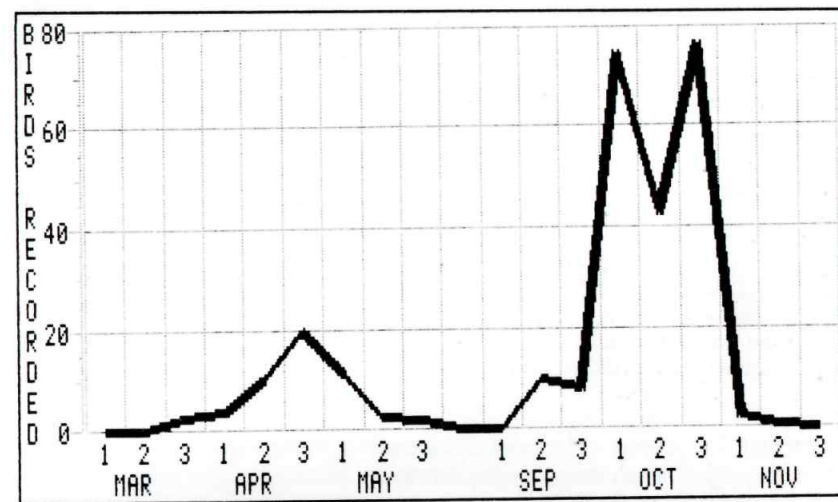


Fig. 21. Ring Ouzels recorded in the area during 10 day periods (1953-1986).
(Only first arrival date included.)

Unlike the spring small autumn flocks were often seen feeding on Hawthorn berries with 40 in two square miles near Patcham on 1st October 1960 and 40 roosting at Cissbury between 27th October and 8th November 1968 being the largest in this area. There have been no comparable flocks since and the records suggest there have been fewer in recent years. Although the Ring Ouzel is a wary species a few have been recorded in gardens on the coast, but most of the records are from the scrub areas high on the downs.

BLACKBIRD (*T. merula*):— This familiar species is a common resident, passage migrant and winter visitor being found in most habitats. Indeed in a survey of Sussex

woodland it was the second most numerous species (Shrubbs 1979). Like most of the common and widespread species there have been no detailed studies of the whole area but the following table shows the breeding densities that are achieved in three different sites.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	13	13	11	12
Cote Street, Worthing (14.2 ha mixed scrub)	18	26	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	56	98	128	127

During the autumn the local birds are joined by immigrants from the continent but the scale of this is unclear. There are records of a big southwestward movement all morning at Hove on 18th October 1961, 300 at Ferring on 4th November 1968 and notes of gatherings on the downs and at the Shoreham sanctuary in late October and November which could relate to migrants. Leverton (1985) in a detailed study of Blackbirds on downland at nearby Lewes guessed that one in three of the autumn and winter birds on downland could be of continental origin. Ringing results from the Shoreham sanctuary suggest virtually all autumn and winter birds are locally breeding birds, particularly in the past decade since there has been no winter roost in the copse. The decline of this winter roost is reflected in the following table of numbers ringed in each decade.

	1950's	1960's	1970's	1980's
Total ringed	1048	2590	1674	717

From this total 11 Blackbirds have been recovered abroad, from Germany, Sweden (2), Norway (2), Finland, Denmark, Eire and France (3).

Only a few are noted in cold weather movements and winter counts include 109 at Brighton cemetery and 150 at Moulsecoomb in 1984.

FIELDFARE (*T. pilaris*):- Flocks of this attractive winter visitor are most frequently seen in the late autumn stripping the hawthorn berries on the downland or in the winter feeding in loose flocks on the permanent pasture found on the Adur Levels. In harsh winter weather however large movements occur and parties, often up to 200 birds, can be seen anywhere including urban gardens. In most years the first arrivals are seen in October but there are two September records and the earliest is of one at Southwick on 28th August 1972. Although there were 400 on the Adur Levels on 14th October 1976 large counts are unusual before November when several hundred are regularly reported from the downland and levels. The largest autumn counts are 5000 at Patcham on 16th November 1970 and 600 on the downs near Cissbury and 800 at Mile Oak in November 1974.

In some years at least 1000 Fieldfares can be seen on the Adur Levels between December and February. At the onset of severely cold weather movements of Fieldfares become obvious; examples being an estimated 10,000 flying northward at Widewater on 14th January 1966, 400 flying westward at Goring on 12th December 1981 and 300 per hour eastward at Brighton and 800 flying east at Worthing on 6th February 1986.

By March the numbers decline considerably and apart from 300 seen on the Adur Levels on 28th March 1975 there are no records of large numbers after mid month. In April Fieldfares are scarce and there have only been seven seen between 1st and 11th May with the latest three seen at Sompting on 5th June 1977.

Only 14 have been ringed in the area yet incredibly one ringed in Shoreham in December 1966 was shot in Norway in October 1969.

SONG THRUSH (*T. philomelos*):- Like the Blackbird this is a familiar species which is a widespread and common resident, a passage migrant and possibly a winter visitor. Song Thrushes are found in a variety of habitats but are seldom far from hedgerows, scrub or woodland. A survey of Sussex woodlands, suggesting this species to be about three times scarcer than the Blackbird, is supported locally by the ringing totals but the results of the following breeding counts shown below suggest they are notably less numerous.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	1	1	1	2
Cote Street, Worthing (14.2 ha mixed scrub)	2	4	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	14	22	20	23

At the Shoreham sanctuary they, like Blackbirds, are most evident in the autumn when feeding on berries but their migrations from and through Sussex are complex (Leverton 1985). In the winter they are occasionally involved in cold weather movements; the best examples being 300 flying westward at Brighton on 15th January 1966, 100 also flying westward at Southwick on 10th November 1967 and 100 flying eastward at Brighton on 6th February 1986.

	1950's	1960's	1970's	1980's
Total ringed	460	930	616	241

Only three interesting recoveries have been generated from ringing 2247 Song Thrushes; one ringed in October was shot in Portugal the following January, a May ringed bird was found in France the following November and a November ringed bird was recovered in Norfolk during the subsequent May.

REDWING (*T. iliacus*):- This numerous winter visitor is recorded every year in varying numbers and is usually seen during the autumn in areas of downland scrub feeding on the berries or in the winter feeding on permanent pasture with other thrushes and foraging amongst leaf litter on the woodland floor.

In most years the first few autumn Redwings are recorded in mid-October which is also a time when many are heard calling from the night sky as they pass overhead. However, singles seen at Hove on 11th September 1982 and at the Shoreham sanctuary on 29th September 1984 were notably early. In some years there are marked early influxes, none more so than in 1973 when 200 flew west at Brighton on 1st October followed by a large movement of 4000 flying westward on 11th October. In November and December flocks of one or two hundred are regularly encountered with larger

counts of 300 on the downs near Cissbury in 1968 and 400 there in 1974 and on the Adur Levels 400 in November 1976 and 1500 in November 1980. The early winter of 1978 was particularly noteworthy as 1200 were counted at Cissbury, 1000 on the Adur Levels and at least 400 roosted at the Shoreham sanctuary.

At the onset of severely cold weather large numbers can be seen flying in a westward direction; examples include 1500 at Worthing on 13th January 1964, 1500 per hour at Worthing on 9th December 1966 and 3150 in three hours watching at Goring on 12th December 1981. Counts in the later part of the winter tend to be slightly smaller although 1000 were on the Adur Levels on 27th January 1980 and a similar number were seen near Ashurst on 16th March 1980. By late March and April only a few are recorded and, apart from 40 flying north at Widewater on 9th April 1958, few are seen flying over. Singles seen at Goring on 7th May 1960 and at Ferring on 5th May 1968 are the only two records for this month.

An albino individual was seen at Goring Gap on 13th March 1977.

A total of 180 have been ringed in the area and the only interesting recovery was an individual which was shot in November 1984 in France having been ringed in Shoreham the previous March.

MISTLE THRUSH (*T. vicivorus*):- Although occurring in or near most areas of woodland in the area, there are few records of this, the scarcest of the thrushes. The species is a resident and probably fairly sedentary. The numbers found in two breeding surveys are revealed in the following table which shows that in the woodland habitats they are about half as numerous as the Song Thrush.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Cote Street, Worthing (14.2 ha mixed scrub)	4	4	—	—
Moulseccomb/Hollingbury (280 ha scrub/wood)	5	16	14	13

Outside the breeding season there are occasional records of flocks with 30 at Shoreham sanctuary in August 1956, 250 at Cissbury in August 1965 and 25 at Brighton cemetery in October 1986. Mistle Thrushes are usually absent from autumn or cold weather movements although three were seen flying northeastward over Brighton Palace Pier on 16th January 1955 and a total of 12 and 6 were seen flying westward over Hove during the autumns of 1957 and 1958 respectively.

	1950's	1960's	1970's	1980's
Total ringed	41	57	45	8

These ringing totals may merely reflect how unusual this species is at the main mist-netting locations rather than suggesting this species is scarce.

CETTI'S WARBLER (*Cettia cetti*):- The first record in the area was in 1977 when one was trapped at the Shoreham sanctuary on the 3rd and 7th October. The other records have been of singing males, also in the lower Adur Valley, in May 1982, and between January and March in both 1985 and 1986. Despite the availability of suitable habitat in the Adur Valley this species has failed to colonise the area.

GRASSHOPPER WARBLER (*Locustella naevia*):- A scarce summer visitor and passage migrant which has shown a marked decline in Sussex since 1970 (Parmenter 1981). This skulking species with a reeling song formerly bred in several downland sites in small numbers with 9 in 1970 and 13 in 1971 being the best years. In each of the years between 1983 and 1986 only one bird was noted during the summer which shows the scale of the decline.

The earliest record was on 4th April 1966 at Devil's Dyke and the latest on 20th October 1979 near Cissbury.

SAVY'S WARBLER (*L. luscinoides*):- One singing on Devil's Dyke on 26th April 1968 is the only record.

AQUATIC WARBLER (*Acrocephalus paludicola*):- The skin of an adult shot in Hove on 19th October 1853 is in the Booth Museum and is the only record for this area.

SEDGE WARBLER (*A. schoenobanus*):- A summer visitor and passage migrant found most frequently in damp habitats with reedy fringed ditches and bushes. The earliest spring records are of singles at the Shoreham sanctuary on 4th April 1959 and at Shoreham on 7th April 1960 but most arrive after mid-April. The only full survey of breeding Sedge Warblers was done in 1986 when 70 pairs were located with most found on the Sompting Brooks, around the periphery of the Shoreham airfield and on the upper Adur Levels (Newnham 1986).

Unfortunately there are no past detailed studies but Shrubbs (1979) noted a marked decline in Sussex during the early 1970's which was possibly linked to a succession of droughts in the African wintering areas. A more recent systematic count on the Adur Levels suggest this decline may be continuing as shown in the following table.

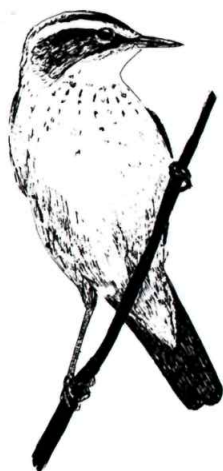
Area of Survey	Number of pairs in each year					
	1981	1982	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	22	27	17	12	6	11

During the autumn Sedge Warblers can be found in reed beds and damp habitats and ringing studies suggest most pass through between late July and early September with the latest recorded on Coney Hill on 6th October 1969.

A total of 788 Sedge Warblers have been ringed in the area between 1953 and 1986, the decade totals are shown below but the marked increase during the 1970's, which is contrary to the notable population decline, is due to increased effort to catch this species particularly at Striven's reed bed near Steyning.

	1950's	1960's	1970's	1980's
Total ringed	38	95	408	247

Although ringing has shown movements between this area and Berkshire, Dorset and Northamptonshire the only foreign movement involved a juvenile bird trapped at the Shoreham sanctuary in August 1983 and recaptured nearly 600 kilometres to the south in France just 15 days later.



Sedge Warbler

MARSH WARBLER (*A. palustris*):- A rare summer visitor and passage migrant which used to breed in the area. In July 1908 one was found probably nesting at Wiston, in 1920 there are records of a colony breeding in a withy patch near to the Sussex Pad and there is a record of possible nesting in the area in 1947. More recently there have been just three records of single birds singing in a Portslade garden on 19th June 1959, trapped at the Shoreham sanctuary on 17th September 1961 and singing near Storrington on 30th June 1985.

REED WARBLER (*A. scirpaceus*):- A common summer visitor and passage migrant which is most frequently found associated with stands of Phragmites. Although there are records from the Shoreham sanctuary on 7th April 1966 and from Steyning on 10th April 1970 most arrive in late April and May with passage birds even being recorded in June. A full breeding survey was conducted in 1986 (Newnham 1986) and revealed a total of 192 pairs with the largest numbers being found on the Adur Levels and the Sompting Brooks. In areas, like parts of the lower Adur Valley, where the ditches had been cleared or the land drained for arable farming the numbers of Reed Warblers had decreased from a previous count in 1976. A series of counts on the Adur Levels shows how the numbers in an area fluctuate.

Area of Survey	Number of pairs in each year					
	1981	1982	1983	1984	1985	1986
Adur Levels (55 ha per permanent pasture)	26	37	25	39	30	44

During the autumn most, like the Sedge Warbler, pass through the area between late July and early September and during this time can be encountered in a variety of habitats including urban gardens and the downland scrub. Early October records are not scarce but the latest birds have both been recorded at the Shoreham sanctuary on 17th October 1979 and 21st October 1973.

For the same reasons as mentioned for the Sedge Warbler, the ringing totals are not a good reflection of the populations breeding or passing through the area. The following table does however offer a useful comparison with other species, particularly the Sedge Warbler, and shows, like the 1986 breeding survey, this species to be at least twice as numerous as the Sedge Warbler.

	1950's	1960's	1970's	1980's
Total ringed	50	272	892	730

There have been several recoveries generated from the ringing and the British recoveries are shown on the map. Additionally there have been recoveries from Portugal, Spain and Morocco.



Fig. 22. Sketch map showing all movements within Britain recorded by ringing.

DARTFORD WARBLER (*Sylvia undata*):- A rare visitor to the area with only six birds recorded since 1956. The records however suggest the species bred on the downs behind Worthing during the last century as a female was shot there in 1853, a male in 1857 and young were noted at a nest in 1858. At Brighton too a pair of adults and four young were collected in July 1869. More recently only single birds have been seen; in a Worthing garden on 19th October 1956, in a Hove garden on 18th November 1961, on Steyning Round Hill on 31st March 1974 and in 1985 a total of three individuals noted

at Widewater, on the downs near Steyning and on Mill Hill on 27th October, 2nd November and 3rd November respectively.

BARRED WARBLER (*S. nisoria*):- An immature trapped at the Shoreham sanctuary on 31st August 1959 was the first record for Sussex and remains the only authenticated record in this area.

LESSER WHITETHROAT (*S. curruca*):- A common summer visitor and passage migrant which is most regularly seen in areas of thick scrub, a habitat that occurs in many sites on the downland and Adur valley. Although one was seen in Hove on 7th April 1964 in most years the first Lesser Whitethroats arrive in the last ten days of April with the main arrival in early May. There have been no large numbers seen in the spring and although widespread the breeding counts shown in the following table suggest they are not particularly numerous.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	0	1	1	2
Cote Street, Worthing (4.2 ha mixed scrub)	2	3	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	2	3	4	4

The largest numbers are recorded in the autumn, particularly in late August and early September and mainly from areas of downland scrub. During the early 1980's regular counts at Cissbury revealed autumn totals of 354 in 1980, 532 in 1981 and 400 in the autumn of 1982. Peak counts in these years were of 64 on 9th September 1980, 96 on 30th August 1981 and 33 on 27th August 1982 and these coincide with the peak of passage recorded at the Shoreham sanctuary (see figure 23) and seen at the south coast bird observatories of Dungeness and Portland (Riddiford and Findley 1981). A few linger until early October with the latest being seen at Cissbury on 14th October 1976.

Despite variations in ringing activity the following table suggests this species was more numerous in the 1970's and 1980's than the 1950's; an observation which is more apparent when compared with similar figures for the Whitethroat.

	1950's	1960's	1970's	1980's
Total ringed	13	92	306	228

From this total of 639 there have been single recoveries from Hampshire, Kent and Northamptonshire but the most interesting was ringed as a juvenile at Patcham in June 1969 and was recaptured near Eilat in Israel in the following March presumably whilst on its spring return to Europe.

WHITETHROAT (*S. communis*):- A common summer visitor and passage migrant which is mostly associated with low scrub and bramble patches. The earliest Whitethroat was seen at Hove on 7th April 1964 but most arrive during the second half of April and early May. Some peak spring counts from Cissbury include 15 on 7th May 1979, 13 on 2nd May 1981 and 15 on 2nd May 1983. Precise breeding counts are shown

in the following table; additionally there are counts of 35 pairs in 500 hectares of downland scrub in 1978 and 10 pairs at Cissbury and 8 pairs at Devil's Dyke in 1986.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Cote Street, Worthing (14.2 ha mixed scrub)	6	4	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	9	6	10	13

Like most of the other warblers the largest numbers are recorded during the autumn particularly at Cissbury where the totals were 448 in 1980, 558 in 1981 and 660 in 1982. Mid to late August is clearly the main period of migration as shown by the peak counts in each of these years which were 46 on 16th August 1980, 80 on 30th August 1981, 95 on 10th August and 108 on 19th August 1982. By mid October Whitethroats are scarce and the latest records are at Wild Park, Brighton on 21st October 1986 and at Steyning on 10th November 1971.

Despite a marked increase in ringing activity in the area during the 1970's the following table shows a reduction in the number ringed at this time. This undoubtedly reflects the massive decline suffered by this species from 1969 and into the 1970's as a result of severe drought in their African wintering quarters.

	1950's	1960's	1970's	1980's
Total ringed	233	142	137	271

Only two recoveries have resulted from ringing 783 Whitethroats; both ringed as first year birds in the autumn with one recaptured during the subsequent autumn at St. Alban's Head in Dorset and the other found dead the following May near Versailles in France.

GARDEN WARBLER (*S. borin*):- A summer visitor and passage migrant occurring in maturing scrub and woodland in small numbers. Most arrive in late April or early May but one at Hoe Court on 14th April 1977 was the earliest. Breeding counts were from several areas in 1986 with 6 pairs at Cissbury, 5 at Devil's Dyke, 3 at Findon and one at Woods Mill. Additionally the following table shows the results from a local area over several years.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Moulsecoomb/Hollingbury (280 ha scrub/wood)	1	1	6	5

Small numbers are regularly recorded during the autumn from both Cissbury and the Shoreham sanctuary but observations alone yield little information about the occurrence of this often secretive and nondescript warbler. The latest in the autumn was seen in the Adur valley on 30th October 1962.

Figure 23 shows the timing of this migration at the Shoreham sanctuary from the ringing results. The plot is an analysis of 544 mist-netting sessions between March and November inclusive for the years 1974 to 1986. The average number of unringed Garden Warblers caught in each session for each ten day period is shown and clearly

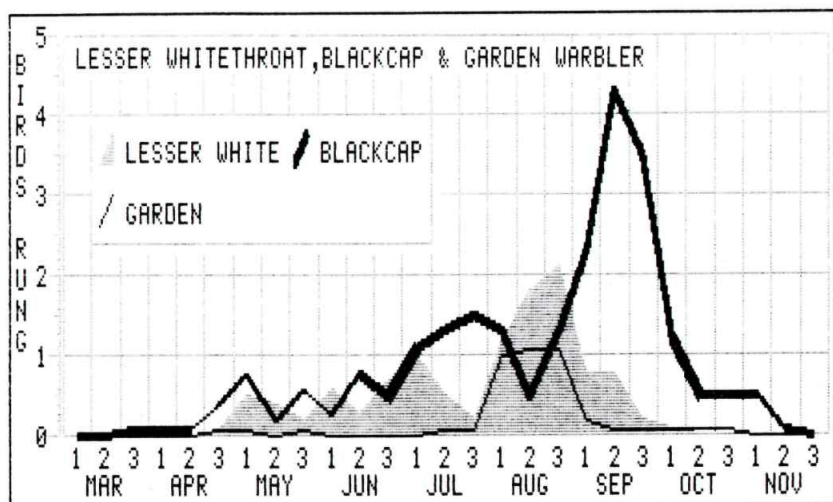


Fig. 23. The average numbers of Lesser Whitethroat, Blackcap and Garden Warbler caught in each ringing session in 10 day periods at Shoreham sanctuary (1974-1986).

demonstrates August to be the main migration month. The graph can be used to compare the volume and timing of this movement with the other regularly occurring *Sylvia* warblers (Lesser Whitethroat and Blackcap) and *Phylloscopus* warblers (Chiff-chaff and Willow Warbler — figure 24) at the Shoreham sanctuary.

The following table shows a notable rise in the numbers of Garden Warblers ringed, presumably part of this is due to the maturing of the Shoreham sanctuary to create a habitat more suited to this species.

	1950's	1960's	1970's	1980's
Total ringed	4	56	120	125

The only interesting movement of a Garden Warbler involved a first year bird ringed in Powys in mid August and found dead in Shoreham about two weeks later.

BLACKCAP (*S. atricapilla*):- This common summer visitor and passage migrant also winters in the area in small numbers. Blackcaps are most frequently seen and heard in woodlands or mature scrub during the summer, in coastal areas and in the berry rich downland scrub in the autumn and the few wintering birds are usually recorded from gardens. In the spring Blackcaps start to arrive in late March with the main arrival between mid April and mid May. The following table shows the only breeding counts in the area.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Cote Street, Worthing (14.2 ha mixed scrub)	5	9	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	11	17	18	14

During the autumn large numbers have been seen at Cissbury with totals of 629 in 1980, 594 in 1981 and 300 in 1982. Peak counts in these years were 104 on 9th September 1980, 72 on 12th September and 70 on 16th September 1981 and 97 on 9th September 1982. The timing of these counts closely conforms with the mid September peak of passage demonstrated in figure 23 from the Shoreham sanctuary but is some ten days earlier than the peaks noted at the southern bird observatories (Riddiford and Findley 1981). Passage birds are regularly noted well into November.

Blackcaps were first noted wintering in Sussex in 1947-48 and most of the counties wintering Blackcaps have been seen in gardens within 6 miles of the coast (Hughes 1979). The winter records in this area are summarised below and suggest this trend is increasing.

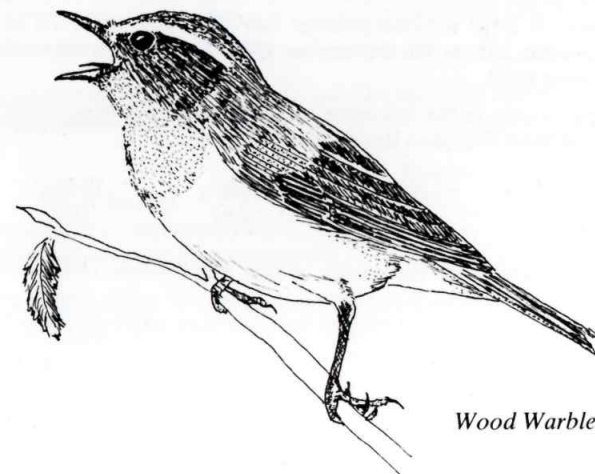
	December	January	February
Number of birds recorded	14	30	21
Number of years recorded	8 (1961-1986)	17 (1957-1986)	10 (1954-1986)
Maximum number	3 in 1986	6 in 1986	7 in 1985

The number of Blackcaps ringed in the area has steadily increased and with the recent start of a ringing programme at Cissbury high annual ringing totals can be expected.

	1950's	1960's	1970's	1980's
Total ringed	22	233	508	684

The two most interesting recoveries from the ringing involve a young male bird caught at the Shoreham sanctuary in early October 1973 and subsequently recaptured in East Germany in late April 1975, and a first year male ringed in Norway in mid October 1982 was found dead at Steyning in mid December of the same year.

YELLOW-BROWED WARBLER (*Phylloscopus inornatus*):- The only three records of this attractive vagrant are singles at Coney Hill on 15th October 1967, at new Salts Farm between 16th and 19th October 1985 and at the Shoreham sanctuary also on 19th October 1985.



Wood Warbler

WOOD WARBLER (*P. sibilatrix*):- A scarce, but regular, passage migrant recorded in most years. The earliest in the spring was one at Lancing on 19th April 1970 but most occur in late April and May and are readily recognised by their song. Between 1957 and 1986 a total of 39 has been recorded in 19 different years with the latest, and possible breeding records, being at Ashurst on 30th May 1971, at Erringham Shaw on 17th June 1962 and at Stanmer Woods on 29th June 1972.

Fewer have been noted in the autumn with only 16 seen since 1957 and with most being recorded from the Adur Valley, Shoreham sanctuary and the downland. The latest was at the Shoreham sanctuary on 26th September 1970. Only four have been ringed in the area which demonstrates again the scarcity of this species.

CHIFFCHAFF (*P. collybita*):- This common summer visitor and passage migrant also winters in small numbers in the area. In most years Chiffchaffs are recorded between December and February and are more frequently noted when cold weather forces them into gardens to feed. Although there were four at the Shoreham sanctuary in January 1961 and 1964 and at New Salts Farm in January 1983 most records are of single birds.

Spring passage of Chiffchaffs commences in March and reaches its peak at the Shoreham sanctuary at the end of March but continues until May. Numbers are never great with regularly four or five being seen at Cissbury or the Shoreham sanctuary. The only detailed breeding counts are outlined in the following table.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Cote Street, Worthing (14.2 ha mixed scrub)	3	4	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	4	6	5	10

Autumn passage starts in earnest in September and figure 24 shows that it is only in the first ten days of September that the passage of Chiffchaffs significantly overlap that of the Willow Warbler. This graph shows mid-September to early October as the main passage period at the Shoreham sanctuary although migrants continue to appear well into November. A large autumn passage has also been observed at Cissbury where peak counts include 283 on 9th September 1980, 204 on 16th September 1981 and 202 on 9th September 1982.

It is interesting to note in the following tables of decade ringing totals how the ratio of Chiffchaffs to Willow Warblers has declined.

	1950's	1960's	1970's	1980's
Total ringed	264	436	581	451

The three most spectacular recoveries of this tiny warbler are autumn recoveries in Spain, an autumn bird which landed on a boat 300 miles southwest of the Canary Islands and a bird ringed in mid May at the Shoreham sanctuary and found dead in the following January in Manchester.

WILLOW WARBLER (*P. trochilus*):- This, the commonest and most widespread of the warblers found in this area is both a summer visitor and a passage migrant. The

earliest records are 25th March at the Shoreham sanctuary in 1957 and 1959 and at Coombes in 1967. There have been several late March records at the Shoreham sanctuary but in most years the first birds arrive in the first ten days of April with a marked arrival in late April. This is the only warbler to occur in large numbers in this area on spring passage and this is clearly shown in the figure showing the ringing results from the Shoreham sanctuary. The year 1977 was a particularly good spring for Willow Warblers at this site and a more detailed study of this passage is described by Wright (1977). At Cissbury too the peak counts fall in this same period with 40 on 28th April 1976, 60 on 26th April 1978 and 65 on 26th April 1980. Most of the spring falls occur in conditions of unsettled weather with light winds from the south-west.

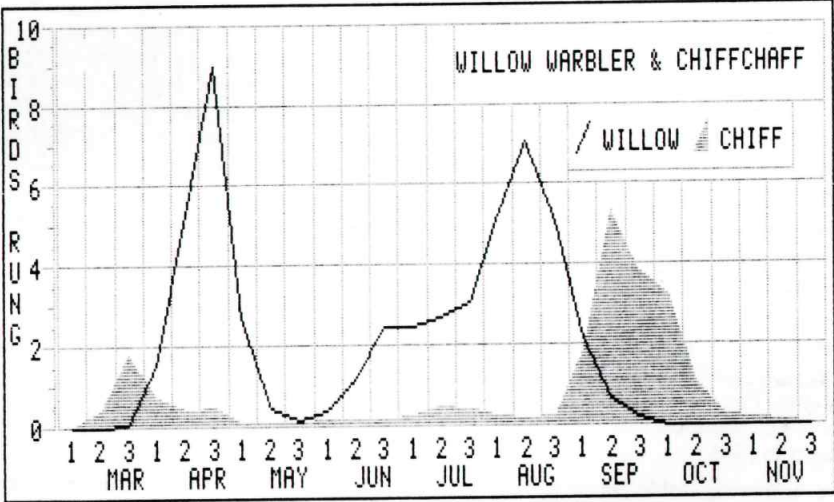


Fig. 24. The average numbers of Chiff-chaff and Willow Warbler trapped in each ringing session in each 10 day period at Shoreham sanctuary (1974–1986).

Although a widespread breeding species there are few detailed counts and these are shown in the following table.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Cote Street, Worthing (14.2 ha mixed scrub)	5	5	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	17	19	19	23

Figure 24 shows autumn passage at the Shoreham sanctuary commences in July and reaches a peak in mid August well before that of the Chiffchaff. Autumn numbers are often high — an estimated 1–2000 passed through Striven’s reed bed in autumn 1978 — and peak counts from Cissbury include 110 on 10th August 1979, 550 on 16th August 1980 and 469 on 22nd August 1980. Throughout August Willow Warblers occur regularly at many places and are frequently recorded in urban gardens. Passage

dwindles quickly in mid September and the latest was recorded at Cissbury on 19th October 1976.

The following table of ringing totals confirm this to be the most numerous warbler in this area.

	1950's	1960's	1970's	1980's
Total ringed	386	578	1432	1179

There have been several recoveries within Britain but the only overseas movements involve two September ringed Willow Warblers which were both subsequently recovered in northern Spain, one only taking a week to complete the journey.

GOLDCREST (*Regulus regulus*):- A resident and common passage migrant being found in parks, gardens and woodland particularly in areas where coniferous trees are present. Spring passage generally involves small numbers with typical records being three or four birds. In 1975 a total of 26 were trapped at the Shoreham sanctuary in March and April with no less than 10 caught on 19th April, eight were together at the same site on 22nd March 1987 but on 20th April 1958 there were 100 at Lancing Clump.

There have been no detailed counts of breeding pairs but the species can be found during the summer in areas of mixed woodland and in the towns where churchyards and large gardens hold conifers.

In some years there is a notable autumn passage, invariably in October and recorded from the downland scrub sites. Such counts as 30 on Southwick Hill on 27th October 1975, and at Cissbury 26 on 24th October 1980 and 50 on 17th October 1981 are notable. The ringing totals at the Shoreham sanctuary show marked fluctuations; years like 1975 produced 28 Goldcrests in October and November whereas none were caught in 1986.

The following table showing the ringing totals suggests Goldcrests were more abundant in the 1970's.

	1950's	1960's	1970's	1980's
Total ringed	12	35	202	109

FIRECREST (*R. ignicapillus*):- A regular but scarce passage migrant which occasionally winters; the Firecrest can be found in gardens, small copses or amongst the scrub on the downland. Between 1953 and 1986 a total of 80 have been recorded but the numbers seen in each year vary from blank years to 14 individuals in 1982.

The most noteworthy spring was 1958 when 11 were seen in late March and early April. There has only been one summer record of a female trapped at the Shoreham sanctuary on 22nd June 1986. Autumn migrants are mostly noted in October and November although one at Shoreham on 25th September 1967 was particularly early. Wintering individuals remained at the Shoreham sanctuary in 1968, 1969 and 1974.

Most records are of single birds but six were near Lancing College on 15th February 1953 and three were together at Goring Gap on 1st November and at Cissbury on 11th November in 1982.

A total of 14 have been ringed in the area since 1953 which suggests this species is 25 times scarcer than its close relative the Goldcrest.

SPOTTED FLYCATCHER (*Muscapa striata*):- A summer visitor and passage migrant which breeds in small numbers. Although one was seen on 12th April 1965 the Spotted Flycatcher is one of the last summer visitors to arrive with April records only occurring in six of the years since 1953. First arrival dates are more often between 1st and 15th May and thereafter small numbers are noted into June. Most spring records involve single birds but in 1961 a total of 10 were trapped at the Shoreham sanctuary in May and Walpole-Bond recorded 50 near Portslade on 29th May 1921.

Despite the absence of a systematic breeding survey 23 different sites have been located all showing this species preference for mature copses or woodland often near buildings.

The autumn passage of the Spotted Flycatcher is more marked than spring and extends from early August until late September with a prominent peak at the end of August and early September. Small groups are recorded throughout the area in autumn and often in coastal gardens but the largest numbers have been seen at Cissbury where the peak counts include 47 on 3rd September 1976, 50 on 29th August in both 1977 and 1979, 102 on 30th August 1979, 55 on 1st September 1980 and 60 on 3rd September 1982. The latest record of the autumn was one seen at the Shoreham sanctuary on 11th October 1976.

	1950's	1960's	1970's	1980's
Total ringed	31	64	75	24

The most exciting recovery generated from the local ringing involved a first year bird which was ringed in early September 1980 and was found dying on 27th September 1982 in Spanish Morocco.



PIED FLYCATCHER (*Ficedula hypoleuca*):- A regular but scarce passage migrant which occurs more frequently in autumn than spring. This attractive species is recorded regularly from gardens, parks, areas of mature scrub or woodland and is often seen in association with falls of other migrants.

Most spring birds are recorded between mid April and early May with two seen at Coombes on 16th April 1960 being the earliest of the 22 noted since 1953. Seldom more than one is recorded in each spring but in both 1967 and 1985 four individuals were seen.

Autumn records span between 13th July (at Portslade in 1957) and 6th October (at Hove in 1965) but most sightings occur between early August and early September with a peak in late August. Pied Flycatchers have been recorded annually since 1968 with about eight seen in each year although there were 14 in both 1968 and 1975, 18 in 1986 and 21 in 1984.

With just 33 ringed in the area there have been no recoveries.

	1950's	1960's	1970's	1980's
Total ringed	9	8	4	12

BEARDED TIT (*Panurus biarmicus*):- In the early 19th century this species possibly nested in the Adur Valley, certainly a pair was shot near the site of the cement works in 1872 and there were records from Lancing Marsh in May of 1892. A quotation of Walpole-Bond about this species in Sussex also had local significance when he states "Had it not been for the rigorous reclamation of our really big reed beds the Bearded Tit would doubtless have preserved the footing with us it once enjoyed".

In the 20th century the species has only been recorded in four years. On 12th October 1972 eight were seen at Woods Mill with two there on 30th October. Strivens reed bed near Steyning held four on 31st October 1976 and two on three dates between 25th November and 23rd December 1979. The most recent were three flying north-eastward at Widewater on 22nd October 1981.

LONG-TAILED TIT (*Aegithalos caudatus*):- The Long-tailed Tit is a resident and breeding species in the area although parties of this delightful species are most frequently seen in autumn and winter in areas of scrub or woodland. National studies suggest population fluctuations are small and the local records would support this, although some evidence suggests there is substantial mortality in hard winters. After the severe 1962/63 winter no Long-tailed Tits were trapped at the Shoreham sanctuary until 1971. Thereafter the ringing totals show a constant annual figure of between 20 and 40 birds.

Until the 1980's breeding information was very scanty with nesting remaining unrecorded in most reports. However the following series of breeding counts in defined areas give some idea of the population densities.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	0	0	0	0
Cote Street, Worthing (14.2 ha mixed scrub)	0	2	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	2	4	3	3

Most records are of autumn or winter flocks and between 50 and 60 birds are reported annually from well scattered wooded sites but this must only represent a fraction of the true number in the area.

Up to 1986 a total of 341 have been ringed in the area; the longest of the few recoveries was a bird ringed in the Shoreham sanctuary in November 1978 and recaptured 9 kilometres east in Patcham in January 1980.

MARSH TIT (*Parus palustris*):- An uncommon resident species which is most frequently observed in inland scrub and woodland habitats. Records of breeding pairs or singing males are particularly scarce with most sightings coming outside the breeding season and invariably involving either a single bird, a pair or a small party of no more than five in number. Typical areas frequented are the Beech and Ash hangers between Steyning and Chancetonbury, Cissbury, Spithandle Lane and Wappingthorne.

The numbers must be modest, perhaps 100 birds during the winter. However, in January 1961, an area of 15 square miles near Devil's Dyke held an estimated 50 to 60 birds. Up to 1986 a total of 31 have been ringed in the area and none have been recovered.

WILLOW TIT (*P. montanus*):- A resident in very small numbers, the Willow Tit is the least common of the region's tits, with only a scattering of pairs found away from the coast and preferring damp scrub and bushy areas in preference to gardens and thicker woodland. Small areas of downland scrub provide the most regular records of one or two pairs at Devil's Dyke, No-mans Land, Cissbury and Findon. Observations have also come from Striven's reed bed near Steyning, Spithandle Lane, Wiston and Buncton. More recently one or two pairs have been recorded at Woods Mill.

Like the other tit species the population seems to be stable in the area but the total is difficult to calculate. In 1985 the records suggest 15 birds were seen in their usual localities. Only 23 have been ringed in the area until 1986 which reaffirms this as the scarcest of the tits.

COAL TIT (*P. ater*):- A resident species with breeding only occasionally recorded but with more regular sightings in the autumn and winter months. Noted in the 1960's at Widewater, Patcham, Shoreham and Steyning. The records suggest an increase in numbers from 1971, an observation supported by the ringing totals which are shown below:-

	1950's	1960's	1970's	1980's
Total ringed	18	10	61	34

Coal Tits are well distributed throughout the area but show a marked preference for conifers and are therefore seen more frequently in woods, gardens or churchyards, near the coast or inland, where conifers can be found. During the 1970's there were more records away from their preferred habitat; there were regular sightings at the Shoreham sanctuary where it is an unusual species and in 1978 five were seen moving through Shoreham in November. During the winter it regularly can be found with other tits feeding from bird tables and peanut feeders.

BLUE TIT (*P. caeruleus*):- Without question this familiar bird is the most abundant of the tits often seen in large feeding parties constantly on the move through gardens, hedgerows, woods or bushy areas. In urban gardens the species readily takes to nesting in nest boxes and during the winter is probably the most common in attendance at bird tables and peanut feeders. There are no long term local breeding studies but the recent counts shown below confirm it to be the most numerous breeding species of tit and demonstrates it to be a species of woodland and scrub rather than the open levels.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	1	3	2	2
Cote Street, Worthing (14.2 ha mixed scrub)	4	11	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	26	46	57	55

Even in woodland the Blue Tit will readily nest in boxes and in recent years between 15 and 20 have used nest boxes at Woods Mill.

The ringing totals too confirm this as the most numerous of the tits and the total of 6233 shows this to be the second highest total for species ringed in the area.

	1950's	1960's	1970's	1980's
Total ringed	867	915	2537	1914

There is evidence of coastal movements in the autumn which was first reported by Walpole-Bond when he mentioned "visitors" on the coast. In 1949 several large parties were seen in Brighton and Hove and in the early 1950's between 50 and 60 birds were seen moving westward at Shoreham. The ringing at the Shoreham sanctuary too has confirmed some short movements as 15 recoveries have been reported between 9 and 72 kilometres with a predominantly westward movement in the autumn and east or northeasterly movement in the late winter or spring. In 1986 two Blue Tits ringed at Beachy Head on 26th and 27th September were found at the Shoreham sanctuary on the 8th and 4th October respectively.

GREAT TIT (*P. major*):- This, the largest of the tits, is mainly a resident species and is seen, like the Blue Tit, in many gardens and all rural areas where hedgerows or trees are found. It too regularly attends bird feeding stations in the winter, and in spring will nest in artificial boxes. At Woods Mill between 15 and 20 regularly occupy nest boxes. The following table shows some systematic breeding counts. Regrettably, like many common species, there were few local breeding counts from the 1950's and 1960's to act as a comparison.

Area of Survey	Number of pairs in each year			
	1983	1984	1985	1986
Adur Levels (55 ha permanent pasture)	1	1	1	1
Cote Street, Worthing (14.2 ha mixed scrub)	8	12	—	—
Moulsecoomb/Hollingbury (280 ha scrub/wood)	15	21	32	29

The ringing totals shown below also give an idea of the relative abundance of this species and suggests it is between a third and half as numerous as the Blue Tit.

	1950's	1960's	1970's	1980's
Total ringed	318	326	1006	733

Walpole-Bond records minor coastal movements in the autumn but in years when the beech mast crop is poor then continental birds erupt southward and westward (Perrins 1966); the bird ringed at Shoreham on 12th March 1960 and recovered in Bremerhaven, Germany on 7th July 1960 was presumably an example. From the total of 2383 Great Tits ringed in the area a further four movements between 35 and 55 kilometres have been recorded.

A melanistic male was seen by the Shoreham airfield on 13th November 1983.

NUTHATCH (*Sitta europaea*):- A resident species for which the few, but regular, sightings indicate a small population. Most of the records are from the inland section of the region which can claim the large stands of deciduous woodland which are this species' principal habitat. The areas of Buncton, Wiston, Spithandle Lane and the north scarp of the downs provide most of the records but many of the inland woods are seldom watched so this species is probably under-recorded. In 1985 the breeding records were of a single pair at Clapham Woods and two pairs at Wiston, Woods Mill and Steyning Horseshoe.

There are occasional sightings away from the usual sites with records from Chanctonbury, Cissbury, Hill Barn, Bramber, Buckingham Park in Shoreham, Stanmer, Swan-dean and Durrington.

TREECREEPER (*Certhia familiaris*):- A resident species occurring in small numbers and specialising in the deciduous woodland habitat which is mainly found inland and north of the downs. They are therefore found and breed in similar areas to the Nuthatch. However, unlike the Nuthatch, Treecreepers are regularly seen in mature gardens and parks south of the downs and they regularly occur and nest at Coombes, Lancing and Patcham with occasional sightings from other sites including the Shoreham sanctuary.

Although six were seen at Wiston on 3rd January 1983 they are seldom seen in groups of more than two even in the richest of oak wood habitat, it is unlikely therefore that the population exceeds 100 for the area.

A total of 54 have been ringed in the area and the little information this has yielded merely supports the observations that this is a sedentary species.

GOLDEN ORIOLE (*Oriolus oriolus*):- This brightly coloured but secretive species has only been seen in 12 years since 1852. During the 19th century records suggest a pair probably bred near Worthing in 1852, one was shot near Brighton in May 1866 and four were noted at Shoreham in 1872. The 20th century records, involving 9 birds, cover just seven years and apart from a pair at Lancing on 17th March 1962, which were thought to be escapes, they all fall between 8th May and 1st July. The most recent Golden Oriole was seen at Steyning on 27th May 1973.

RED-BACKED SHRIKE (*Lanius collurio*):- Up until the mid 20th century this species was a regular summer visitor and Walpole-Bond described it as breeding generally throughout Sussex in suitable habitat but noted that during the 1930's and 1940's that it was becoming progressively scarcer. In 1955 a pair nested near the Sussex Pad, Lancing; in 1956 three different individuals arrived in May but none bred; in 1957 a pair raised four young in Findon Valley and in 1958 a pair frequenting the lower slopes of Salvington may have been the last breeding attempt.

Thereafter the Red-backed Shrike has become a scarce species with only eight single birds recorded in different years. Seven of these are autumn birds noted from downland sites between 14th August (in 1980) to 3rd October (in 1965) and the only spring record was a female seen at Striven's reed bed near Steyning on 8th June 1977.

GREAT GREY SHRIKE (*L. excubitor*):- An irregular migrant and rare winter visitor which is most frequently seen on the downland. Walpole-Bond only listed three records from the 19th century but this included one near Worthing in July. The table of monthly sightings since 1953 however shows the recent records to fall between 15th October (in 1982) and 25th April (in 1969).

	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Birds recorded in each month	3	6	6	6	7	3	1

Most records are of single birds but two overwintered at Worthing refuse tip in each year between 1968 and 1971. These were probably the same two individuals and it is possible that as few as 13 different birds are involved in the records since 1953. Great Grey Shrikes have become scarce in recent years as the following table suggests.

	1950's	1960's	1970's	1980's
Different birds recorded in each decade	2	7	6	1

WOODCHAT SHRIKE (*L. senator*):- An adult female was shot at Preston, Brighton on 4th May 1866. Two immatures were seen on 12th September 1956, one near Shoreham refuse tip and the other at Shoreham sanctuary, an immature in a Portslade garden between 7th and 9th October 1958 and one near Hove between 10th and 13th June 1981 are the only records of this rare shrike.

JAY (*Garrulus glandarius*):- This, the most colourful of the crow family, is most frequently encountered in woodland where it can be found in small numbers throughout the year. Unfortunately the local reports give no indication of the numbers to be found in the downland and wealden woods but the records suggest the numbers may be rising which is in accord with the steady and widespread increase reported throughout Britain (Parslow 1973).

Most records in this area are of groups of Jays seen over the downland or coastal plain during autumn and particularly in years when large "invasions" occur. The largest movements recorded in Britain occurred in 1983 (John and Roskell 1985) and most were seen in Cornwall although local records included 50 at the Shoreham sanctuary

on 1st October, 417 flying north over Cissbury and 52 flying west at Patcham on 2nd October and 122 flying northward over Brighton on 4th October. During other irruption years the numbers seen have been much smaller with records of 16 at Cissbury on 13th October 1976, 26 flying west over the Shoreham sanctuary on 7th October 1977 and a total of 57 flying south-westward over the area between 3rd and 13th October 1981.

Following autumn invasions a few are noted, presumably returning to natal areas, during the spring; 9 flying over Worthing on 27th April 1982 and a total of 24 flying north or north-east between 25th April and 30th May 1984 are the most noteworthy. It is likely that many of the autumn Jay flocks include birds from the continent as national ringing studies have shown British Jays have a sedentary nature and three Jays shot in Shoreham in December 1934 were attributed to the continental race.

MAGPIE (*Pica pica*):- This distinctive species is both common and widespread. Like many of the numerous and sedentary species there is little precise information on the numbers which breed in this area. Many observers, however, feel there has been an increase, with pairs now regularly occurring in urban gardens as well as rural habitats. Records at the Shoreham sanctuary demonstrate this increase with two being the regular number during the 1960's, four were seen in 1974, six in 1975, up to eight in 1977 and by 1986 small groups totalling 18 regularly occurred with 35 noted on nearby Mill Hill in 1985.

The only precise breeding counts have occurred in the Moulsecomb and Hollingbury area where 23 or 24 pairs have been counted in 280 hectares of scrub and woodland. The roost at this site regularly supports in excess of 60 Magpies and in January 1986 102 were counted. Apart from this area the only other large winter gatherings have been 51 at Washington sand pits in December 1981, 24 near Tottington in January 1984, 25 at Lancing College in December 1984 and 24 at Cissbury in December 1985.

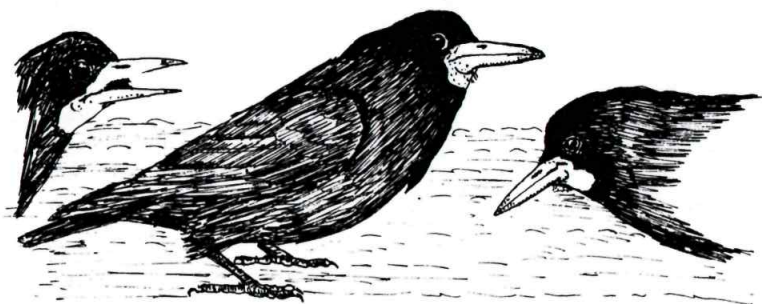
One flying north over the beach at Widewater on 10th November 1979 is the only record which may represent some movement of this usually sedentary species.

CHOUGH (*Pyrrhocorax pyrrhocorax*):- Notes of the late C. A. Grigg from the Steyning area record one being seen in 1952 and in 1954 a pair built a nest in an old barn, 7 eggs were laid but unfortunately the nest was destroyed. Des Forges and Harber note Choughs were breeding on the chalk cliffs of Sussex until about 1830 but feel all subsequent records are escaped birds.

JACKDAW (*Corvus monedula*):- Although this is a common species found in both urban and rural habitats there are very few records to be found in either the local or county bird reports. Consequently little is known about either the breeding distribution and population or the site and size of the winter roosts. The largest flocks recorded are 400 on the Adur Levels and 200 near the cement works at Upper Beeding in October 1984, and between 3-500 regularly gather just before dusk during the winter months in the 1980's at the Sompington refuse tip.

The only other records refer to small numbers recorded moving over the coast or the downland; the most notable was recorded soon after the large Jay movements in 1983

when 120 flew west at Brighton on 20th October and 180 flew east at Cissbury on 18th November.



ROOK (*C. frugilegus*):- This familiar corvid is most well known for its habit of nesting in colonies or rookeries which are often placed precariously near the tops of trees. Frequently flocks can be found feeding on agricultural fields or gathering before flighting to roost.

Like all the other corvids there is very scanty information about the sites and numbers attending the rookeries before the 1960's. A rookery at Patcham held 160 nests in 1967 and three small colonies at Clayton had 80 nests in 1968. The most complete breeding information however, comes from a survey conducted by the Sussex Ornithological Society between 1972 and 1975 and described by Merritt (1977). This survey showed three of the county's largest rookeries were in this area with 189 nests at Sompting, 128 at Edburton and the rookery at Patcham which by 1975 held only 106 nests. This study revealed a total of 1232 rook nests in 52 different rookeries and the following table shows these in each tetrad (2 km × 2 km).

Tetrad	Site	Rookeries	Nests	Tetrad	Site	Rookeries	Nests
TQ0802	Ferring	1	2	TQ2406	Mile Oak	1	6
0804	Highdown	2	59	2808	Patcham	1	106
0806	Clapham	3	54	2010	Golding Barn	1	6
0808	Myrtle Grove	3	102	2210	Edburton	2	35
1004	Cas. Goring	2	6	214	Woodmancote	3	35
1204	Salvington	1	14	2610	Devils Dyke	2	37
1208	Findon	2	11	2612	Newtimber	4	97
1606	Sompting	1	189	2812	Pyecombe	1	48
1808	Botolphs	2	50	2814	Clayton	1	50
1810	Bramber	3	35	3014	Clayton	1	21
1814	Adur Levels	1	12	3003	Brighton	1	21
1412	Wiston	1	17	3214	Ditchling	1	7
1612	Wappingthorne	3	54	3212	Ditch. Beacon	2	26
2004	Shoreham	1	3	3012	New Barn	1	67
2206	Slonk Hill	1	25	3208	Coldean	2	26
				3206	Moulsecomb	1	11

In 1980 a national sample survey organised for the British Trust for Ornithology found 530 nests in 14 rookeries in the southern half of TQ21 (Sennitt 1980), a notable rise from the 308 nests in 13 rookeries found in the same area in 1975.

The only other records are of counts in the autumn and winter, the most noteworthy being 250 at a roost on Highdown in November 1977, 500 at the Sompting refuse tip in the evening of 20th January 1982, 650 at Coombes on 30th October 1983, 200 at Cissbury on 16th August 1984 and 170 at Beeding Hill on 9th December 1984.

CARRION CROW (*C. corone corone*):- This is a widespread species being found in both rural and urban areas. There is no detailed information on breeding numbers although the records suggest that since the mid 1970's the Carrion Crow has become more numerous as a breeding species in the towns. Gatherings occur on the Shoreham airfield where 30 were counted in the autumn of 1978 and 84 in the autumn of 1985. There were 300 amongst a large corvid flock at Sompting refuse tip on 20th January 1982 and at least 100 were found roosting at Highdown in January 1978.

During recent years there has been an increase in the numbers gathering and feeding on the beaches, this has been most notable between Worthing and Ferring where between 20 and 30 occurred in the early 1980's whereas in 1985 and 1986 flocks of 50 or more were seen regularly.

It has been noted that many of the crows feeding on the shore have a browner tinge to their plumage than those found inland. A family party in Worthing in 1985 and 1986 all had clear white wing bars and an individual at Beeding on 23rd July 1969 had a white head.

HOODED CROW (*C. corone cornix*):- This distinctive race is a scarce winter visitor and passage migrant. The records suggest about 26 individuals have been seen in the review period with none being seen since 29th March 1977. The following table suggests there has been a decline in the numbers visiting this area, presumably as a continuation of the decline which des Forges and Harber noted when compared with late 19th century.

1950's	1960's	1970's	1980's
13	4	9	0

A monthly analysis of the sightings show this to be most common in the winter months, the earliest being recorded on 30th October in both 1960 and 1975 and one at Patcham on 31st May 1971 was the latest.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
8	5	4	1	3	—	—	—	—	2	6	5

Most have been recorded as singles although up to three have been noted at the Shoreham refuse tip in 1952, 1953 and 1955. In Britain both types of crows are non-migratory whereas the northern Scandinavian birds, which are Hooded Crows, are migratory and it is probably these that have been seen in this area.

RAVEN (*C. corax*):- A single bird on the downland near Steyning on 15th January 1977 is the only recent record although one was recorded in December 1873 and a letter dated 1929 notes that a Raven was seen daily in Findon Valley.

STARLING (*Sturnus vulgaris*):- A very familiar species which appears in most habitats and has adapted well to an urban environment. The resident Starlings breed successfully in towns, farmsteads and woodlands but it is from the autumn and winter that most records come when the resident population is joined by a large number of winter visitors from continental Europe.

There are no detailed counts of breeding numbers and the only notable record in the spring involved a roost of 2000 at No-man's Land on 20th May 1972. In early autumn numbers are similar; the largest count being of 2000 at a downland roost north of Shoreham in August 1975.

In late October and November the continental birds arrive for the winter. Occasionally large movements of presumably migrating birds are seen; on 27th October 1956 a total of 1100 flew west at Hove and 8400 were counted arriving over the sea at Shoreham. The scale of this autumn influx can be judged from a series of counts taken at a downland pre-roost gathering in 1966 when 5000 were counted on 29th October,

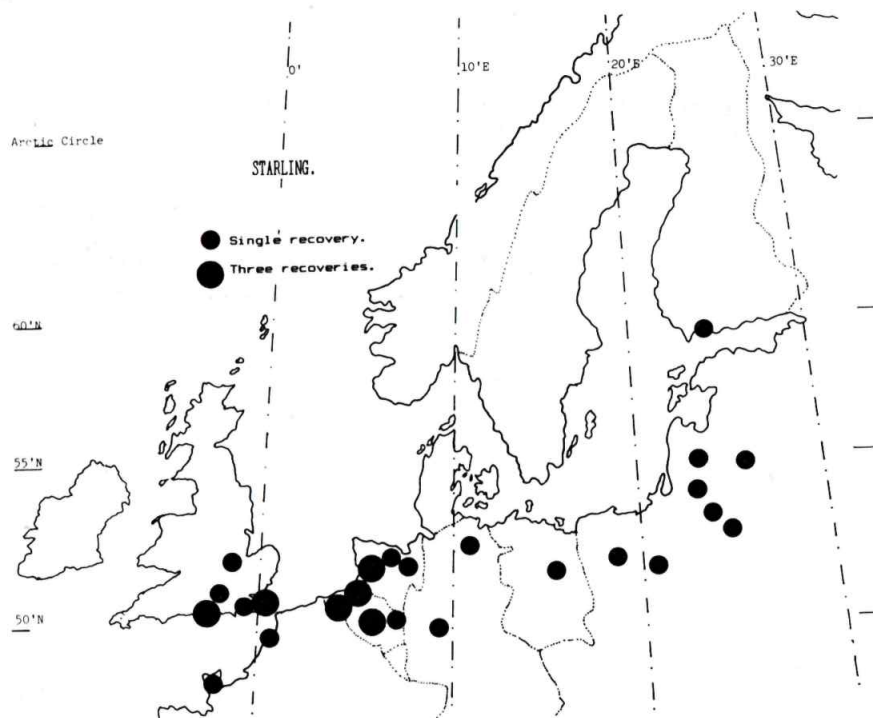


Fig. 25. Sketch map showing all distant movements recorded by ringing in the area.

17,000 by 5th November and 30,000 on 20th November. Large feeding flocks or pre-roost collections are not uncommon from late October, throughout the winter, until mid-March and most of the largest flocks have been seen on farmland particularly on the downs.

Examples of these impressive flocks include 100,000 north of Lancing on 7th March 1979, 75,000 also near Lancing on 14th March 1968 and 30,000 on the downs near Cissbury in November 1974.

Information about the site and size of the large communal roosts is not always documented but in the autumn of 1976 and 1977 up to 50,000 roosted at the Shoreham sanctuary, in the winter of 1983 the roost at Southlands Hospital in Shoreham held 5000 birds and in 1985 a Portslade roost was 50,000 strong and there were 10,000 birds in the Brighton Steine roost.

Starlings are occasionally involved in cold weather movements, usually small numbers are noted but 90,000 flew westward over Southwick in 2 hours on 9th December 1967 and 7500 arrived from the southeast at Hove on 31st December 1978.

Between 1953 and 1986 a total of 4253 Starlings had been ringed in the area, and the map shows the foreign recoveries generated from this effort. Most have been ringed during the winter months and the map clearly shows the areas from where the wintering Starlings originate.

There are several records of partially albino Starlings but in 1968 an albino individual nested in Lancing.

ROSE-COLOURED STARLING (*S. roseus*):- An adult male shot from the back of a sheep near Brighton on 20th August 1870 is the only record.

HOUSE SPARROW (*Passer domesticus*):- A numerous and widespread species which can be seen throughout the year. Most are seen in the towns or near buildings where they readily find sites for nesting and House Sparrows are a familiar sight attending bird tables and feeding on kitchen scraps. During the autumn and winter flocks can be found feeding on farmland. The largest gathering of 900 was noted at a roost on 30th January 1973 at Southlands Hospital, Shoreham.

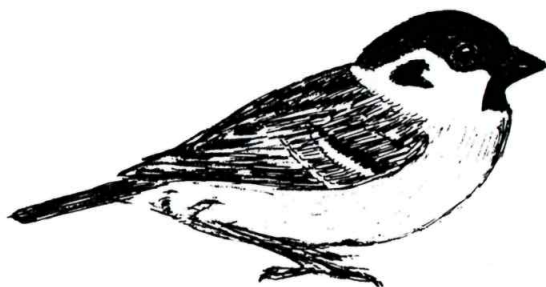
Although mainly a resident species there is some evidence that some may migrate in the autumn as a total of 100 were recorded moving with other finches in October 1957.

Partial albinos quite often occur, being at one time regularly recorded in one Shoreham population, and complete albino birds were seen in Brighton in July 1976 and West Tarring in 1978 and 1979.

TREE SPARROW (*P. montanus*):- This is mainly a winter visitor to the area but a small number are resident and there are about 25 recorded instances of attempted breeding. Tree Sparrows readily occupy nest boxes but the only records are of pairs in boxes in Shoreham in 1954 and in Lancing in 1975.

Winter flocks seem to fluctuate enormously, though to what extent this reflects the true population is uncertain. In the winters of 1962/63 and 1972/73 peaks of 1200 were

recorded, otherwise 500 was the most in 1970/71 and 480 in 1977/78. In some winters only 9 or 10 have been recorded, while the general mean of the years 1984-86 has been between 40 and 50. Winter flocks are mostly found on agricultural ground or waste ground where seeds can be found with favoured locations being at Goring, Cissbury, Brooklands and the Brighton parks.



CHAFFINCH (*Fringilla coelebs*):- A common resident species which breeds in woodlands, hedgerows and gardens throughout the area. There has been no comprehensive survey or regular breeding census to estimate the local population but national studies suggest only minor fluctuations in the population occur from one year to the next (Sharrock 1976), although after the severe winter of 1963 a small decline was noted in the populations at Findon, Cissbury and Steyning.

Unlike other resident finches and buntings, this species does not seem to congregate in autumn flocks until the end of September. However, large movements have been recorded in October, notably 950 flying westward over the downs on 12th October 1980 and 540 also flying westward there on 19th October 1981.

Winter movements are seldom observed with 100 flying west at Brighton on 15th January 1966 being an exception and winter flocks are rarely more than 300, the largest being 600 near Chanctonbury on 23rd March 1969 and 550 in Stanmer Great Wood in December 1983. The ringing of Chaffinches has shown that many of the birds wintering in Britain are from the continent and that females tend to migrate further than males. However, from the total of 1497 Chaffinches ringed in this area only one female, ringed at Steyning in January 1974, has been recovered on the continent, in Denmark during July 1974.

BRAMBLING (*F. montifringilla*):- This attractive winter visitor has been recorded in every year. Usually less than 100 are seen but exceptional winters were 1962/63 when 280 were recorded, 1965/66 with 680 birds and 1983/84 when about 535 were logged.

The earliest autumn sighting was of three at the Shoreham sanctuary on 30th September 1959. Most are seen at Cissbury, on coastal refuse tips and wasteland and in the Brighton Parks and are frequently seen in flocks feeding with other finches. One flock of 30 fed on peanuts put out in a Brighton garden throughout January 1984. On

two occasions singing males have been recorded, at Cissbury on 12th April 1982 and at Wiston on 12th April 1984. The latest was seen at Chanctonbury on 14th April 1972.

SERIN (*Serinus serinus*):- Singles were caught at Hove on 9th April 1866 and near Brighton on 1st April 1873. It is interesting that the only recent records of this species have occurred in the 1980's also near Brighton. Singles were seen at Sussex University on 13th May 1980, flying northward over Brighton marina on 13th May 1982 and near Brighton on 26th September 1982.

GREENFINCH (*Carduelis chloris*):- This brightly coloured familiar finch is a common and widespread resident being found in woodlands, on agricultural and waste land, in parks and gardens or even feeding on the shore. It breeds throughout the area but there is no available information on the numbers.

Greenfinches gather in small flocks between June and September and the records suggest flocks of 100 to 200 occur regularly but the 1200 seen at Cissbury during one September was exceptional. Larger flocks, of between 300 and 1100, are more regularly seen between October and March and are no doubt swollen by autumn immigrants.

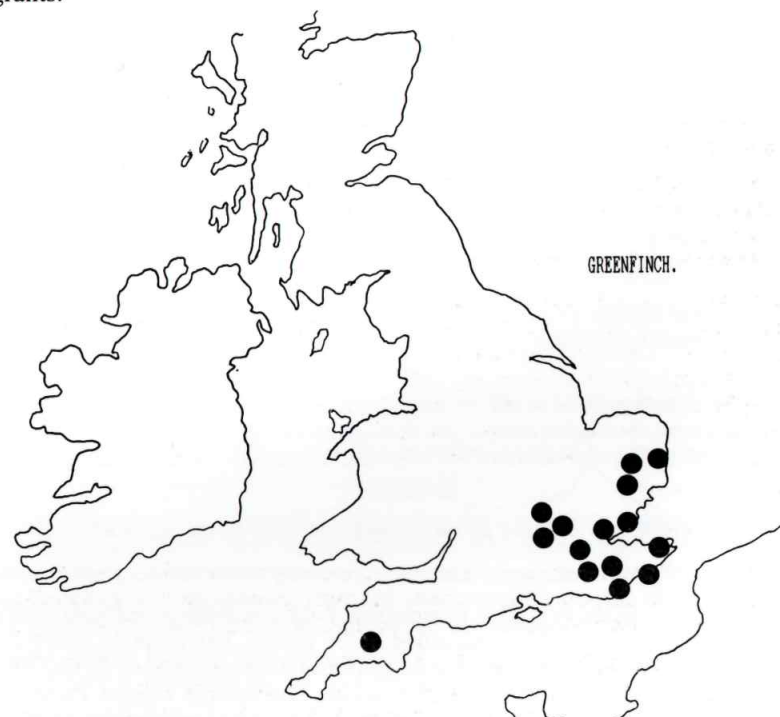


Fig. 26. Sketch map showing all distant movements recorded by ringing at Shoreham and Worthing.

Coastal movements are very small during the spring but more are seen during the autumn with 170 flying westward in just 20 minutes on 19th October 1982 being the largest recorded movement. Visible cold weather movements too are unusual; 200 noted flying over on 15th January 1966 being noteworthy.

Up to 1986 a total of 4797 Greenfinches have been ringed in the area and the recoveries suggest that most remain local and none have been recovered abroad. The map of more distant recoveries within England suggest that Greenfinches undertake short movements in a south or south westerly direction for the winter.



Fig. 27. Sketch map showing all movements recorded by ringing at Shoreham.

GOLDFINCH (*C. carduelis*):- This conspicuous finch is a common summer visitor and passage migrant with a few being recorded in the winter. There are no figures for the breeding population but in late summer and autumn flocks of between 50 and 300 birds gather particularly in areas where thistles occur. The records suggest these autumn flocks have become smaller in the past decade and must be considerably smaller than in the 1860's when reports state that 132,000 were being trapped near Worthing in each year.

During settled weather in October large coastal movements are seen, examples being 500 flying eastward at Hove in 25 minutes on 18th October 1972, 320 flying east at Widewater on 1st October 1984, and a total of 774 flying eastward at Worthing during October and November 1985.

Prior to 1980 winter records were comparatively scarce, the most notable being a cold weather movement of 40 at Brighton on 15th January 1966. More recently flocks of up to 20 have been seen although the 70 noted at Upper Beeding on 9th March 1966 may have been early spring migrants. Each spring small parties are seen arriving from the sea or coasting, the largest numbers being totals of 250 flying north over Brighton in 1981 and 185 there in 1984.

Until 1986 a total of 1856 Goldfinches have been ringed in the area and the ringing at the Shoreham sanctuary is described by Wright (1978). The map showing the recoveries generated from this ringing demonstrates the extent and direction of movements during the autumn and winter.

SISKIN (*C. spinus*):- This autumn and winter visitor was only irregularly recorded prior to 1969 with annual totals invariably in single figures and many years with no records at all. Siskins are not normally noted until early October but one at Steyning on 13th September 1977 was the earliest. On 20th September 1985 an exceptional movement of 231 flying westward over Cissbury was recorded, otherwise there have been no significant autumn movements. As a winter visitor, however, it is far more common with Siskins now regularly visiting local garden bird feeding stations in late winter feeding particularly on peanuts.

There is no evidence of breeding but there is an old record of a male singing at Cissbury in 1892 and three were displaying at Storrington on 21st April 1966. The latest record however, refers to 8 seen at Storrington on 26th April 1978.

Only one Siskin has been ringed in the area but an adult female found dead near Storrington on 27th March 1976 had been ringed in West Germany in November 1974.

LINNET (*Acanthis cannabina*):- This resident and migratory species breeds widely in hedgerows and downland scrub. There are no available counts to estimate the breeding population or note whether this is changing.

Large flocks begin to congregate, mainly on agricultural or waste ground, from the end of July and these grow in size as the autumn and winter progresses, the largest being 2500 near Devil's Dyke in February 1979 and 1500 at both Stump Bottom in February 1969 and at the Shoreham sanctuary in January 1979.

Although flocks of Linnets are noted emigrating during the late autumn months from Selsey Bill (Shrubb 1979) there are no significant autumn movements noted from the local area. Winter movements however, have been recorded with 200 passing westward at Brighton on 15th January 1966 and small numbers passing all day at Brighton marina on 31st December 1978. In contrast to the autumn there is a notable spring arrival and coastal passage with most noted in April; maximum totals were 229 flying east and 54 west at Worthing in 1982 and 363 recorded at Brighton marina in the spring of 1984. Only one recovery has resulted from ringing 671 Linnets; a female ringed at the Shoreham sanctuary in August 1975 was subsequently trapped in Spain during April 1977.

A male picked up dead on Steepdown had the red areas of plumage replaced by yellow and there was a partial albino seen at the Shoreham sanctuary on 18th October 1977.

TWITE (*A. flavirostris*):- A regular, but not numerous, winter visitor found mainly feeding on the seeds of the saltmarsh plants by the River Adur at Shoreham. Five were taken at Shoreham in December 1869 and a sighting on 9th February 1886 are apparently the only records prior to 1957 when a flock of 40 were discovered wintering. In subsequent years numbers have fluctuated with occasional years of absence.

The earliest record in the autumn is of four seen at Widewater on 17th October 1957 and the latest sighting was 17 at Shoreham on 17th March 1965. In recent years a few have been seen amongst the finches at Goring Gap.

REDPOLL (*A. flammea*):- An autumn migrant and winter visitor, the Redpoll is seldom seen in large numbers and totals usually are less than 100 seen in each year. However two autumns have been exceptional, in 1975 at least 300 passed eastward over the Shoreham sanctuary on 11th and 12th October with another 130 seen elsewhere whilst in 1985 a total of about 160 were recorded. A little light on the origin of these autumn movements is shed by the only ringing recovery from the area, a young bird ringed at the Shoreham sanctuary in early November 1975 was subsequently found in late April near Boston, Lincolnshire.

There are few records of spring migration, three flying north at Hove on 18th May 1978 and two arriving from the sea at Worthing on 7th May 1981 are the only records. Summer records are equally scarce with a single male at Coombes on 17th June 1962, a male singing in Queen's Park, Brighton on 14th July 1972 and one at the Shoreham sanctuary on 18th July 1982.

Most of the Redpolls seen, and all those trapped in this area are of the race *cabaret* but individual Mealy Redpolls (*A. f. flammea*) were seen at Shoreham rubbish dump on 25th October 1964 and at Washington in November 1964.

CROSSBILL (*Loxia curvirostra*):- An infrequent visitor to the area, invariably in small numbers and with most records falling between July and October. Exceptional numbers were seen in 1962 when 32 flew over Portslade on 25th July and in 1964 when parties of a "dozen or so" were seen at Wiston, Washington and Ashurst.

There was only one record in the 1970's but the species seems to have reinstated itself in the 1980's with records regularly from Wiston, Washington and Storrington. At this last locality a juvenile was picked up dead on 27th June 1981 but there has been no proof of breeding though it was said to have nested between Washington and Steyning prior to 1953 and a party of up to 10 were at Washington between 8th April and 12th May 1957.

SCARLET ROSEFINCH (*Carpodacus erythrinus*):- A female caught near Brighton by birdcatchers in the last week of September 1869 was the first British record and the only record in this area.

BULLFINCH (*Pyrrhula pyrrhula*):- A common resident species seen throughout the year in parks, gardens, and areas of woodland or scrub. There are only a few records and most information has come from the Shoreham sanctuary where most of the areas total of 1209 Bullfinches have been ringed. Although there have been recoveries in Worthing, Steyning and Brighton, this study shows the species is mainly sedentary with many being retrapped in the same site in subsequent years. Observations and the ringing totals suggest that more were present in the copse during the 1970's with a ringing total in 1977 of 67 whereas, since 1979 the annual totals ringed have ranged between 13 and 29 birds.

HAWFINCH (*Coccothraustes coccothraustes*):- This, a rare bird in the area, has occurred on 10 occasions with 19 individuals noted in 9 different years.

There is no tangible evidence for breeding although a pair was reported from Ashurst in 1905. There is no pattern to the remaining records which are listed chronologically: one at Lancing College sometime prior to 1953; a female at the Sussex Pad on 4th April 1958; two flying south over Brighton on 21st December 1966; a male in a



Shoreham garden on 24th November 1969; three on Chantry Hill on 30th October 1971; two males at Cissbury on 5th December 1971; one at Chanctonbury on 19th June 1977; one in Brighton during the autumn of 1978 which was finally caught and eaten by a cat; and finally five on the downs above Storrington on 21st July 1983.

LAPLAND BUNTING (*Calcarius lapponicus*):- There are only two recent records of this rare winter visitor; two flew south over Brighton on 21st December 1966 and a first year male at Goring between 19th and 22nd November 1985 was joined by a female on the 21st. During the 19th century bird-catchers on the downs near Brighton collected an adult male on 30th September 1844 and an adult pair on 5th November 1890.

SNOW BUNTING (*Plectrophenax nivalis*):- An unusual winter visitor with just over 40 records occurring mainly between November and February. The earliest arrivals were

two at Devil's Dyke on 20th October 1983 and the latest individuals stayed on Worthing beach until early April in 1976 and in Shoreham harbour until 30th March 1982.

Most are seen in singles or small groups but a most remarkable flock of 50 was found on a ploughed field near Coombes on 12th March 1958 and during the cold winter of 1962/63 a small flock around Shoreham houseboats was filmed on a cine camera. Apart from two seen at Devil's Dyke and three individuals seen on the downs on 23rd November 1952, 23rd March 1958 and 26th October 1983, most of the records are from near the coast or in the Adur Valley.

YELLOWHAMMER (*Emberiza citrinella*):- A common resident species which is a familiar sight on the downs. There are no regular counts of the population breeding on the downland but observations at Southwick Hill in 1972 indicated a poor breeding season. From autumn through the winter Yellowhammers can be found in small flocks feeding in agricultural habitats on cereal grain and seeds. Flocks of 20 or more are regular and in most years a gathering between 150 and 200 can be found near Cissbury with 300 at Patcham in February 1969 being the largest flock noted. Ringing studies have shown this to be a sedentary species so 30 flying over Brighton during cold weather on 15th January 1966 is noteworthy.

One was reported from a Worthing garden on 18th January 1966, but otherwise this species is confined to downland and rural areas.

CIRL BUNTING (*E. cirrus*):- This attractive bunting was formerly a resident species breeding in small numbers usually on the south facing slopes of the downs. This species has now disappeared from this area following a catastrophic decline in Sussex (Wilson 1973) and on a national level (Sitters 1982).

Records are somewhat incomplete but tend to suggest they were fairly common in the first part of this century. Since records have been regularly kept, there appears to have been about 20 pairs in the 1950's, declining to 6-9 pairs in the mid 1960's, 2-3 pairs in the early 1970's and the last pair at Hoe Court, Lancing had gone by 1979. Up to 10 pairs once bred in a colony in Findon Valley but this had disappeared by 1965. Whilst they were reasonably common a winter flock of 40 was noted at Lancing in March 1958.

Since the last pair was seen there have only been two records of singles seen on the downs on 16th April 1980 and in the autumn of 1981.

ROCK BUNTING (*E. cia*):- Two caught around St Nicholas Church, Shoreham towards the end of October 1902 were the first for Britain and the only record in the area.

ORTOLAN BUNTING (*E. hortulana*):- There are just six records of this species. Four were individuals collected at Brighton on 29th April 1841 and sometime in 1870, at Worthing on 27th April 1852 and on an unknown date at Shoreham. More recently one was seen on the downs near Steyning on 29th August 1982 and a first year male was trapped at the Shoreham sanctuary on 11th September 1985.

RUSTIC BUNTING (*E. rustica*):- An individual caught near Brighton on 23rd October 1867 was the first record for Britain and remains the only record for this area.

LITTLE BUNTING (*E. pusilla*):- One caught near Brighton by birdcatchers on 2nd November 1864 was the first for Britain and, like the previous species, remains the only area record.

REED BUNTING (*E. schoeniclus*):- A common resident species which breeds mainly on the coastal plain and in the Adur Valley. The records are incomplete but suggest the population may have increased in recent years; a count in the Adur Valley in 1976 found 28 pairs whereas 46 were found in the same area in 1978. Furthermore, since 1970 it has extended its breeding range away from the traditional wetland areas to include downland and conifer plantations such as found at Mile Oak and Winding Bottom.

Although small wintering flocks are regularly encountered often feeding on farmland or waste ground they seldom form large flocks which makes the flock of 100 seen on the Adur on 1st January 1982 remarkable. Occasionally small numbers are recorded in cold weather movements with 25 flying west at Brighton on 15th January 1966 being the largest such observed movement. During the winter they have been regularly recorded taking food from urban gardens.

The species in this area is mainly sedentary; one flying northward in from the sea at Worthing on 23rd March 1984 was presumably a migrant and the ringing of this species in the area has yielded three recoveries, two of which were co-incidentally found at Banbury in Oxfordshire in different winters.

BLACK-HEADED BUNTING (*E. melanocephala*):- An adult female shot at Brighton on 3rd November 1868 was the first British record.

CORN BUNTING (*E. calandra*):- A common resident species which is mainly associated with the downland but is regularly seen in the Adur Valley and on the coast. The national Common Bird Census annual index shows a fall in the population of this species and locally, although the data are incomplete, some records suggest the species may be declining. A count of 21 singing males in an area of downland between Cissbury and Chanctonbury in 1968 had reduced to 6 in 1971. In 1965 there were 18 singing males at Fulking and Bushy Bottom, while there were 22 males holding territory on downland between Fulking and Southwick in 1971. The densest population in the area is north of Portslade where 69 singing males were recorded in 1978, and in 1986 a total of 46 singing males were recorded in the area of which 35 were noted at Portslade.

Flocks gather in the early autumn through the winter, the largest was a flock of 550 at Upper Beeding in 1981 but smaller parties are regularly seen at Portslade, Southwick,

Findon, Ferring and at the Shoreham sanctuary. Corn Buntings, like other finches and buntings, roost communally and often in reed beds; a small roost can often be found near the airfield but the largest roost in the area was at Steyning where up to 600 roosted between 1975 and 1981.

The only record possibly relating to a migrant is of one flying in from the sea at Brighton marina on 5th May 1981.

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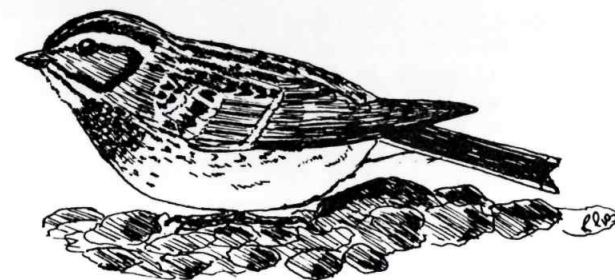
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BIBLIOGRAPHY AND REFERENCES

The standard reference books on the avifauna of Sussex have been particularly valuable in the preparation of this document.

1. Borrer, W. 1890. *The Birds of Sussex*. R. H. Porter. London.
2. Walpole-Bond, J. 1938. *A History of Sussex Birds*. Witherby. London.
3. des Forges, G. and Harber, D. D. 1963. *A Guide to the Birds of Sussex*. Edinburgh.
4. Shrubbs, M. 1979. *The Birds of Sussex, their Present Status*. Phillimore, Chichester.

The remaining sources of information for this review of the birds in the Brighton, Shoreham and Worthing area are from the following publications.

5. *The Sussex Bird Report* — published annually by the Sussex Ornithological Society since 1962. Prior to 1962 this report was produced by either G. des Forges and/or D. D. Harber.
6. *The Shoreham District Ornithological Society Report* — published annually since 1953 by the Shoreham District Ornithological Society.

These reports frequently contain papers describing a species or habitat in more detail. Specific reference to some of these articles has been constantly referred to in the text of this review and are listed below. The dates given are the year which the reports cover.

- Edgar, R. D. M. 1985. Some results of the study by ringing of warbler migration at Beachy Head from 1960 to 1985. *Sussex Bird Report* 38: 76–84.
- Edgar, R. D. M. 1986. A survey of breeding Sand Martins in Sussex, 1985–1986. *Sussex Bird Report* 39: 62–64.
- Grigg, C. A. 1960. Half a Century of Bird Watching in and around Steyning. *Shoreham O.S. Report* 8: 19–21.
- Ives, R. A. 1984. Raptor Survey. *Shoreham District O.S. Report* 32: 71–75.
- Hall, M. P. 1985. Wheatear Survey. *Shoreham District O.S. Report* 33: 86–90.
- Hughes, S. W. M. 1970. Surveying a breeding population of Swifts. *Sussex Bird Report* 23: 61–69.
- Hughes, S. W. M. 1979. Wintering Blackcaps in Sussex — a review of recent records. *Sussex Bird Report* 32: 77–84.
- Hughes, S. W. M. 1986. Changes in the breeding status and habitat of the Great Crested Grebe in Sussex. *Sussex Bird Report* 39: 69–80.
- Hughes, S. W. M. 1986. Feral Grey-lag Geese in Sussex. *Sussex Bird Report* 39: 91–96.
- Hughes, S. W. M. and Shrubbs, M. 1973. The breeding distribution and status of the Stonechat in Sussex, 1962–1973. *Sussex Bird Report* 26: 50–56.
- Hughes, S. W. M. and Watson, A. B. 1983. Censuses of the Mute Swan in Sussex in 1978 and 1983. *Sussex Bird Report* 36: 69–73.
- Hughes, S. W. M. and Watson, A. B. 1985. The distribution, status, and movements of Sussex Canada Geese. *Sussex Bird Report* 38: 85–94.
- James, P. 1980. Nesting of the Kittiwake in Sussex. *Sussex Bird Report* 33: 78–80.
- Leverson, R. 1985. Passage and wintering thrushes at a downland site. *Sussex Bird Report* 38: 67–75.

- Merritt, W. 1977. The Rook in Sussex. The breeding population and its distribution in 1975. *Sussex Bird Report* 30: 56–64.
- Merritt, W. 1978. The distribution and population of the Nightingale in Sussex 1974–77. *Sussex Bird Report* 31: 63–67.
- Mitchell, O. 1981. The breeding status and distribution of Snipe, Redshank and Yellow Wagtail in Sussex. *Sussex Bird Report* 34: 65–71.
- Newnham, J. A. 1976. Wader ringing on the Adur. *Shoreham District O.S. Report* 24: 33–35.
- Newnham, J. A. 1980. The population and distribution of the Nightingale in Sussex during 1980. *Sussex Bird Report* 33: 89–91.
- Newnham, J. A. 1983. Some aspects of the sea-bird movements observed from the Sussex Coast during the spring 1983. *Sussex Bird Report* 36: 60–63.
- Newnham, J. A. 1983. Gulls roosting in Winter in Sussex in 1983. *Sussex Bird Report* 36: 64–68.
- Newnham, J. A. 1984. Some aspects of the spring migration observed from the Sussex coast during 1984. *Sussex Bird Report* 37: 61–64.
- Newnham, J. A. 1984. A study of breeding Lapwings. *Shoreham District O.S. Report* 32: 76–78.
- Newnham, J. A. 1985. The origin and movements of Black-headed Gulls which have wintered in Sussex. *Sussex Bird Report* 38: 59–65.
- Newnham, J. A. 1986. Movements of Fulmars, Gannets and Auks observed from the Sussex coast, with particular reference to the spring of 1986. *Sussex Bird Report* 39: 81–87.
- Newnham, J. A. 1986. Survey of breeding Reed and Sedge Warblers. *Shoreham District O.S. Report* 34: 82–84.
- Parmenter, T. W. 1981. The Grasshopper Warbler in Sussex: the results of a breeding survey during 1977–1980. *Sussex Bird Report* 34: 79–82.
- Prater, A. J. 1984. Ringed Plovers breeding in Sussex. *Sussex Bird Report* 37: 72–743.
- Prater, A. J. 1984. Breeding Seabirds in Sussex. *Sussex Bird Report* 37: 65–71.
- Prater, A. J. 1985. The decline to extinction of the Stone Curlew in Sussex. *Sussex Bird Report* 38: 65–66.
- Porter, R. F. 1977. The breeding status of the Black Redstart in Sussex. *Sussex Bird Report* 30: 65.
- Sandison, R. J. 1980. Barn Owls in Sussex — the last twelve years. *Sussex Bird Report* 33: 70–78.
- Sennitt, M. V. 1980. Sample survey of the breeding Rook population in Sussex 1980. *Sussex Bird Report* 33: 80–84.
- Shrubbs, M. 1967. The status and distribution of Snipe, Redshank and Yellow Wagtail as breeding birds in Sussex. *Sussex Bird Report* 20: 53–60.
- Shrubbs, M. 1978. Blyth's Pipit; a bird new to Britain and Sussex. *Sussex Bird Report* 31: 55.
- Shrubbs, M. 1983. The Sparrowhawk in Sussex. *Sussex Bird Report* 36: 74–82.
- Shrubbs, M. 1984. Breeding habitats of the Lapwing in Sussex. *Sussex Bird Report* 37: 75–80.
- Smith, D. I. 1985. Hard weather movements in early 1985. *Shoreham District O.S. Report* 33: 62–69.
- Watson, J. 1986. A survey of wintering Cormorants in Sussex, 1985/86. *Sussex Bird Report* 39: 65–68.
- Wilson, P. J. 1973. A survey of the Cirl Bunting in Sussex. *Sussex Bird Report* 26: 57–60.

- Wright, C. M. V. 1977. Some observations on Willow Warbler passage through Shoreham. Shoreham O.S. Report 25: 30-35.
- Wright, C. M. V. 1978. Goldfinches at the sanctuary. Shoreham O.S. Report 26: 37-41.

Other sources of reference have included:-

- Bowes, A., Lack, P. C. and Fletcher, M. R. 1984. Wintering Gulls in Britain, January 1983. Bird Study 31: 161-170.
- Brown, L. British Birds of Prey. Collins. London.
- Cramp, S. 1985. The Birds of the Western Palearctic, Vol. 4. Oxford University Press.
- Cramp, S. and Simmons, K. E. L. 1977. The Birds of the Western Palearctic, Vol. 1. Oxford University Press.
- Cramp, S. and Simmons, K. E. L. 1980. The Birds of the Western Palearctic, Vol. 2. Oxford University Press.
- Cramp, S. and Simmons, K. E. L. 1983. The Birds of the Western Palearctic, Vol. 3. Oxford University Press.
- Hudson, R. 1973. Early and late dates for Summer migrants. British Trust for Ornithology, Tring.
- John, A. W. G. and Roskell. 1985. Jay movements in autumn 1983. British Birds 78: 611-637.
- Knox, A. E. 1849. Ornithological rambles in Sussex. John van Voorst, London.
- Lack, P. 1986. The Atlas of Wintering Birds in Britain and Ireland. T. and A. D. Poyser, Berkhamsted.
- Monaghan, P. and Coulson, J. C. 1977. Status of large gulls nesting on buildings. Bird Study 24: 89-104.
- Parslow, J. L. F. 1973. Breeding Birds of Britain and Ireland: a historical survey. T. and A. D. Poyser, Berkhamsted.
- Perrins, C. M. 1966. The effect of beech crops on Great Tit populations and movements. British Birds 59: 419-432.
- Prestt, I. 1965. An enquiry into the recent breeding status of some smaller birds of prey and crows in Britain. Bird Study 12: 196-221.
- Potts, G. R. 1970. Recent changes in the farmland fauna with special reference to the decline of the Grey Partridge. Bird Study 17: 145-166.
- Prater, A. J. 1981. Estuary Birds of Britain and Ireland. Poyser. Calton.
- Riddiford, N. and Findley, P. 1981. Seasonal movements of summer migrants. British Trust for Ornithology.
- Sharrock, J. T. R. 1976. The Atlas of Breeding Birds in Britain and Ireland. T. and A. D. Poyser, Berkhamsted.
- Sharrock, J. T. R. and E. M. 1976. Rare birds in Britain and Ireland. Poyser.
- Sitters, H. P. 1982. The decline of the Cirl Bunting in Britain, 1968-80. British Birds 75: 105-108.

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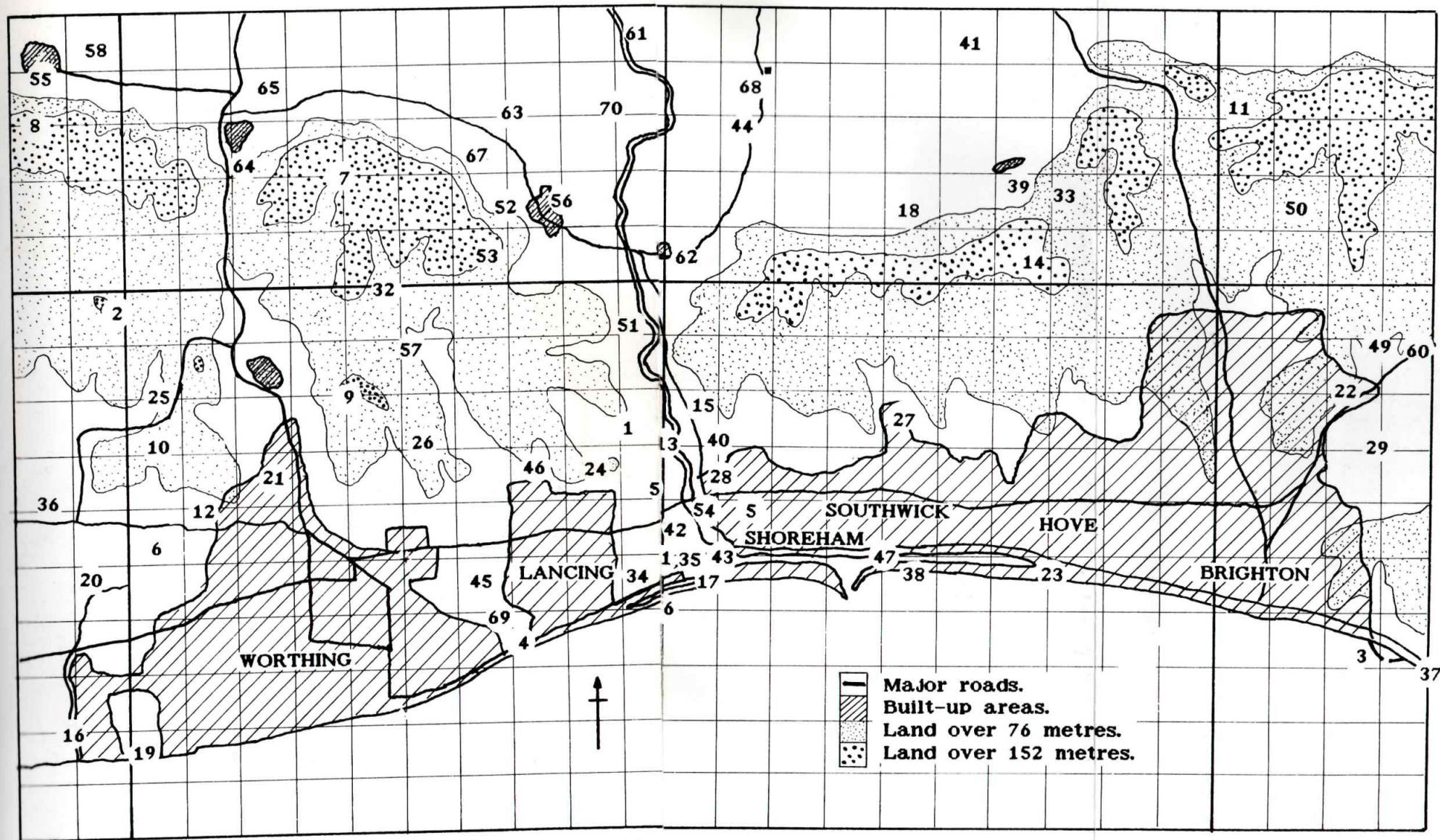
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KEY TO THE MAP OF THE SHOREHAM AND DISTRICT ORNITHOLOGICAL SOCIETY RECORDING AREA.

- 1..Applesham Farm.
- 2..Blackpatch Hill.
- 3..Brighton marina.
- 4..Brooklands.
- 5..Buckingham Park.
- 6..Castle Goring.
- 7..Chanctonbury.
- 8..Chantry Hill.
- 9..Cissbury Ring.
- 10..Clapham Woods.
- 11..Clayton Hill.
- 12..Cote Street.
- 13..Cuckoo's Corner.
- 14..Devil's Dyke.
- 15..Erringham Farm.
- 16..Ferring Rife.
- 17..Flood Arch.
- 18..Fulking.
- 19..Goring Gap.
- 20..Highdown.
- 21..High Salvington.
- 22..Hollingbury Woods.
- 23..Hove Lagoon.
- 24..Lancing Clump.
- 25..Long Furlong.
- 26..Lychpole Hill.
- 27..Mile Oak.
- 28..Mill Hill.
- 29..Moulsecoomb
- 31..New Salts Farm.
- 32..No Man's Land.
- 33..Nyetimber.
- 34..Old Salts Farm.
- 35..Shoreham Refuse Dump.
- 36..Patching Pond.
- 37..Portobello.
- 38..Portslade Power Station.
- 39..Poynings.
- 40..Shoreham Sanctuary.
- 41..Shaves Wood.
- 42..Shoreham Airport.
- 43..Shoreham Recreation grd.
- 44..Small Dole.
- 45..Sompting Brooks.
- 46..Sompting Refuse Dump.
- 47..Southwick Canal.
- 48..Spithandle Lane.
- 49..Stanmer Wood.
- 50..Standean.
- 51..St Botolph's.
- 52..Steyning Mill Pond.
- 53..Steyning Round Hill.
- 54..St Nicholas Church.
- 55..Storrington Mill Pond.
- 56..Striven's reed bed./Mumbles.
- 57..Stump Bottom.
- 58..Sullington Warren.
- 59..Sussex Pad.
- 60..Sussex University.
- 61..Upper Adur Levels.
- 62..Upper Beeding.
- 63..Wappingthorne.
- 64..Washington Bostal.
- 65..Washington Sand Pits.
- 66..Widewater.
- 67..Wiston Pond.
- 68..Woods Mill.
- 69..Worthing Refuse Dump.
- 70..Wyckham Farm.



Map of the Shoreham Dist Ornithological Society's recording area
showing thites mentioned in the text