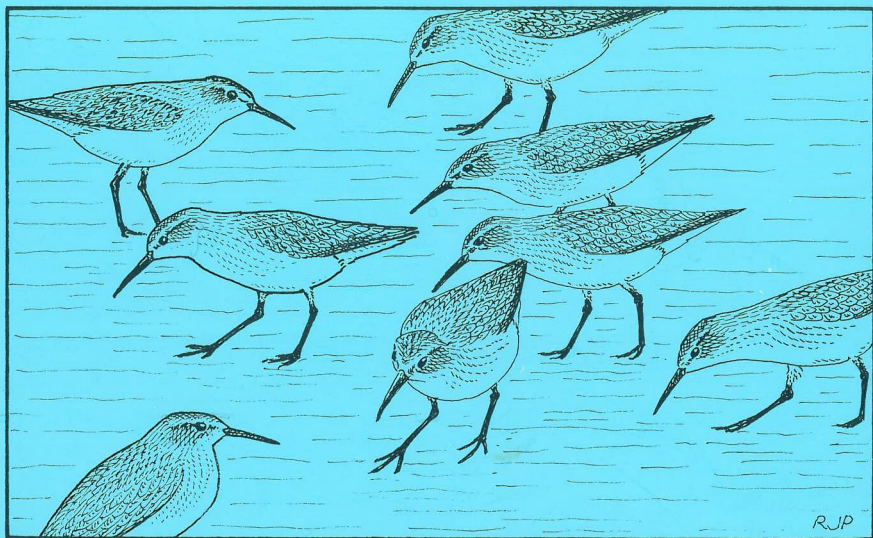


BRISTOL ORNITHOLOGY

THE JOURNAL OF THE BRISTOL ORNITHOLOGICAL CLUB



NUMBER 21, 1992

The Birds of Clevedon Bay

Decline of the Turtle Dove

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Preface

After 20 issues in a basically unchanged format, we decided that *Bristol Ornithology's* 'coming-of-age' should be marked with a new look, hence the redesigned layout and typography in this 21st issue. Hopefully, it will allow rather more flexibility of presentation, and bring the journal more into line with the other publications jostling for space on our shelves.

The bulk of this issue is devoted to another in our series of papers on 'local patches', this time Harvey Rose's 10-year study of the coastal strip between Clevedon and the River Yeo estuary. The initials 'CI-Y', the abbreviation for this area, have appeared regularly in the monthly reports in *Bird News* for many years now, and it is valuable to have the records collected together and put into context in one place. Accounts for other areas covered by Club members would, as ever, be welcome for publication in future issues.

The paper by Derek Goodwin in issue 20 on the national decline in the numbers of Turtle Doves prompted Will Duckworth to provide a short paper on this species' fortunes in the Saltford area, to expand on the local aspect in one part of Avon. Unhappily, there is no evidence that the decline has in any way been halted. A short Notes section, plus the Secretary's report completes the issue.

Finally, we would like to acknowledge the generous loan of DTP facilities by local publisher, Multilingual Matters Ltd, which has allowed us to keep the costs of production of what is something of a 'bumper edition' within the budgetary constraints set by our ever-vigilant Treasurer.

Ken Hall and Robin Prytherch, *Bristol Ornithology* Editorial Committee

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The Birds of Clevedon Bay

H E Rose

It was an hour before sunset and there was an orange glow in the west reflected in the receding waters of the Severn Estuary. I approached Blackstone Rocks—they were wet and the seaweed glistened in the late afternoon light. Five Turnstone and a Redshank were disturbed by my presence and flew off up river. From the highest part of the rocks there was a noise, a rustling or twittering like an audience expectant before a performance. Suddenly they were off! Thousands of Dunlin took flight and headed into the sunset towards the Welsh coast, flying steadily low over the water and straight for the now exposed mudflats of Cardiff Bay and beyond. In under a minute they were gone and all was quiet except for a few Black-headed Gulls calling near the Kenn.....*

Introduction

This paper concerns the birdlife of Clevedon Bay, based on my studies primarily undertaken during the nineteen-eighties. I have visited the area along the sea wall south of Clevedon many times over the past fifteen years, these visits having become part of my life. They have provided many hours of enjoyment, with some great experiences such as the one described above, as well as a few mishaps. One such resulted in a stay in the Bristol Royal Infirmary but it did not stop me returning to the sea wall the following Sunday! Two other visits were especially memorable. The first was in February 1985, the only time I ever gave up before reaching the River Yeo. The tide was out, there was a leaden sky and a bitter north east wind, the mud flats were frozen and hardly a bird was in sight—the Estuary looked like an arctic wasteland. The second, on 19 December 1981, was quite different. Although it was again very cold, there were record numbers of birds at the site, as if Chew Valley Lake had come to Clevedon Bay. Over a thousand wildfowl of eleven species were on the Estuary (Blake's Pools did not exist then), the Lapwing count was a remarkable 2500+, and nearly 10,000 gulls were on two fields near the Yeo. This was a few days after a massive high tide that caused flooding as far as Kingston Seymour—at its height the water was nearly two metres above the top of the old sea wall as could be seen later by the line of debris in the hedgerow bushes. It was mainly this flood that led to the new sea wall being built.

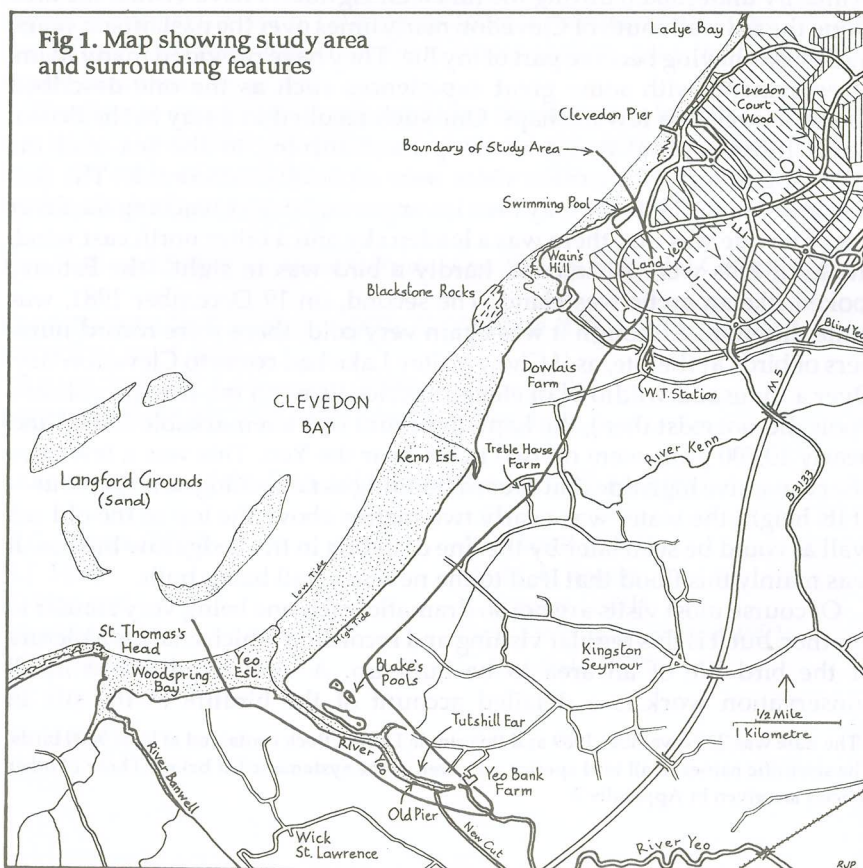
Of course most visits are not so dramatic, each one being very similar to another, but it is this regular visiting and recording which enables a picture of the bird life of an area to be built up. A vital requirement in all conservation work is a detailed account of the birdlife of the site in

* The date was 23 November 1989 and this single Dunlin flock contained at least 9000 birds. The scientific names of all bird species are given in the systematic list below. Those of other species are given in Appendix 3.

question, and the main purpose of this paper is to provide this for Clevedon Bay, and hence, hopefully, aid its preservation in the decades to come.

The Site

Most of the records mentioned in the systematic list below refer to the 'study site', often called Clevedon Bay. In local bird reports and in the Bristol Ornithological Club's *Bird News* it is also referred to as 'Clevedon to R. Yeo', or 'Cl-Y' for short. The site consists of the mudflats and adjacent Severn Estuary south to Woodspring Bay; the River Yeo from its mouth to the small dam near Yeo Bank Farm; the sea wall area and the coastal fields immediately behind it; and Wain's Hill—a region roughly six kilometres northeast to southwest and two kilometres wide with an extension up the Yeo (see Figure 1). Most of the site is close to sea level and would be regularly flooded were it not for the sea wall. Remains of old sea defences, possibly going back to Roman times, can be seen at low water—puny compared to the present massive earthworks!



First, on the seaward side of the sea wall is the water of the Severn Estuary (throughout, this will be referred to as 'the Estuary' to distinguish it from the minor estuaries in the region). The water is turbid due to the amount of suspended silt and debris always present. Secondly there are extensive mudflats mostly covered at high tide and extending about half a kilometre from the sea wall at the lowest tides. They have an underlay of hard clay and a covering of soft mud of varying thickness which is extremely rich in invertebrate life and so important as a feeding area for the wading birds and some ducks, and incidentally for some fish when the tide is in. The flats are mainly free of rooted vegetation except close to the sea wall, but here there are grasses, spartina (much less than in former times), with some sea aster, sea-lavender, scurvy-grass (mostly the long leafed variety), and glasswort close to the bare mud. The mud slopes evenly downwards towards the water's edge except at the northern end where there is a large rock outcrop called Blackstone Rocks. This outcrop is fairly uniform and only a metre or so higher than the surrounding flats. It is mainly covered by seaweed and is under water at most high tides. Nevertheless it is a regular roost site for waders and other birds during part of the tide cycle.

The new sea wall was constructed during the nineteen-eighties, taking about six years to complete with further improvements still continuing. It consists of a clay bank of shallow slope sometimes extending as much as 100 metres from the seaward to landward side and is high enough to prevent flooding except in the most extreme conditions, even (but only just) preventing flooding during the very high tides in January 1990. There are plans to increase the height of the wall again if global warming and the resulting higher sea levels require this. On the seaward side there are boulder and concrete reinforcements to prevent high tide erosion, incidentally providing a coastal path. In contrast to the previous sea wall which was more 'natural', the new one is very uniform, dominated by closely grazed grass and without trees or bushes, but nevertheless it contains some wet shingle areas and good roost sites for the waders.

Behind the sea wall the land is a flat alluvial plain almost wholly given over to fields for grazing stock, the fields being surrounded by substantial hedges, mainly of blackthorn and hawthorn which are allowed to grow naturally and form an important ornithological habitat feature of the site. Except for one field no ploughing has occurred for many years. Ten years ago these coastal fields were quite often wet with standing pools in some places, and the waders regularly used them for roosting at high tide. The new sea wall and extra field drainage has changed this, the fields now remaining dry for most of the time and the Dunlin especially only use them occasionally for roosting.

To provide clay for the new sea wall three pools, called Blake's Pools, were constructed near the mouth of the River Yeo. The outer (and largest) one, completed and filled with rhine water in late 1983, is about half a

kilometre long, quite narrow and up to five metres deep. It has a useful island at one end used mainly by Mute Swans. The two inner pools, completed in 1988, are much shallower and also both have artificially constructed islands. Up to the present these pools have not been very productive birdwise, but this should change once they become more naturalised. They look ideal for waders.

Finally, at the northern end of the study site, is Wain's Hill. This is quite different in character, being a large limestone outcrop a kilometre long which rises to 35 metres above the high tide mark, with a vertical cliff edge facing northwest. It has some tree cover, extensive scrub and rough grass, and a few buildings, most conspicuous being an ancient church and burial ground. Many of the passerine records and most of the migration watch data come from this part of the study site.

In 1989 most of Clevedon Bay was declared a Site of Special Scientific Interest along with almost all of the remaining coastal parts of the Severn Estuary. Blake's Pools form an Avon Wildlife Trust reserve, where recently two bird hides overlooking the inner and outer pools have been erected.

In response to the question 'Are there any particular conservation problems in the Clevedon Bay area?', one can answer both Yes and No. No, if the area is left much as it is: farms behind the sea wall; the new sea wall itself, not really an ecological improvement on the old one but clearly necessary for the safety of life and property; and the extensive mudflats. Yes, if there is any major change in land use, for example, more houses, marinas etc., and I fervently hope that this can be avoided. There is also the possibility of a Severn Barrage. It is difficult to foresee exactly how this would affect the birds—there would be gains and losses—but I am sure that it would encourage further developments of all kinds with many more people visiting the area, and this would be a disaster for the birds. Assuming that this does not happen, are there any minor ecological improvements that could be considered? The farms are working farms and one cannot expect the farmers to destroy their livelihoods for ecological considerations, but reducing the amount of drainage in the coastal fields would help the waders in both the summer and the winter. Hötter (1991: Chapter 4), provides detailed recommendations on the management of grassland for waders. Secondly the site has absorbed more than its fair share of refuse tipping and it is to be hoped that no more tips will be opened. Thirdly there is very little rough ungrazed grassland, and an increase would be welcome as would more scrub and trees, especially close to the sea wall. Finally I personally would like to see a reduction in the amount of wildfowl shooting, as I am convinced that many more ducks would be seen in the area if this happened.

Methods

Between 1976 and the end of 1990, I have visited Clevedon Bay on more than 850 occasions. Most of my visits begin at dawn or soon after, when

the light is better, there is usually less disturbance, and the birds are generally more viewable. My usual route begins at the southern edge of Wain's Hill, and I then walk (or sometimes cycle) along the sea wall to the mouth of the Yeo and up this river to the dam at Yeo Bank Farm or slightly further. On the way I walk out and over Blackstone Rocks (tide allowing), cover the salt marshes near both the Kenn and Yeo Estuaries and the coastal fields, and look over all three of Blake's Pools. I then retrace this route back to Wain's Hill, a total distance of 13 kilometres. I do not normally walk further than one or two fields inland and I hardly ever visit Woodspring Bay on the far side of the Yeo, although a good deal of its bird life can be viewed with a telescope from the mouth of the Yeo. Other observers usually take different and shorter routes.

For the regularly occurring species, and especially the commoner waders, the records given in the systematic list below refer to the ten-year period June 1980 to June 1990. This is called throughout 'the study period'. In most cases records before this period are not given unless they provide clear evidence of a major change over the decades, as there has been for example with some duck species. For more unusual species and vagrants all known records up to the end of 1990 are given. I would welcome any further information, both historical and in correction of errors. Inevitably not every record given has been vetted and/or accepted by the relevant county recorder's committees, but I am sure in my own mind that those quoted are valid. However, I have included some 'probable' and unconfirmed records in Appendix 1, as the Avon Bird Report does not publish these as a matter of policy. Appendix 2 contains a list of records from the fringes of the site; some of the birds in question may have occurred in the study site but there is no direct evidence either way.

For recording purposes I have divided the year into three 'seasons'. The first—autumn—runs from mid June to the end of October and is the period of autumn migration and post breeding dispersal. The second—winter—runs from the beginning of November to mid March. This is the period when the wintering birds are present although most will have left before its end, and this is the time when the internationally important Dunlin flocks occur. Finally the third season—spring—runs from mid March to mid June and can often be the most interesting ornithologically. For many wader species, spring passage provides the only opportunity of seeing them in breeding plumage. Also at this time, of course, the resident birds are nesting. These 'seasons' are only a rough guide, as occurrences can be early or late in a particular year and also there can be some overlap; a few spring migrants heading to the far north (for instance, some Greenland Ringed Plover) may still be passing through after the first autumn migrants, probably failed breeders, have been seen on their return journey.

Some data are given in the form of bar diagrams. These diagrams have been produced to avoid the use of extensive numerical tables, and also they give a clearer visual picture of the population movements through the year.

For Shelduck and the waders the year is divided into 24 'fortnights': beginning with the 'autumn' season as described above, the first fortnight starts on 16 June and runs to the end of that month, and the second runs from the 1st to the 15th of the next month, and so on. For each fortnight a shaded bar gives the average of the maximum counts for that fortnight over the ten-year study period, and an unshaded bar gives the maximum count over the study period for the corresponding fortnight. Note that in general the smaller the difference between the shaded and unshaded bars the more regular the species is in the study site (for instance compare Redshank with Knot). These diagrams obscure any year-on-year variations, but for Shelduck and the nine commonest waders this variation is illustrated separately in tables which give the average (mean value) count recorded outside the breeding season for each of the study years. Similar bar diagrams are given for some other commonly occurring species, but calendar months are used for these instead of fortnights and they run from the July of one year to the June of the next.

The Birds

A total of 243 species have been recorded up to the end of 1990, made up of seabirds and allies 37, wildfowl 32, diurnal and nocturnal birds of prey 18, waders 38, other non-passerines (including herons) 32, and passerines 86. The list includes 216 indigenous or migrant species, six exotics (Lesser Flamingo, Black Swan, Chiloe Wigeon, Ferruginous-type *aythya* hybrid, Ring-necked Parakeet, and Cockatiel), six 'probables' (Red-throated Diver, Bittern, Black Stork, Montagu's Harrier, Dowitcher sp., and Terek Sandpiper), eight species with satisfactory records but no sightings in the last half century (Spoonbill, Rough-legged Buzzard, Corncrake, Long-tailed Skua, Wryneck, Nightingale, Nuthatch, and Black-headed Bunting), and seven species which have occurred on the edge of the site but not definitely within it (Red Kite, Little Auk, Nightjar, Waxwing, Marsh Warbler, Rose-coloured Starling, and Crossbill).

Seabirds and Allies

Although 37 species have been recorded, Clevedon Bay is not a 'good' seabird site. The Estuary here is 14 kilometres wide (Blackstone Rocks to Peterstone Wentlooge) and most pelagic birds seem to keep too far offshore to be seen or identified with certainty, although it can be assumed that most of the seabirds recorded off Severnside (see Rabbitts, 1971 and Lancaster, 1990) must have passed by the study site. Also birds swept up the Estuary by storms originating in the south-west probably swing well out towards the Welsh coast as they pass Sand Point. In fact many of the unusual sightings are of birds heading downriver using the tide line to lead them back to the open sea. Prolonged sea watches in stormy weather from Wain's Hill would surely produce more records.

The only species which occurs regularly in large numbers is the Black-headed Gull and outside the breeding season several thousand can occur. Other species appearing regularly in reasonable numbers are Little Grebe, Cormorant, and Common, Lesser Black-backed and Herring Gulls, although on occasions good numbers of Manx Shearwater, Kittiwake, and Common and Arctic Terns occur. On the other hand it is surprising how scarce some seabird groups are, for instance divers, skuas and auks. The water of the Estuary is always turbid and this makes feeding by diving difficult although some species, such as the Cormorant, which is adapted to these conditions, do manage.

Wildfowl

As with the previous group a good number of species (32) have been seen but many occur only in very small numbers or as vagrants, the turbidity of the water presumably playing a part in this. Generally between one and four hundred ducks of all types are present at any one time, often near the mouth of the Yeo, where, unfortunately, wildfowl shooting is practised. As far as is known only a few ducks are shot but the activity scares many away, and it is likely that much higher numbers would be seen if this practice stopped, as has occurred when wildfowling has been curtailed in bad weather. The wildfowlers say that they keep the shooting under control and that without their presence a considerable amount of indiscriminate killing would take place. This is true but how much better it would be if all guns were put away!

The Shelduck is the commonest and most important of the wildfowl occurring in the study site: usually 100 or more are present and breeding takes place. Flocks of dabbling ducks are present at all times but, at least during the study period, Mallard have been relatively scarce (the largest count was 90). In the last year or so many ducks have roosted regularly several hundred metres offshore, out of range of the wildfowlers' guns. Possibly as a consequence, more ducks have been seen very recently, but numbers have been swelled by the release of feral birds, mainly Mallard, on Blake's Pools and near the mouth of the Yeo.

Counts for many duck species were much higher in the early nineteen-fifties than during the study period, but this was before Chew Valley Lake existed. On the other hand the construction of Blake's Pools has benefited a number of species formerly very uncommon, for instance Mute Swan and diving ducks such as Tufted Duck and Pochard.

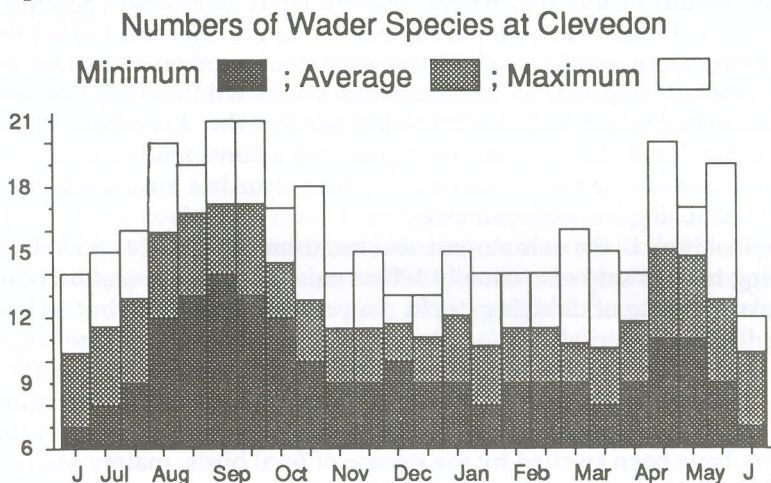
Diurnal and Nocturnal Birds of Prey

Thirteen diurnal raptor and five owl species have been recorded. Virtually all the land behind the sea wall is grazed and so there is very little rough pasture to harbour voles and other small rodents which form a major food item for birds of prey. Nevertheless reasonable numbers of Sparrow-

hawks, Kestrels, Merlins, Little Owls, and Short-eared Owls have been seen although most individuals do not stay for long periods. Only Sparrowhawk and Little Owl breed. There has also been a good series of records of Hen Harrier over the whole period and of Long-eared Owl in the last few years, but on the down side Barn Owl is now virtually extinct in the area.

Waders

This is by far the most important bird order occurring in the study site and the main reason for its ornithological importance and its status as an SSSI. A total of 38 species (two of which are only probables) have been recorded, at least ten are present regularly in large numbers and four breed. The bar diagram below gives, for each fortnightly period, the minimum, average and maximum number of wader species which occurred during the study period. From this it can be seen that for most of the year roughly ten species are present and that this increases considerably during migration periods.



A general measure of the productivity of estuaries for wading birds is given by dividing the area (in hectares) of the sand and mud flats at low tide into the maximum number of wading birds recorded at the site (see Clark, 1990). The average for British estuaries, very productive by world standards, is about one bird per hectare but the average for the Severn as a whole is well below this, between 0.1 and 0.2 birds per hectare. The figure for Clevedon Bay is close to the national average, i.e. at least five times the Severn Estuary figure, giving an indication of the importance of the site. On the other hand this is partly offset by the fact that the distance between the high tide and the low tide marks is much larger at many other sites in the Severn Estuary than it is in Clevedon Bay, by a factor of ten in parts of Bridgwater Bay for example.

The major species is the Dunlin and the study site is of international importance for this species, the quality of the soft mud with its rich crop of invertebrate food being critical. For most of the study period it has been in good condition and improving, and Dunlin counts have increased as a result. In the last three years of the period counts over 10,000 were relatively common but recently there has been a catastrophic collapse—only 80 Dunlin were present for the last count in 1990 (on 30 December)! The cause appears to be the severe storms of early 1990 which had the effect of removing most of the soft mud from the flats. Why the 1990 storms had this effect and earlier ones did not is unknown. On the other hand over many decades this may be a regular occurrence, but accurate long term counts are not available to test this hypothesis.

The only other wader which occurs in thousands is the Lapwing and during the study period it has suffered a disastrous decline; average counts have dropped fourfold and breeding has virtually ceased. This decline has been repeated over much of southern Britain but appears to be worse in Clevedon Bay. Golden Plover and Snipe have declined similarly. On the other hand Curlew and Redshank numbers have held up well with about one hundred of each present outside the breeding season, and there has been a good showing at least for part of the year for Ringed Plover, Grey Plover, Bar-tailed Godwit, Greenshank, and Green Sandpiper. Oystercatcher, Ringed Plover, Lapwing and Redshank breed but in small numbers. For some species the new sea wall has been beneficial by providing some shingle areas and good roost sites. The inner Blake's Pools were designed with wading birds in mind but up to the present time they have not been very productive.

Other Non-Passerines

This group contains 32 assorted species, none of which are important in Clevedon Bay. Grey Herons are commonly seen feeding near water, with parties of ten or more occurring. Some partridge coveys have been seen lately but these are mainly of released birds. The Woodpigeon is common on the farmland and Stock and Collared Doves occur in good numbers on occasions.

Passerines

A good range of song birds occur in the study site and some notable flocks are seen at times mainly during migration. Many observers, including the author, tend to concentrate on the non-passerine birds and so information on a number of the passerine families is very sketchy, this being particularly true for those that occur mainly on the farmland. Nevertheless 86 species have been seen and some detail is available on most of them. Skylarks are present all year in good numbers and Clevedon Bay is one of the main areas in Avon for Rock Pipit, Yellow Wagtail and Reed

Warbler, all of which species breed. Wheatears are seen only on passage but in good numbers. Also Fieldfares, Redwings, Starlings, and some of the corvids occur in very large numbers at times. Reasonable numbers of finches are present all year, the Linnet being the commonest; also huge flocks of some common finches (mainly Chaffinch) are seen on migration in October. On the other hand Stonechats have been notably scarce during the study period although the situation has improved recently. It may be due to a lack of observations but some species appear to be surprisingly uncommon in the study site, for instance Dunnock, Song Thrush, Tree Sparrow and Redpoll; further observations on the farmland behind the sea wall might well show that these species are not as scarce as they appear.

This paper is the first to discuss the birds of Clevedon Bay in detail but in 1868 an unknown author produced a 'List of the Birds of Clevedon and the Neighbourhood' (Anon., 1868). It appears in a visitors' guide to the town which contains some interesting historical details, and lists of plants, invertebrates, etc. The author of this 1868 list had clearly studied the bird life carefully for there is a remarkably good correspondence between his/her list and the one given here. To emphasise this, the date [1868] has been added to the entries below for all those species which appear in the earlier list.

Only very sketchy information is available on the non-bird wildlife, but there are some lists in the 1868 Clevedon Guide (Anon. 1868). Amongst the mammals noted during the study period the Hare was the most often seen, and unfortunately some Hare coursing did take place. Fox, Badger, and several small rodents occurred regularly. In autumn 1982 a dead Common Dolphin and a dead Lesser Rorqual whale (about 5 metres in length) were seen on the tide line.

The systematic list is given below. Apart from the author's own records, the main sources have been the bird reports for the Bristol District, Avon and Somerset Counties from 1936 to the present, *Bird News* and *Bristol Ornithology* published by the Bristol Ornithological Club, Davis's 1947 paper (Davis, 1948), and Palmer & Ballance (1968). Many observers have been involved in providing supplementary details but I would like to thank particularly K.L. Fox, K.J. Hall, D. Horlick, R.J. Prytherch, S.N. Sanins, T.B. Silcocks, B. Thompson and K.E. Vinicombe as well as the many unnamed observers whose records have appeared in the publications mentioned above. Finally, I would like to thank Antony Merritt, Robin Prytherch and Brian Slade for providing the illustrations.

The Systematic List

The list below contains accounts on all species recorded in the study site. For the commoner species the accounts cover the period of the main study June 1980 to June 1990. If clear evidence is available from earlier decades, especially if there has been a change of status, then this is also presented. For the unusual species all records up to the end of 1990 are discussed. Also every species given in the 1868 paper is listed here. Those species for which the written records are insufficient for full acceptance, or which have occurred on the fringes of the study site but not definitely within it, are listed in the appendices. The sequence follows that of Professor K. H. Voous (1977, *List of Recent Holarctic Bird Species*.)

GREAT NORTHERN DIVER *Gavia immer*. There is only one record for Clevedon Bay, a single bird in full breeding plumage seen off the Kenn Estuary on 1 Nov. 89.

DIVER SP. *Gavia* sp. An oiled bird, probably a Red-throated, spent most of December 1977 in the swimming pool near Wain's Hill, and the record of this species off Sand Point on 31st could well refer to this individual.

LITTLE GREBE *Tachybaptus ruficollis*. Before the construction of Blake's Pools this species was recorded only once or twice a year in the rhines behind the old sea wall or on the Blind Yeo, usually single birds between October and April. Since 1985 all records have come from Blake's Pools with usually up to three birds September to March and one or two June to August. Some higher counts have been noted: four on 23 Oct. 83, four in March 86, six in September 89 rising to twelve by January 90 with nine still present in early March. There is no firm evidence of breeding but this is a possibility in the future. [1868]

GREAT CRESTED GREBE *Podiceps cristatus*. This species is an irregular visitor to the main Estuary with ten records during the study period, mostly off-course passage birds or birds displaced from the major reservoirs by freezing conditions. There have been no sightings at Blake's Pools. The records are: three on 23 Nov. 83, otherwise single birds on 17 Jan. 82, 29 Apr. & 11 Nov. 84, 27 Jan. 85, 23 Feb. & 2 Mar. 86, 18 Jan & 27 Sept. 87, 1 Dec. 89, with two on 28 Sept. 90.

SLAVONIAN GREBE *Podiceps auritus*. One record: a bird in breeding plumage was seen at the mouth of the Yeo on 22 Apr. 88.

BLACK-NECKED GREBE *Podiceps nigricollis*. A single bird was noted on Blake's Pool on 26 Sept. 85 and more records are expected from this site in the future. The only other record is of one in intermediate plumage off Blackstone Rocks at dawn on 28 Apr. 90.

FULMAR *Fulmarus glacialis*. There have been only five records of this species during the study period from Clevedon Bay although more have

been seen from Sand Point. The records are: three birds on 3 May 81, otherwise single birds on 14 Aug. & 11 Oct. 81, 5 Oct. 83 and 1 Sept. 85. [1868]

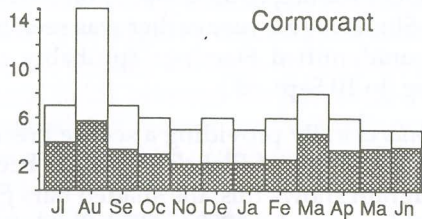
MANX SHEARWATER *Puffinus puffinus*. This species is a regular summer visitor to the Severn Estuary but it is seen only occasionally in the study area. Quite large flocks have been reported usually but not always in stormy conditions. In June 1988 when the sea was calm and covered by a thick mist a large flock appeared briefly out of the mist over the Kenn Estuary, probably disoriented by the conditions. The records for the study period are: 1980, one on 14 Sept.; 1983, 16 on 4 Sept., one on 5 Sept., one released having been found exhausted on a Midlands reservoir on 14 Sept., and one on 9 Oct.; 1984, one on 9 Sept.; 1985, 14 on 9 June; 1986, 23 on 7 Aug.; 1987, three on 7 June; 1988, 110 on 29 May, 80 on 30 June (the flock mentioned above), and 55 on 29 July; and 1990, a dead bird on the very early date of 15 Feb., 16 on 22 June, 31 on 1 July, eight on 8 July, and single birds on 19 & 21 September.

STORM PETREL *Hydrobates pelagicus*. The records are: one found dead in December 1929 and one moving down river on 9 Sept. 84. As over 40 of these petrels have been seen further up the Estuary during the nineteen-eighties (Lancastle, 1990) more birds must have passed by the study site either unseen or well offshore.

LEACH'S PETREL *Oceanodroma leucorhoa*. This species has been recorded only four times in Clevedon Bay: before 1868, during the major 'wreck' in October 1952, a single bird on 3 Oct. 66 (identified first as a Storm Petrel), and on 29 Oct. 89 when three were seen moving down the Estuary close inshore in gale force conditions. [1868]

GANNET *Sula bassana*. Perhaps because of its size and mode of flight this species has been recorded more often than the other pelagic seabirds. There are at least six pre-1980 records and those for the study period are: 1980, one on 7 Sept.; 1982, one on 28 June; 1983, singles on 4 and 5 Sept.; 1986, one on 6 May; 1987, one dead on the tide line on 13 Dec.; and 1988, five on 28 Sept. with one dead on 2 October.

CORMORANT *Phalacrocorax carbo*. Although generally very scarce in the nineteenth century this species is now regular in small numbers, the bar diagram giving the averages and maxima of the monthly counts for the study period. The Cormorant is the only diving species that feeds regularly in the waters of the Severn Estuary and Clevedon Bay. The birds are also seen roosting or drying their wings after feeding around the mouth of the Yeo and on the old jetty two kilometres up the Yeo. Many sightings are of birds in flight over the Yeo moving between the main Avon reservoirs and the outer Estuary and Steep Holm. On a few occasions larger flocks have been seen flying north east up the Estuary, these including ten on 29 Aug. 85, 15 on 27 Aug. 87, and ten on 24 Jan. & 31 Jan. 88. [1868]

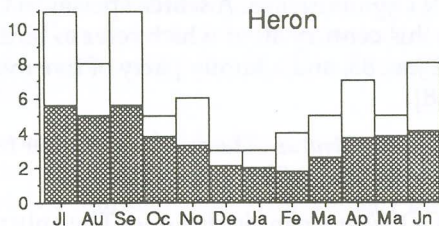


SHAG *Phalacrocorax aristotelis*. This species is an irregular winter visitor. Two seen on the Blind Yeo between 6 Dec. 77 and 12 Jan. 78 were in a poor condition but survived; otherwise single birds have been noted during the study period on 30 Oct. 80, 21 Nov. 82, 6 Jan. & 20 Nov. 83, and 22 Jan. 84.

BITTERN *Botaurus stellaris*. D'Urban and Mathew (1892) described this species as 'apparently common in the Weston-super-Mare area in the 1860's', and it appears on the 1868 list. There are no definite 20th century records, but one was reported without confirmatory details in a rhine near the Yeo in mid November 1990. [1868]

LITTLE EGRET *Egretta garzetta*. As part of a national influx a single bird was present from 14 to 22 Aug. 89. It was seen feeding on the mud at low tide and it roosted inland at high tide.

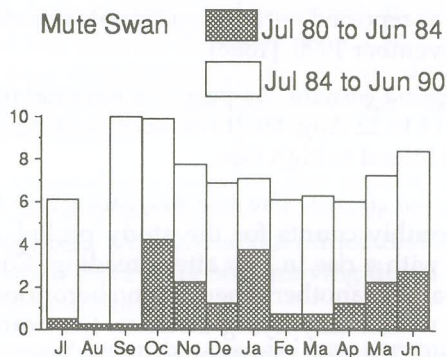
GREY HERON *Ardea cinerea*. The bar diagram gives the averages and maxima of the monthly counts for the study period, and shows fairly uniform numbers with a rise in July after breeding. Counts did not vary much from one year and another. There are no heronries in the study area but a number are within easy flying distance, the nearest being in West Wood, north-east of Clevedon (abandoned 1990). Birds are seen regularly around Blake's Pools and the River Yeo, also on the Estuary mud and along the rhines behind the sea wall. Flocks of ten or more have been recorded on four occasions: eleven in flight over the Yeo on 25 Sept. 83, ten roosting on the Yeo Estuary on 27 Sept. 84, eleven at the same site on 20 July 88, and twelve on Blackstone Rocks on 24 Aug. 90. [1868]



SPOONBILL *Platalea leucorodia*. The only reference to this species in the literature is in the 1868 list. [1868]

[LESSER FLAMINGO *Phoenicopterus minor*. A bird which was thought to have escaped from Slimbridge a year earlier was seen feeding on the mud on 20 Apr. 89. An unidentified Flamingo (probably a James's) was also present from 11 Aug. to 10 Sept. 65.]

MUTE SWAN *Cygnus olor*. By providing a secure breeding site and good feeding areas the construction of Blake's Pools has been beneficial to this species. The bar diagram shows this; the shaded bars give the averages of the maximum monthly counts for 1980 to 1984, that is before the main pool was filled, and the unshaded bars give the corresponding values for 1985 to 1990. A herd (up to fifteen birds) which usually frequents Kenn Moor was occasionally seen near the Yeo Estuary. Single pairs have bred on the island in the outer Blake's Pool since 1986 producing four fledged young in that year, five in 1987, four in 1988, and five in 1989 and 1990. Pairs have also attempted to breed on quiet stretches on some rhines, these having been much less successful.



BEWICK'S SWAN *Cygnus columbianus*. Small herds were seen occasionally in the past but there have been only two records since 1983. The records for the study period are: 1980, five on 26 Oct.; 1981, 15 on 18 Jan., six on 6 and 14 on 19 Dec.; 1982, five on 17 Jan.; 1983, ten on 13 Nov.; 1987, eight on 17 Jan.; and 1988, four on 30 October.

WHOOPEE SWAN *Cygnus cygnus*. A scarce species in Clevedon Bay with only three records this century all of which refer to birds in flight: four on 14 Jan. 68, one on 2 Jan. 83, and a family party of five over the Yeo Estuary on 18 Dec. 88. [1868]

[BLACK SWAN *Cygnus atratus*. There was a single feral bird on Kenn Estuary from 30 Sept. to 2 Oct. 83.]

PINK-FOOTED GOOSE *Anser brachyrhynchus*. The only record is of a single bird near Kingston Seymour on 15 Oct. 61.

WHITE-FRONTED GOOSE *Anser albifrons*. Flocks of up to ten birds are recorded in most winters during cold spells although some much larger flocks have been seen. The largest recorded flock contained 400 birds and was seen on 31 Dec. 63. Usually the birds do not stay, but a flock of 13 was present on the coastal fields between the Kenn and Yeo Estuaries from 4 to 18 Dec. 88. The remaining records for the study period are: 1980, three on 30 Nov.; 1981, eight on 13 Dec.; 1982, one on 17 Jan.; 1984, three on 25 Nov.; 1985, four on 10 Jan.; 1986, eight on 10 Feb.; 1988, 13 on 17 Dec.; and 1989, 20 in flight on 14 December. [1868]

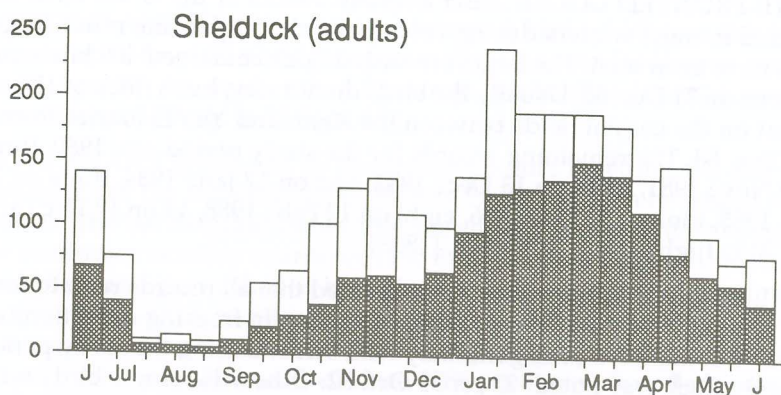
GREYLAG GOOSE *Anser anser*. It is assumed that all records refer to feral birds although two very wary individuals seen in freezing conditions on 21 Jan. 79 could have been genuinely wild birds. During the study period one large flock was noted: 22 on 31 Oct. 82. Otherwise single birds were seen on 3 Apr. & 5 Dec. 82, 2nd & 30 Jan. 83, 22 Jan. & 22 Apr. 84, with three on 12 Mar. and two on 15 Apr. 89, and three on 6 May 90.

CANADA GOOSE *Branta canadensis*. There have been only seven records during the study period all in spring: two on 15 May 83, two on 31 May 84, one on 20 Apr. 85, one on 12 Mar. 89, two on 30 Apr. 89, one on 11 Apr. 90 and three on 24 June 90.

BARNACLE GOOSE *Branta leucopsis*. This species has been reported four times in the study site: eight in late December 1970, of which two were shot, four at the Yeo Estuary on 19 Oct. 80, one with a Canada Goose on Blake's Pool on 20 Apr. 85, and seven on 23 Oct. 88 on one of the coastal fields. It is often difficult to determine whether these geese are genuinely wild or not. Those seen in October 1980 and 1988 were considered to be wild birds which had been disoriented and overshot their usual wintering grounds in Scotland by bad weather and adverse wind conditions (pers. comm. M.A. Ogilvie).

BRENT GOOSE *Branta bernicla*. All records refer to the dark-bellied nominate race. In the recent past this has been the commonest goose seen in Clevedon Bay. During the study period it has occurred in each winter from late October to early April; also three were seen on Blackstone Rocks on 1 May 88. Most records are for November with an average of five birds present, the averages for the remaining months range between one and three. Five records of larger flocks have been noted: eleven on 13 Nov. 83, twelve on 25 Jan. 84, eight on 18 Mar. 86, 18 in flight on 14 Dec. 87, and 13 on 15 Nov. 89. [1868]

SHELDUCK *Tadorna tadorna*. Shelduck is the commonest and most important wildfowl species occurring in the study site with good numbers present at all times except late summer, and with a major breeding colony. The shaded bars in the bar diagram give the averages of the maximum fortnightly counts over the study period, and the unshaded bars give the maximum counts for the corresponding periods. Note that juvenile birds



have been excluded from the averages and maximum counts before September. These birds usually disperse away from the site in autumn, their destination being unknown. It is also not known for certain whether the adults moult in Bridgwater Bay or at the main moulting sites at Knechtsand and Trischen off the German North Sea coast. It is probably the latter, since local birds leave before the moulters arrive (it is conjectured from Ireland, see Ogilvie, 1975 and Smit and Wolff, 1981). Flock sizes have not varied much during the study period; the first table below gives the year-on-year averages of counts made between November and May (inclusive), that is the average number of birds seen in each year outside the summer and early autumn period.

Average Shelduck numbers for November to May during the study period.

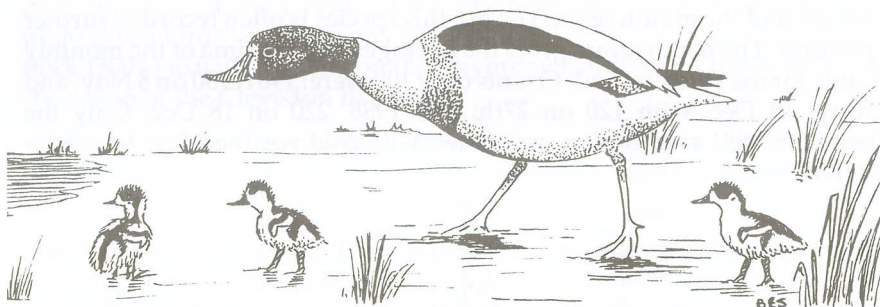
80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
103	92	77	109	93	87	83	95	125	107

Considering that about 60 'possible' pairs are usually present in early spring it is surprising that less than fifteen per cent breed successfully. The second table below gives the total number of ducklings recorded each year between 1979 and 1990 at the study site. Almost all of these were seen in and around the Yeo Estuary with occasionally a few near the Kenn Estuary. Clearly 1980 was an exceptional year as the average number of ducklings is 48 for the twelve year period. The first broods usually appear in the second half of May, the earliest date was 14th (in 1984), and most have arrived by early July. Recently a few very late broods have also been reported, the latest date for a brood to appear was 12 August (in 1989).

Numbers of Shelduck ducklings in Clevedon Bay 1979 to 1990.

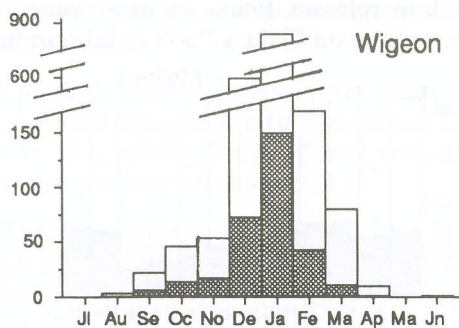
1979	50		1982	31		1985	40		1988	51
1980	96		1983	36		1986	43		1989	30
1981	46		1984	51		1987	56		1990	66

A Shelduck breeding survey was also carried out in 1958 (Taylor, 1959). In that year 261 birds were counted in the study area on 4 May and 134 ducklings were counted on 13 July, the total number of ducklings for that year was probably considerably higher. Assuming these counts were typical for that period there has clearly been a considerable drop in the wintering and breeding populations over the past thirty years. One possible cause is the construction of the M5 motorway. Pairs have been known to breed up to five kilometres inland leading their young to the water once hatched and the motorway is clearly a considerable barrier to this. In June 1987 a family party was seen attempting to walk across the M5—their fate was not recorded! [1868]



[CHILOE WIGEON *Anas sibilatrix*. There was a single tame male on one of the inner Blake's Pools on 19th & 26 Aug. 90.]

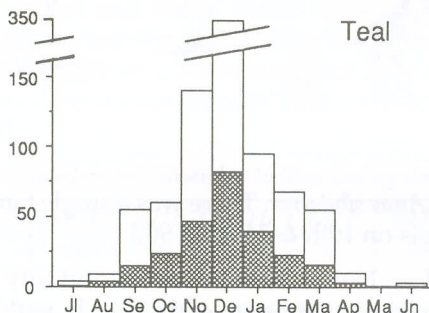
WIGEON *Anas penelope*. Normally between ten and fifty birds are present around the Yeo Estuary September to early March, with occasionally one or two in the intervening period although ten were seen on 5 Apr. 87. Rather surprisingly there are very few references to this species in the literature prior to 1980. The bar diagram gives the average and maximum monthly counts for the study period. During cold spells some large flocks



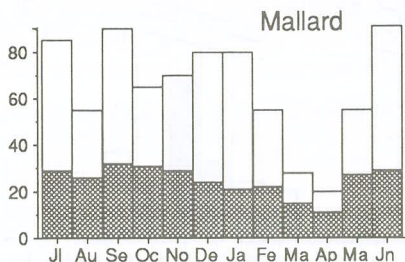
have been recorded: 600 on 19 Dec. 81 with 350 on 27th, and 350 again on 17 Jan. 82; 120 on 20 Jan. 85 with 130 on 10 Feb. 85; 900 on 16 Jan. 87 with 125 during the rest of the month and 170 on 1 Feb. 87. [1868]

GADWALL *Anas strepera*. There were only three records of this species between 1980 and 1985. Since then it has been seen about six times a year although there was only one record in 1988. All counts have been of three or less except for five on 31 Aug. 86 and four on 20 Mar. 87, and it has occurred in every month except May and June.

TEAL *Anas crecca*. Generally more common than Wigeon with between 20 and 90 usually present from September to March, but unlike that species severe weather does not normally produce large influxes. Thirty years ago much larger flocks were reported. For instance 835 were seen on 10 Feb. 52 with 750 on 4 Jan. 53. Duck species in the study area are most commonly seen around the mouth of the Yeo but this species is often recorded further upstream. The bar diagram gives the averages and maxima of the monthly counts for the study period. Counts over 100 were: 1981, 150 on 8 Nov. and 350 on 19 Dec. with 120 on 27th; and 1988, 220 on 18 Dec. Only the December 1981 counts were associated with cold weather. See Appendix 2. [1868]



MALLARD *Anas platyrhynchos*. When one considers how common this species is locally, it is surprising that so few birds are seen in Clevedon Bay. The largest flocks recorded during the study period contained 90 birds seen in both June and September 1989. This is the more surprising as the local wildfowling association releases flocks in most years; for instance 45 flightless birds were present on Blake's Pools in late summer 1990. Larger



flocks have occurred in the past, these including 390 in 1952 and 134 in 1968, both counts for December. Also more birds are seen at nearby sites, Sand Bay for example. Regular shooting especially near the mouth of the Yeo may be a contributory factor. The bar diagram gives the averages and maxima of the monthly counts for the study period. A number of pairs breed in the vicinity (some ferally), usually on a quiet stretch of rhine either on the ground or in pollared willows, and close to either the Kenn or Yeo rivers. [1868]

PINTAIL *Anas acuta*. Small numbers occur occasionally between December and April, the maximum count for the study period being eight. Outside this period a pair was reported on 25 May 88. But as with the previous two species good numbers were seen in the early nineteen-fifties with, for example, 50 in January 1952. There have been more records recently with up to seven birds seen on many visits in the 1988/89 winter. A substantial flock (300+) usually winters on the Rhymney Estuary and this is probably the origin of the Clevedon Bay birds.

GARGANEY *Anas querquedula*. This species has been recorded on only three occasions in Clevedon Bay, all in September, with two on 9th in 1979, and single birds on 9th and 16th in 1984.

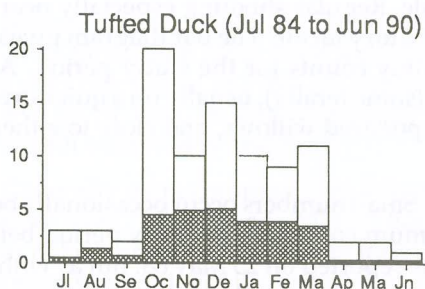
SHOVELER *Anas clypeata*. There is no particular pattern to the occurrences of this species—it has been recorded up to four times a year recently with normally less than five birds present. But again in the nineteen-fifties more were recorded when 50 birds were regularly reported in winter. The largest counts during the study period occurred in summer with 13 on 27 June 82 off the Kenn Estuary, and four on 22 May 88 near the mouth of the Yeo.

POCHARD *Aythya ferina*. This is another species which has benefited from the construction of Blake's Pools. In the five years prior to the opening of the first pool there were only three records during cold weather. In the 1985/86 and 1986/87 non-breeding seasons (August to March) up to eight were seen regularly with larger flocks as follows: 16 on 8 Dec. 85; 13 on 21 Sept. 86; and eleven on 6 Dec. 87. Perhaps because of the milder conditions reports in the next two winters were less frequent and the flocks were smaller, but in the 1989/90 winter 16 were seen on 21 Dec. with up to ten regular until mid February.

[AYTHYA Sp. A juvenile bird was seen on the inner Blake's Pools on 1st and 2 Oct. 89. It was first thought to be a Ferruginous Duck (*A. nyroca*), but is now assumed to be a hybrid of this species with New Zealand Scaup (*A. novaeseelandiae*) or possibly other species.]

TUFTED DUCK *Aythya fuligula*. The picture here is similar to that for Pochard although the fall off since 1987 has not been so marked. The only major count prior to 1985 was 26 on 19 Dec. 81 during cold weather. The bar diagram gives the averages and maxima of the monthly counts 1985 to

1990, almost all of which refer to records for the outer Blake's Pool. The highest count during this period was 20 in October 1986.



SCAUP *Aythya marila*. There have been six records of this species during the study period mostly from the main Estuary. They are: a pair on 15 Apr. 80; a female between 24 Apr. & 16 June and a male between 23 Nov. & 21 Dec. 83 on Blake's Pool; an immature on 20 Jan. 85; and a juvenile male on 16 Oct. 88 on Blake's Pool with 24 immature birds on 30th. This was the highest count in the Avon area for fifty years.

EIDER *Somateria mollissima*. An occasional visitor seen mostly on the Estuary, some individuals have stayed for long periods. The records (mainly immature birds) for the study period are: 1980/81, single bird on several dates between 9 Nov. & 9 Jan.; 1982, four (one male) on 5 Dec.; 1984, nine birds, one an adult male, appeared on 20 May, four remained until 28 June and three of these stayed until 19 Sept.; 1986, singles on 8 Feb. & 20 Apr.; 1987, six including one adult male on 25 Jan.; 1989, one at Blake's Pool on 24 Dec.; and 1990, a juvenile male on 22 June.

LONG-TAILED DUCK *Clangula hyemalis*. Two immature birds have occurred in the Yeo Estuary area. One was seen with Shelduck on 19 Feb. 84, and the second summered on Blake's Pools and near the mouth of the Yeo between 5 May and 8 June 88, and was seen there again on 17 July 88.

COMMON SCOTER *Melanitta nigra*. A regular visitor to the Severn Estuary this species has, surprisingly, only been recorded in Clevedon Bay on twelve occasions during the study period. The highest all time count was 20 on 6 Nov. 68. The study period records are: 1980, one on 2 Nov.; 1986, three on 8 Feb. and singles between 8 & 14 May, and between 27 Sept. & 5 Oct.; 1987, six on 12 Jan. and singles on 7th & 25 Nov.; 1988, one on 22 Apr. and two on 4 Dec.; and 1989, eight including three adult males on 16 July and one on 29 October.

VELVET SCOTER *Melanitta fusca*. Three records of this unusual species have been reported in Clevedon Bay: five on 12 Feb. 56 included three males, and single males on 28 Sept. 80, 3rd to 17 Nov. 85 and on 22 Dec. 85.

GOLDENEYE *Bucephala clangula*. This species has occurred about 25 times during the study period mainly between October and March, and usually with less than six individuals present, although one bird remained on Blake's Pool between 1 Mar. & 19 Apr. 87. There was no poor weather correlation with these occurrences. The remaining study period records are: 1980, singles on 23rd & 29 Nov.; 1981, singles on 15 Nov. & 19 Dec. with six on 24th; 1982, four on 17 Jan. and one on 14 Feb.; 1983, single on 13 Nov.; 1984, single on 22 Jan.; 1986, two between 31 Jan. & 2 Feb., three between 9th & 16 Mar., and one between 8 Oct. & 16 Nov. with six on 24 Oct.; 1987, one on 20th & 27 Dec. apart from the record mentioned above; 1988, singles on 11 Sept. & 14 Oct. with two on 11 Nov.; and 1989/90, in November one was present from 1st to 15th and three arrived on 26th, these remaining intermittently until 4 Feb. with one until 4 March.

SMEW *Mergus albellus*. A 'brownhead' stayed on the outer Blake's Pool between 23 Jan. & 15 Feb. 1987 during a county wide influx. This species was also reported in the Clevedon area in 1892.

RED-BREASTED MERGANSER *Mergus serrator*. The study period has produced six records of single birds (mainly females or immatures): on 10th and between 15th & 24 Feb. 80, on 15 Nov. 81, on 5 Nov. 86, on 18 Jan. 87, a male on 17 Jan. 88 and a female on 24 Feb. 88. This was one of the few duck species on the 1868 list. [1868]

GOOSANDER *Mergus merganser*. The picture for this species is similar to the previous one except that counts have been higher in some cases. A female was present in the 1978/79 winter arriving on 3 Dec. and leaving on 4 Mar. and two were seen on 30 Dec. 79. For the study period the records are: 1980, single on 28 Dec.; 1982, two on 17 Jan.; 1985, one on 20 Jan., two on 17 Mar. with one on 24th; 1987, eight on 18 Jan. with 26 on 21st during a cold spell; 1988, single on 19 Feb. with two on 2 Apr.; 1990, immature on 29 Mar. and a female at Blake's Pool on the unusually early date of 8 August.

RUDDY DUCK *Oxyura jamaicensis*. Three records only for this species, all on the Estuary in cold conditions: two on 28 Jan. 79, and singles on 11 Nov. 84 and 23 Feb. 86.

MARSH HARRIER *Circus aeruginosus*. There have been three records during the study period: a male near the Yeo Estuary on 1 Sept. 83, a female or immature seen briefly near the Kenn Estuary on 11 Mar. 84, and an immature bird which roosted behind Blackstone Rocks on the night of 20/21 May 89.

HEN HARRIER *Circus cyaneus*. During the study period there has been a good series of records for this species. It was recorded in all years except 1983 and six records refer to adult males. The records are (single female/immature unless stated otherwise): 1980, 16 Nov.; 1981, 19 Dec.

(adult male); 1982, 1st & 6 Jan. (different birds) and 27th (adult male); 1984, 30 Sept. (juvenile male) and 28 Oct. (adult female); 1985, 13 Jan. (adult male) and 20th & 21 Feb.; 1986, 18 Mar.; 1987, 23rd & 25 Jan. (juvenile male) and 6 Dec. (adult male mobbed by Peregrine); 1988, 28 Oct. & 11 Nov. when two birds were present; 1989, 19 Mar. with an adult male on 31st and on 3 Dec.; 1990, 29 March (adult male) and an immature on the unusually late date of 13 May.

GOSHAWK *Accipiter gentilis*. There has been one definite sighting: a male near Yeo Estuary on 16 Feb. 86. See also Appendix 1.

SPARROWHAWK *Accipiter nisus*. This raptor is recorded regularly in the study site and it was noted on about ten per cent of the visits made during the nineteen-eighties. Birds are almost always seen singly even though on several occasions two were present. More birds are reported from August to October and there has been only one record in May. In most years a pair bred somewhere in the vicinity of Kingston Seymour sewage works although the exact site was not located. [1868]

BUZZARD *Buteo buteo*. Considering the number of records for this species in and around the Gordano Valley and at Clevedon Court Wood, it is surprising that so few records have come from the study area. One was seen over the Kenn Estuary on 13 Dec. 81. Since late 1988 there has been a series of records around Kingston Seymour beginning with three on 18 Nov., and with one or two seen in most months up to the end of the study period although some of these sightings were south east of the study site. Also three were reported over Clevedon on 6 Sept. 89 and a single bird was seen at the Yeo Estuary on 15 Mar. 90. [1868]

ROUGH-LEGGED BUZZARD *Buteo lagopus*. There are two old records for this rare species: in November 1906 and October 1910, a dead bird.

OSPREY *Pandion haliaetus*. One was seen flying down the Estuary on 14 Sept. 86, the only record.

KESTREL *Falco tinnunculus*. This, and Sparrowhawk, are the commonest raptors seen in the study area. Due to the Kestrel's conspicuousness it is reported more regularly (on about one visit in four) but it is likely that the numbers of both species are very similar. Birds are seen most often between June and October and the maximum count on any one visit was five (on 16 Aug. 88). No breeding site has been found in the study area, although newly fledged young have been seen. Two birds with unusual plumage have been recorded. During 1983 and 1984 a large very pale bird was often seen around the Yeo Estuary, the usual reddy brick colour being replaced by buff and the remaining plumage being much paler than usual. In June 1989 a very dark individual was seen, the plumage colour being Buzzard-like and the only palish part being around the throat. See also the Peregrine entry below. [1868]

MERLIN *Falco columbarius*. From 1978 to mid 1984 this species was scarce in the study site with only eight records and none in 1979 or 1980. Since then at least one bird, usually a female or juvenile, has been seen on ten or more occasions in each winter period: 1984/85, from 19 Sept. to 21 Apr.; 1985/86, from 15 Sept. to 16 Mar. with an additional male on 1 Dec. and one on 9 Apr.; 1986/87, from 5 Oct. to 15 Mar.; 1987/88, from 22 Oct. to 6 Mar.; 1988/89, a very early male seen on 10 July and from 16 Sept. to 7 Apr.; 1989/90, 28 Sept. to 28 Jan. It is likely that the wintering birds left before the dates indicated, and the late records refer to migrants.

HOBBY *Falco subbuteo*. In most years this species was seen once or twice in the study site. There were more records in 1986 when the species was commoner in the county as a whole. The records for the study period are: 1982, single birds on 23 May & 5 Sept.; 1984, 15 July; 1985, 10 July & 15 Aug. (a juvenile); 1986, 26 Apr., 5th, 8th & 14 May, 6th & 15 July and 19 Sept.; 1987, 31 May; 1988, 2 May; 1989, 12 Sept.; and 1990, 25 May. [1868]

PEREGRINE *Falco peregrinus*. Sightings of this species have increased dramatically during the study period. Between 1977 and 1982 there were only four records with none in 1981. Two different birds were seen in August 1982 and one stayed until January 1983 with a similar series of records in the 1983/84 winter. A male was noted in May 1984 and from September 1984 at least one sighting was reported in every month until February 1987. Only four sightings were noted in the next eighteen months. In September 1988 two birds (an adult male and a juvenile) arrived and remained fairly constantly until the spring of 1989, and again in September 1989 two birds were present but were not seen after November. Two immature birds were reported near Yeo Estuary in April and an adult male in May 1990. The species does not breed in the study area but a nest on Wain's Hill is a possibility in the future. These falcons often attack the Dunlin flocks.

A remarkable occurrence was noted on 24 July 85. Two juvenile Kestrels were perched on the sea wall begging for food and an adult female Peregrine was flying overhead calling and carrying food. As the observer approached the Kestrels took to the air with more calling and the Peregrine tried to pass the food item to one of the Kestrels. The observer's presence disturbed this activity, the Kestrels landed on the rocks but the Peregrine flew around his head in a very agitated manner and finally landed about 100 metres from the juvenile birds. Clearly the Peregrine had 'adopted' the juvenile Kestrels at least for that day. Similar behaviour has been reported on a few occasions before (see Ratcliffe, 1980). [1868]

RED-LEGGED PARTRIDGE *Alectoris rufa*. Single birds were seen near Yeo Bank Farm on 18 Feb. 78 and 22 Mar. 88. Released flocks (at least four in September and October with twelve on 9 December) were seen in autumn 1990, when some were shot.

GREY PARTRIDGE *Perdix perdix*. It is likely that this species has bred in some years, breeding calls being heard near the Kenn Estuary on 7 June 81. Other study period records are: 1981, one or more on 17 June; 1986, 30 on 10th and 20 on 24 Aug., 21 on Sept. 8th, and three on Dec. 7th; 1987, two on 25 May; and 1990, twelve in December 1990. Some of these records refer to released birds; it was reported (pers. comm.) that at least 20 were released in late summer 1990 some of which were shot. [1868]

QUAIL *Coturnix coturnix*. Single birds was seen or heard from long grass close to the sea wall on 6 Sept. 70 and on 20 May 88.

PHEASANT *Phasianus colchicus*. Calls are often heard from the Wain's Hill area, and a pair definitely bred there in 1989. Also since 1987 one or two birds have been seen occasionally near Blake's Pools. The species occurs and breeds not uncommonly on the coastal farmland adjacent to the study area. [1868]

WATER RAIL *Rallus aquaticus*. Before the new sea wall was built this species was seen occasionally in the rhines behind the wall. Recently a few sightings have been reported from the Yeo Estuary area. For the study period the records are: 1981, single birds on 8 Mar., 19th & 23 Aug. (a juvenile), 25 Oct., and 15 Nov.; 1989, at Blake's Pool on 15 Dec.; and 1990, in a ditch near the Kenn Estuary on 5 Feb. It is not known whether the juvenile bird seen in 1981 fledged locally or was a migrant. [1868]

SPOTTED CRAKE *Porzana porzana*. There are four records: single birds seen at the Kenn Estuary on 21 Dec. 67, 18 Dec. 85, and 20 Nov. 86. Also in November and December 1990 one was present in the salt marsh near Wain's Hill with two satisfactory sightings and five further brief views.

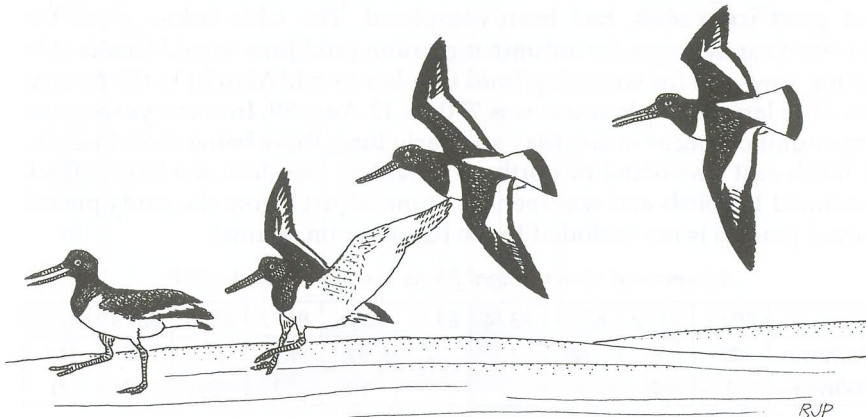
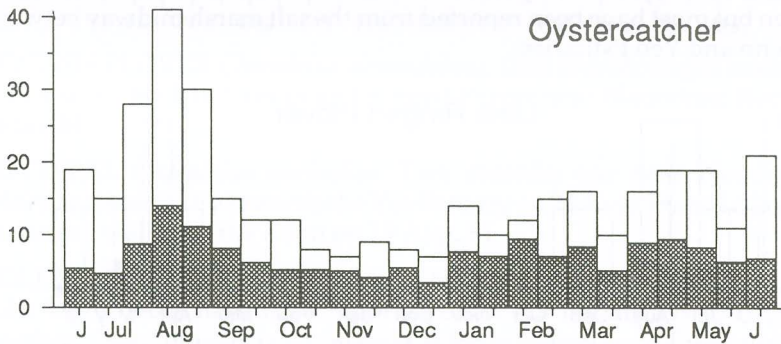
CORNCRAKE *Crex crex*. In 1875 this species was described as 'a common summer visitor in fields generally, both hay and corn' (in the northern part of the old county of Somerset, Wheeler 1875-6), and it occurs on the 1868 list. Hence it is likely that it was regular in the study area a century ago, but no more; there have been no recent sightings. [1868]

MOORHEN *Gallinula chloropus*. This species occurs in the rhines and irregularly on Blake's Pools; broods have been noted in 1979, 1981, 1982, and 1984. A local farmer has suggested that numbers have decreased recently, and that introduced American Mink is responsible. [1868]

COOT *Fulica atra*. Before the construction of Blake's Pools the only record was of six on 17 Jan. 82 during freezing conditions. Since then small numbers have been seen occasionally on the pools, the largest count being five in July 1989, and breeding was reported there in 1985 and 1989.

CRANE *Grus grus*. One confirmed record: a single bird was seen flying down the Estuary past Wain's Hill on 31 Mar. 71. See also Appendix 1.

OYSTERCATCHER *Haematopus ostralegus*. Unlike most British estuaries the inner Severn attracts very few Oystercatchers, and this is reflected in its status in Clevedon Bay. Usually about six birds are seen during a visit although these sightings are less regular in December and January. The largest count for the study period was 41 on 2 Aug. 86, but the largest all-time count was 80 in Apr. 73. A few pairs breed, normally in June and often without success. The study period details are as follows: 1982, one nest—outcome unknown; 1983, two nests—both failed; 1984, one pair produced a nest with three eggs (19 May) which failed, but a repeat nest contained two live chicks on 5 July; 1985, one nest with three eggs—failed; 1987, one nest with three eggs—probably failed although a juvenile was seen in late June; 1988, again a nest with three eggs which failed; 1989, a nest with three eggs near the Kenn estuary and a nest with two eggs near the Yeo Estuary—both failed but a pair using the shingle island in Blake's Pools probably succeeded; 1990, a nest on this island produced three large chicks by late June. [1868]

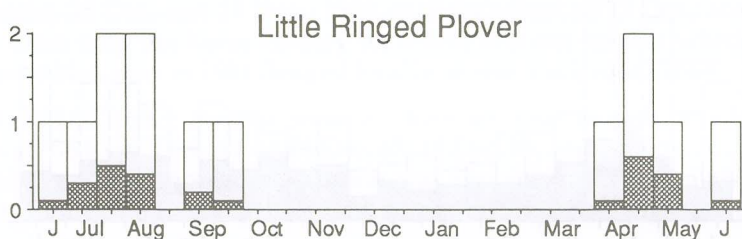


AVOCET *Recurvirostra avosetta*. This fine wader has been reported eight times in the study site as follows: 1969, four 24th to 26 May (about 20 were summering in the Estuary that year); 1976, single birds on 16 May & 6 June; 1977, one on 26 Oct.; 1987, one on 20 Mar.; 1989, one on 9th and six between 25th & 28 Apr.; and 1990, five on 1 April.

STONE CURLEW *Burhinus oedicnemus*. Three sightings near the Yeo Estuary have been reported, and there are only four other Avon records. The details are: two on 3 Dec. 25, and single birds on 30 Apr. 88 and 18 June 89. Unusually, this last bird was seen on the tide line with some Curlew and Whimbrel.

BLACK-WINGED PRATINCOLE *Glareola nordmanni*. One confirmed record: single adult bird seen well by many observers 9th to 17 June 88. See Appendix 1.

LITTLE RINGED PLOVER *Charadrius dubius*. One or two are seen on passage in most years. They occur on Blake's Pools and near the mouth of the Yeo but most have been reported from the salt marsh midway between the Kenn and Yeo Estuaries.

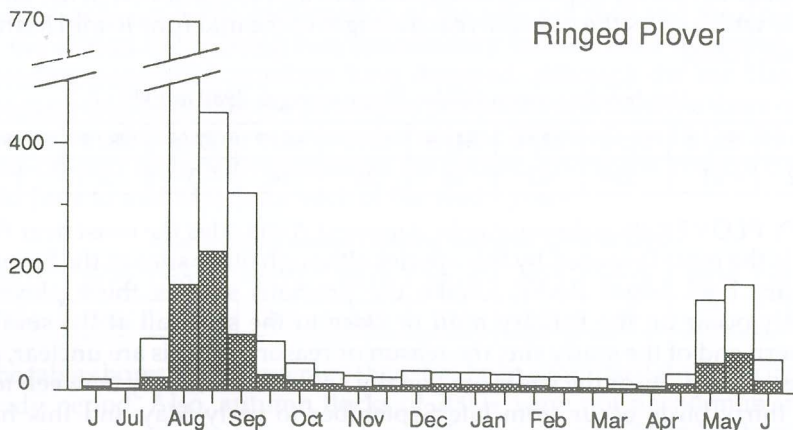


RINGED PLOVER *Charadrius hiaticula*. Both migratory and wintering populations have increased markedly during the study period, the main change coming once the new sea wall, which provides both shingle areas and good roost sites, had been completed. The table below gives the year-on-year averages for autumn migration (mid June to mid October) in the top row, and for wintering (mid October to mid March) in the bottom row. The largest single count was 770 on 12 Aug. 89. In some years quite large numbers occur in late May and early June, these being most likely to be north-east Greenland or northern Canadian breeders; the largest flock contained 155 birds and was seen on 1 June 80 just before the study period started (and so is not included in the bar diagram counts).

Autumn and winter Ringed Plover averages, 1980 to 1990

	80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
Autumn	27	8	17	46	27	92	81	117	67	164
Winter	3	2	1	2	2	10	19	21	18	21

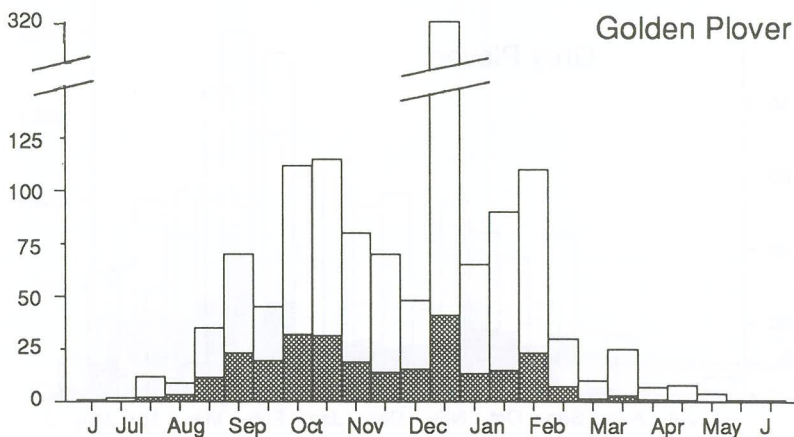
In 1988, 1989 and 1990 a pair (two in 1990) nested (three or four eggs laid) on the new sea wall near the mouth of the Yeo. In the first year at least one juvenile bird was seen. [1868]



KENTISH PLOVER *Charadrius alexandrinus*. One record: single male seen with a small flock of Dunlin and Ringed Plover near Blackstone Rocks on 3 May 84.

DOTTEREL *Charadrius morinellus*. Two records: one near Woodspring Priory and seen to fly towards the Yeo Estuary on 24 Aug. 79, and a juvenile on the sea wall near the Kenn on 19 Aug. 81.

GOLDEN PLOVER *Pluvialis apricaria*. Mainly a winter visitor. In the past quite large flocks have been reported often but not always during cold weather. These plovers occur mainly at the northern end of the study site either on Blackstone Rocks or on the fields directly behind. Counts include: 80 in October 1964, 500 in November 1976, 230 in October 1979, and 320 on



19 Dec. 81. If the tide has been low during the night, flocks roost on the mud flats near Blackstone Rocks and head inland after dawn to feed. Since 1986 no count has exceeded 35 and most have been much lower. This drop is similar to that for Lapwing discussed later and is illustrated in the table below which gives the year-on-year averages of the mid June to mid March counts. [1868]

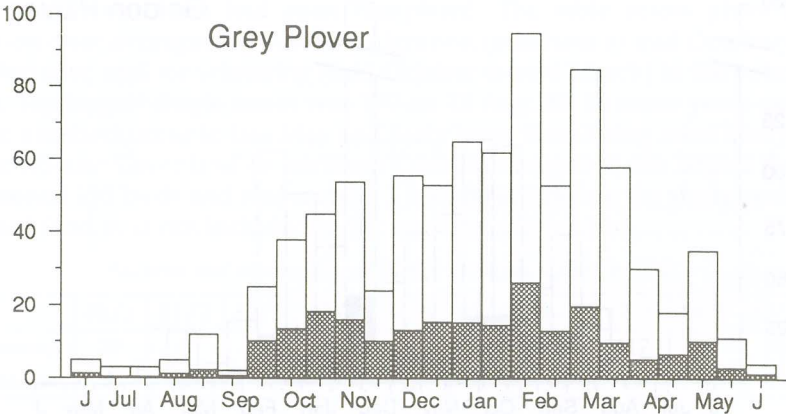
Non-breeding season Golden Plover averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
22	31	15	13	15	24	14	3	2	1

GREY PLOVER *Pluvialis squatarola*. Amongst Avon sites the coast near the Yeo is the most favoured by this species although other sites in the Severn Estuary hold larger flocks. Unlike the previous species these plovers mainly occur on the Estuary mud or close to the sea wall at the south-western end of the study site; the reason or reasons for this are unclear, as all seaward parts of the site seem equally suitable. Normally between ten and thirty birds occur from late September to early May and this has probably been true for many years as the species was described as 'fairly frequent' at this site in the 1936 Wader Report (Davis, 1936). During the study period there has been some increase in the counts, reflecting a general trend in the western half of the country and this is illustrated in the year-on-year table below which gives the mid September to mid March averages. The largest count was 95 on 3 Feb. 88 near the Yeo mouth. [1868]

Non-breeding season Grey Plover averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
2	9	9	13	7	20	8	15	49	18

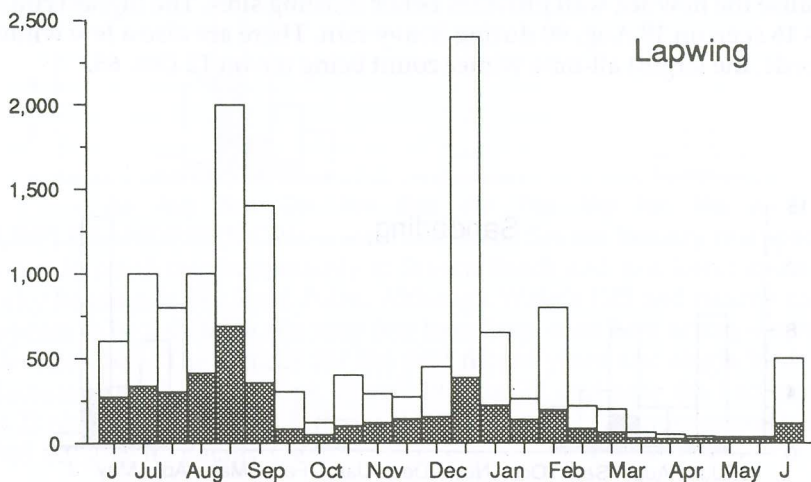


LAPWING *Vanellus vanellus*. There has been a major decline of this species during the study period. In earlier decades the large autumn flocks were one of the main bird sights of the area, but no more. A general decrease has been reported over much of southern Britain. In Clevedon Bay it has been more exaggerated, the construction of the new sea wall and the draining of the coastal fields being two contributory factors. Both wintering and breeding population numbers have dropped, although the bar diagram obscures this. Note that the December maximum count shown there refers to a major cold weather movement of at least 2500 birds on 19 Dec. 81. The year-on-year table below illustrates the decline, giving the average counts mid June to mid March for each of the study years.

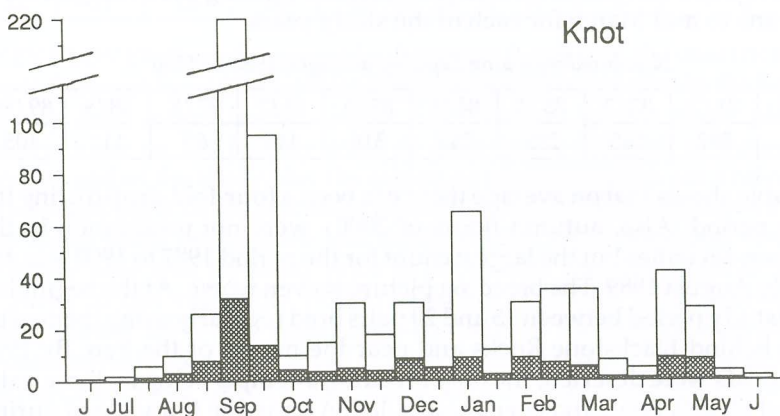
Non-breeding season Lapwing averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
404	382	165	285	245	316	146	69	111	105

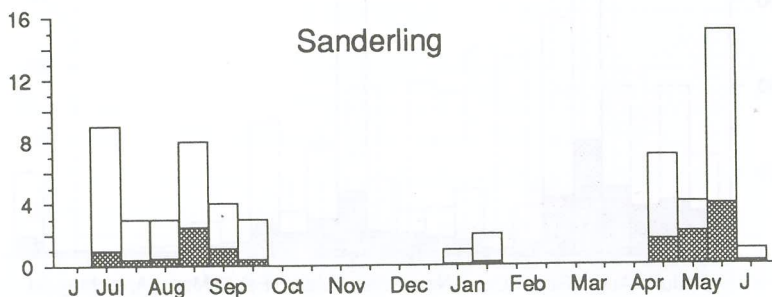
The table shows that on average there has been a four-fold drop during the study period. Also, autumn flocks of 2000+ were not uncommon in the nineteen-seventies but the largest count for the period 1987 to 1990 was 465 in early August 1989. The breeding picture is even worse. At the beginning of the study period between 15 and 20 pairs bred regularly using the coastal fields behind Blackstone Rocks and near the mouth of the Yeo. By 1990 these fields were deserted, the only breeding attempts being by three pairs around Blake's Pools and even these failed. A Lapwing found dead during a cold spell near the mouth of the Kenn on 2 Mar. 86 had been ringed (fully grown) nearby on 26 Dec. 78.



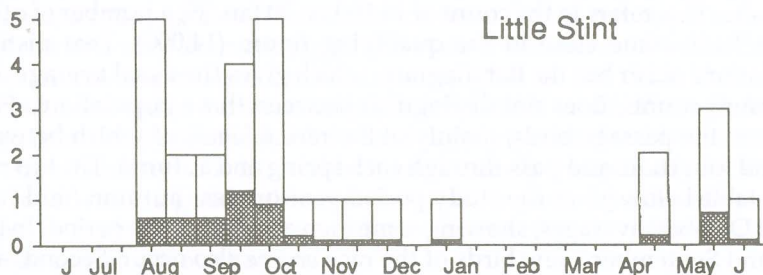
KNOT *Calidris canutus*. There has been an erratic series of reports for this species in Clevedon Bay. During the study period it was seen on about one visit in ten, and when present usually less than thirty birds were reported. Flocks did not stay long—they were either on passage or moving between their main Severn Estuary sites on the Welsh coast and near the Parrett Estuary. In the nineteen-sixties much larger flocks were reported. For instance 1000+ were seen near the Yeo Estuary in both October 1960 and January 1968. During the study period only three counts exceeded 50 birds, the largest was 220 on 4 Sept. 85. [1868]



SANDERLING *Calidris alba*. As there is virtually no sand or shingle in the study site it is not surprising that this species is seen only infrequently. During the study period about ten birds passed through each spring and autumn with more records in the second half of the period, probably because the new sea wall provides better roosting sites. The highest count was 16 seen on 19 Aug. 90 during heavy rain. There are also a few winter records, the largest all-time winter count being ten on 12 Dec. 65.

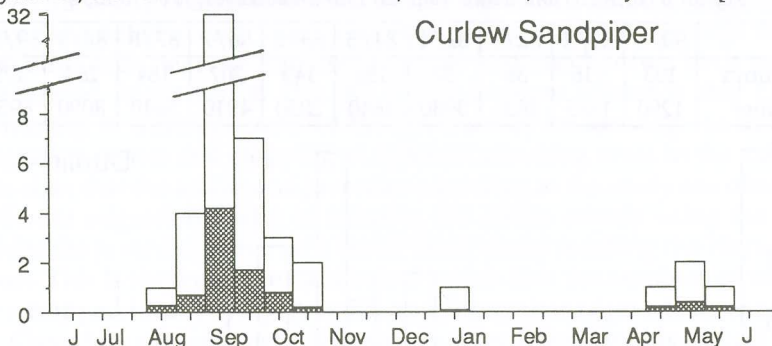


LITTLE STINT *Calidris minuta*. An uncommon passage wader recorded in all study period years except 1982, with also a few winter records. Most sightings involve one or two birds, but five were present in early October 1983 and on 4 Aug. 87, an early date for Clevedon Bay.



PECTORAL SANDPIPER *Calidris melanotos*. Two records: single juvenile birds seen on the Estuary salt marsh on 16 Oct. 87 near the Yeo and 16 Sept. 90 near the Kenn.

CURLEW SANDPIPER *Calidris ferruginea*. Mainly a passage migrant occurring in some years in quite good numbers but absent in others. There were no sightings in 1980, 1982 and 1989. The autumn of 1988 was exceptional over the whole country (Kirby, 1989) and also in Clevedon Bay where the maximum count was 32 seen on 11 Sept. A few winter sightings have been noted: three on 16 Nov. 69, otherwise single birds on 13 Nov. 66, 15 Jan. 67, 12 Mar. 67 and 12 Nov. 67, 13 Feb. 71, and 10 Jan. 82. [1868]

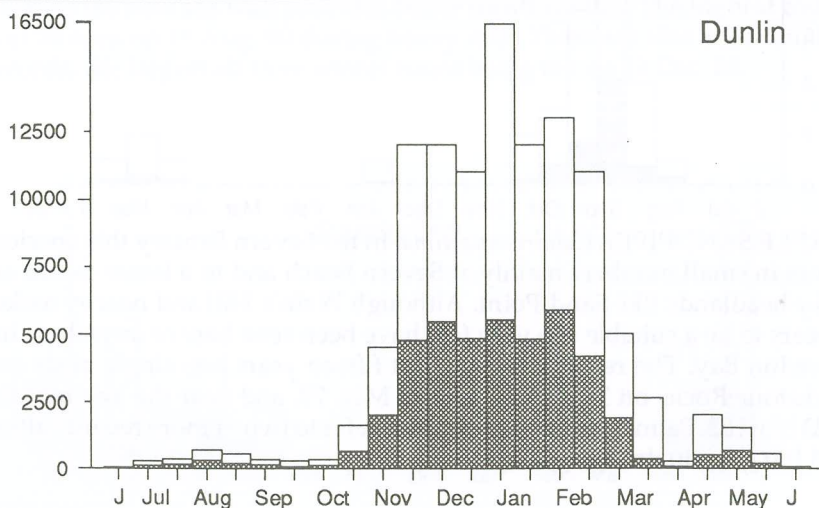


PURPLE SANDPIPER *Calidris maritima*. In the Severn Estuary this species occurs in small numbers mainly at Severn Beach and to a lesser extent at rocky headlands like Sand Point. Although Wain's Hill and nearby rocks appears to be a suitable site very few have been seen here or anywhere in Clevedon Bay. The records for the past fifteen years are: single birds on Blackstone Rocks on 18 Sept. 77 and 18 Mar. 79, and near the Yeo mouth on 23 Nov. 83. Palmer and Ballance (1968) refer to two or more records after 1865 but give no details. [1868]

DUNLIN *Calidris alpina*. Dunlin is by far the commonest species in Clevedon Bay. The study site qualifies for the status of international importance for this species in that on at least one occasion more than one per cent of the total world population was present—an unusual distinction for such a small site. This refers to the count of 16,500 on 20 Jan. 89; a number of other counts have come close to the qualifying figure (14,000). Two distinct populations occur but the bar diagram, which gives the usual average and maximum counts, does not distinguish between these populations. First there are the passage birds, mainly of the race *schinzii*, of which between one and four thousand pass through each spring and autumn. The top row of the table below gives the study period year-on-year autumn (mid June to mid October) averages, showing some increase during the period. In late May and September a few birds of the race *arctica* also occur. Second, and more important, between two and twelve (occasionally more) thousand birds of the race *alpina* winter in the study site. They start to arrive in mid October and stay until mid February or later. In the early part of the decade the normal mid-winter count was about 2000. There was a dramatic increase in the last four years of the decade when the normal feeding flock contained three to four thousand birds and at high tide roosts this was swelled by a further four to eight thousand birds which fed on the Welsh side of the Estuary but roosted at Clevedon. This is illustrated in the bottom row of the table below which gives the mid October to mid March year-on-year averages.

Autumn (schinzii) and winter (alpina) Dunlin averages, 1980 to 1990

	80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
Autumn	103	116	36	57	156	149	207	184	264	179
Winter	1290	1685	1635	3980	2640	2050	4910	5940	8090	6950



One cause of this increase may be the sea wall works in Sand Bay which have forced the birds away from that site. On the other hand the Birds of Estuaries Enquiry high tide counts taken in the mid nineteen-seventies were often in excess of 10,000 and so this cross-estuary roosting flight must have occurred then also. The reason for these flights remains unclear but they can be a very dramatic sight. The state of the soft mud in the Estuary is of critical importance for this species. If it is too thick then many invertebrates either burrow deep into the mud, or die through lack of oxygen; in either case the Dunlin's food supply is considerably diminished. On the other hand if it is too thin it can be easily swept away by storms. The mud was in a good stable state in the latter part of the decade and this helps to explain the rise in numbers present. See the Introduction for further comments on the topic.

The following ringing details have been kindly provided by Nigel Clark of the British Trust for Ornithology; for a more detailed account, see Clark (1991). Since 1978 some 3500 Dunlin have been ringed between the months of October and March at sites ranging from Wain's Hill to the mouth of the Kenn. The majority of these birds were caught during the late nineteen-seventies and early eighties as part of a study into the movement patterns along the south shore of the Estuary. To date there have been some 95 recoveries or retraps of Clevedon ringed Dunlin at sites throughout Europe away from the Severn, as well as over 600 in Clevedon Bay itself. In the early part of the study the birds were given coloured leg flags as well as rings; these flags have been remarkably long lasting and leg flagged birds have been noted in each year since 1978. The most recent sightings were of two birds seen near the Kenn on 3 Dec. 89 and another two birds seen on Blackstone Rocks on 28 Oct. 90. There is some evidence that Dunlin wintering in different parts of the Severn may be arriving via different migration routes and stopping at different moulting areas in the autumn. It is clear that the adults and juveniles wintering at the study site often take different migration routes in autumn, the adults mostly using the Baltic whilst the juveniles move on a broad front, many reaching the Norwegian coast. This is shown in the table below which lists the numbers of trapped or retrapped birds in July, August, and September of (a) adults wintering at Clevedon, and (b) juveniles which were subsequently found to be wintering at Clevedon.

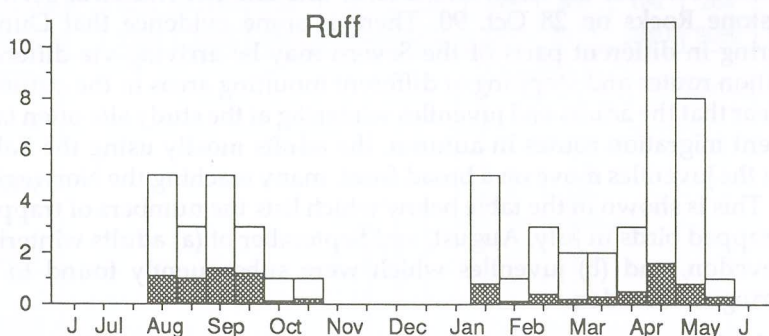
Outside the autumn period there have been 13 recoveries as follows: in winter on the Waddensee, at the mouth of the Humber and in Poole Harbour, Dorset; and in spring, again on the Waddensee (Dutch and Danish), on the Ribble Estuary and in Western Ireland; no single migration pattern was discernible. Unfortunately there have been no recoveries from the main breeding areas which are thought to be northern Fennoscandia and the Arctic coast of Russia. [1868]

Autumn Dunlin recoveries away from the Severn, 1978 to 1990

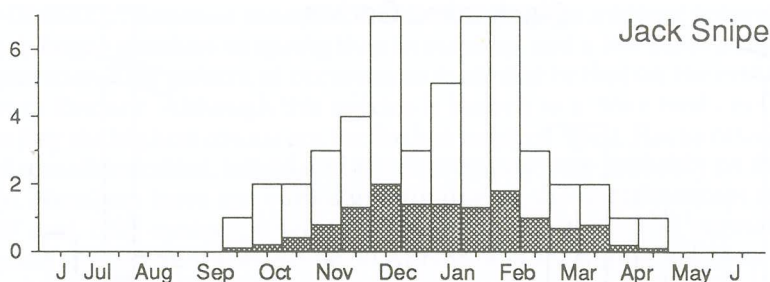
	(a) Adults	(b) Juveniles
Wash, Eastern England	16	
Dee Estuary, North-west England		1
Dutch Waddensee	7	
German Waddensee	4	
German Baltic coast	4	5
Danish Baltic Islands	4	
Southern Norwegian coast		3
Ottenby, Southern Sweden	17	
Gdansk, Polish Baltic coast	5	2
Finnish Baltic coast	8	1
East Finnmark, Northern Norway	1	4

BUFF-BREASTED SANDPIPER *Tryngites subruficollis*. One record: single bird near Yeo Estuary on 7 June 90. There had been sightings a fortnight earlier at Severn Beach and on the Welsh coast.

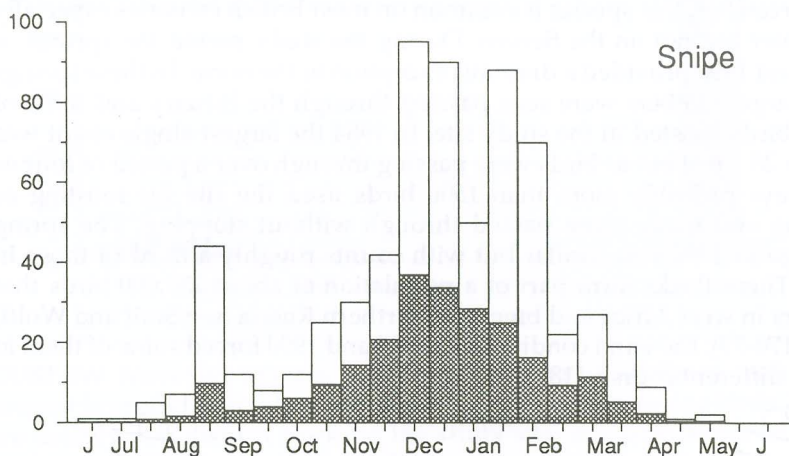
RUFF *Philomachus pugnax*. A regular passage migrant in small numbers, birds sometimes staying a week or more. It was reported in every year during the nineteen-eighties. There were also a few late winter records but only for the years 1985 to 1987. The largest flock (eleven plus) was present in the second half of April 1987. A few spring males have shown some breeding plumage—one in virtually full plumage was seen on 1 May 73.



JACK SNIBE *Lymnocyrtus minimus*. Due to this species' habit of not moving until the observer is almost upon it, the actual counts given in the bar diagram are undoubtedly only a rough estimate of the actual numbers present. But it is clear that it is a winter visitor in small numbers and the maximum present at any one time is probably ten or less. Unusually, on 1 Jan. 86 a bird was seen roosting on the sea wall path with Dunlin and Grey Plover. [1868]

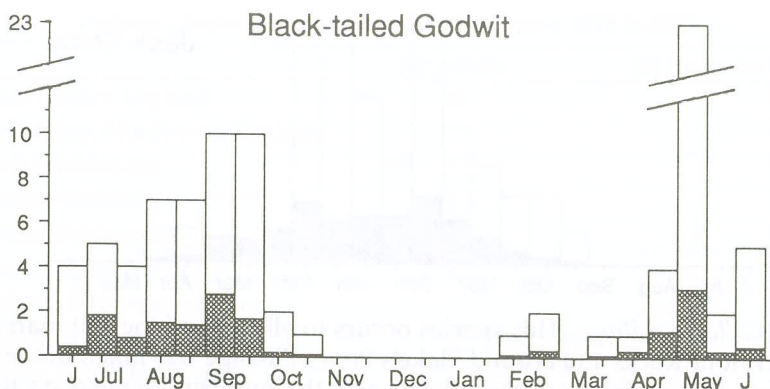


SNIPES *Gallinago gallinago*. This species occurs in all parts of the salt marsh, on Blackstone Rocks and around Blake's Pools. Passage was noted in some years but it is mainly a winter visitor and the numbers depend on the severity of the weather—if freezing conditions prevail on the near continent then more birds are seen at Clevedon as well as at other sites in south-west Britain. No count in the study period exceeded 100 birds but on 1 Jan. 78 a single flock containing at least 160 birds was seen on Blackstone Rocks. [1868]

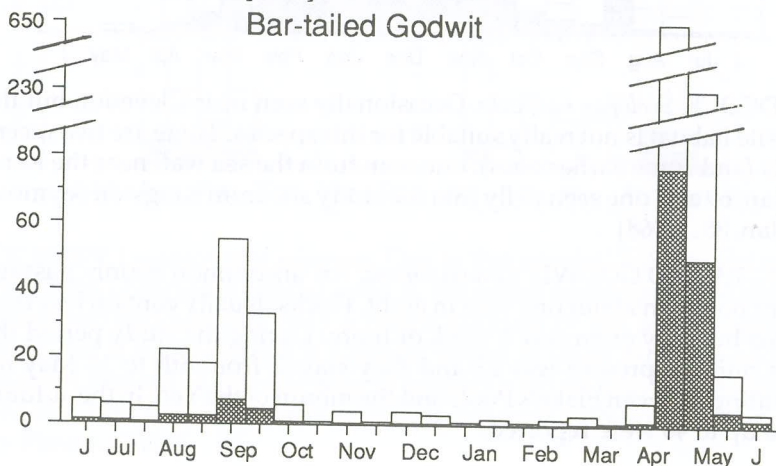


WOODCOCK *Scolopax rusticola*. Occasionally seen near Clevedon but the study site habitat is not really suitable for this species. There are two recent records (and some earlier ones): one seen from the sea wall near the Kenn on 12 Jan. 69 and one seen to fly into the study site from Kingston Seymour on 20 Jan. 85. [1868]

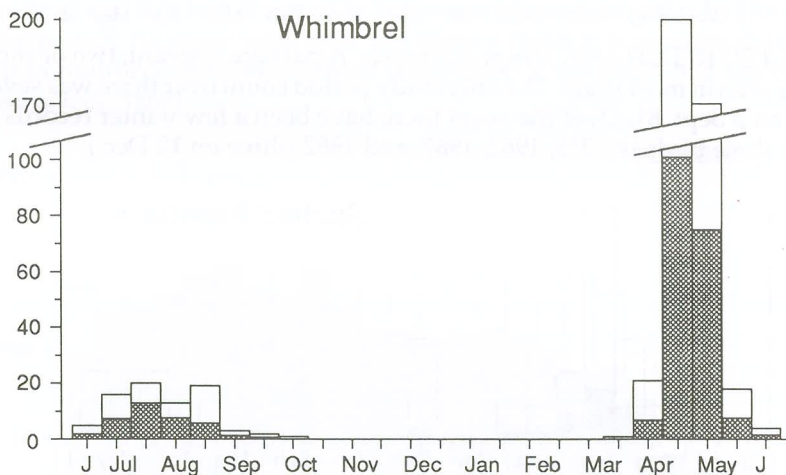
BLACK-TAILED GODWIT *Limosa limosa*. An uncommon mainly passage migrant noted on about one visit in eight. Flocks usually contain less than six birds but they often stay a week or more. During the study period the largest number present was 23 and they stayed from 8th to 15 May 88, commuting between Blake's Pools and the mouth of the Yeo. In the autumn of 1960 up to 40 were reported.



BAR-TAILED GODWIT *Limosa lapponica*. In most springs of the study period up to 50 birds were present in early May usually near the mouth of the Yeo, although in some years (for instance 1980 and 1988) the maximum count was well below this. A few birds are seen on autumn passage, but otherwise this species is quite uncommon in Clevedon Bay. As with Oystercatcher, this species is common on most British estuaries especially in winter but not on the Severn. During the study period the springs of 1984 and 1990 provided a dramatic exception to the norm. In these springs very large numbers were seen passing through the Estuary and some of these birds roosted in the study site. In 1984 the largest single count was 650 on 28 April but as birds were passing through over a period of four or five days probably more than 1500 birds used the site for roosting or feeding and many more passed through without stopping. The spring passage in 1990 was similar but with counts roughly a third of those in 1984. These flocks form part of a population of about 250,000 birds that winters in west Africa and breeds in northern Russia (see Smit and Wolff, 1981: 170-79); the wind conditions in 1984 and 1990 forced some of them to take a different course. [1868]



WHIMBREL *Numenius phaeopus*. A common passage migrant occurring in much larger numbers in spring than in autumn, and a few birds also occur in summer. This pattern of occurrences is similar to that on the rest of the Severn Estuary. Although this species is known as a 'May bird', in Clevedon Bay the highest counts are for the last week of April. Flocks often feed, and sometimes roost, inland and so some counts were probably on the low side. Numbers have not varied greatly during the decade except for the 1987 and 1988 springs when they were roughly twice the normal. The highest spring count was 205 on 30 Apr. 88, and the highest autumn count was 24 on 1 Aug. 90. [1868]

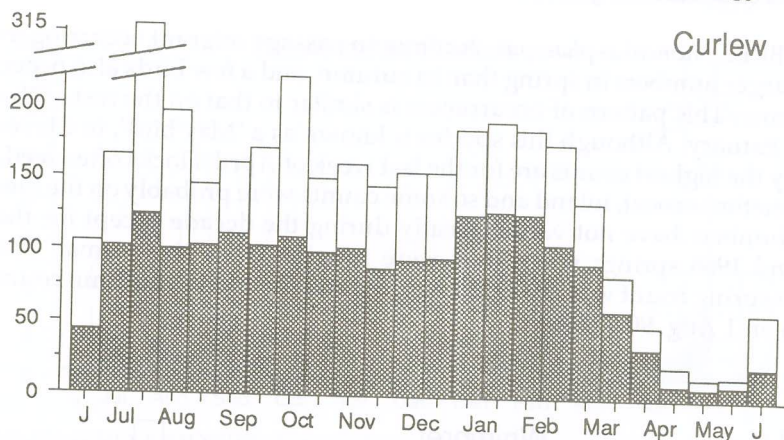


CURLEW *Numenius arquata*. A common wader at all times with 100+ present from mid July to late March and with a few summering birds. There are usually two distinct flocks in the study site: one with about 30 birds feeds around Blackstone Rocks and the adjacent fields, and the second with 70 to 120 birds frequents the Yeo Estuary area. Passage probably occurs but there are no obvious peaks in the counts although on two occasions a flock with over 300 birds was seen in late July. Flock sizes have increased steadily during the study period (see the table below which gives the year-on-year mid July to mid March averages).

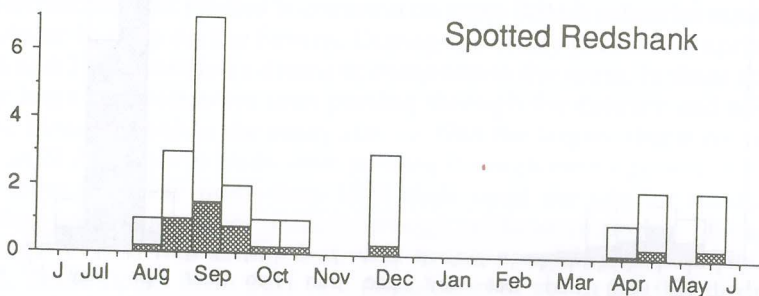
Non-breeding season Curlew averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
78	65	83	94	82	106	117	108	127	143

No breeding or attempts has occurred. A bird with a very distinctive Whimbrel-like call was present in the autumn and winter of 1981. [1868]



SPOTTED REDSHANK *Tringa erythropus*. A passage migrant, two or three being seen in most years. The only study period count over three was seven seen on 3 Sept. 81. Over the years there have been a few winter records of up to three birds in 1935, 1962, 1967, and 1982 (three on 12 Dec.).

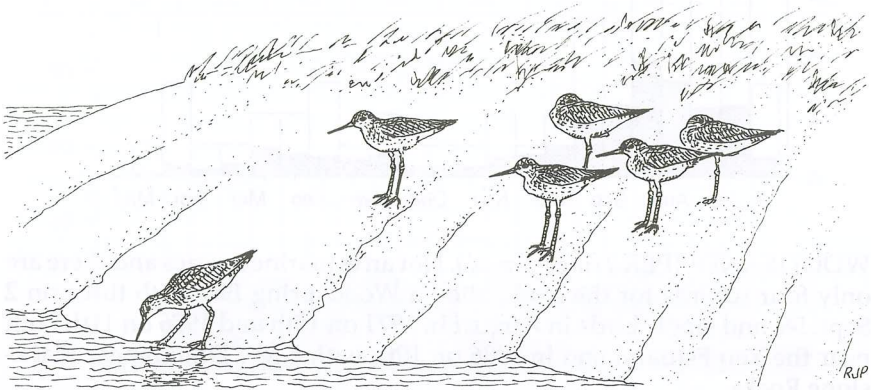
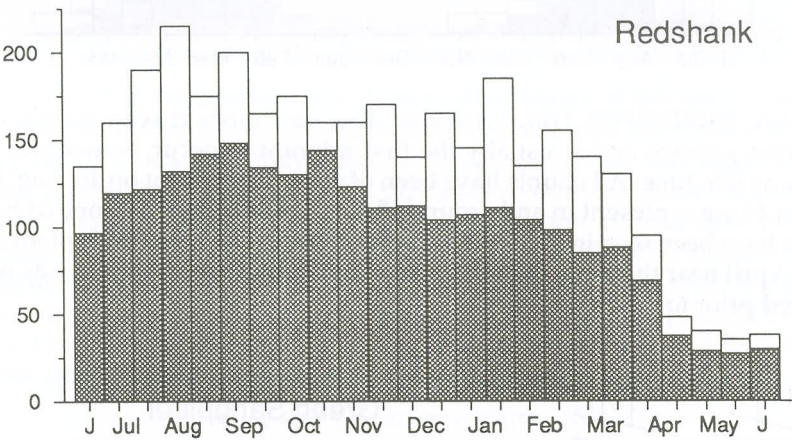


REDSHANK *Tringa totanus*. Common in Clevedon Bay, both breeding and wintering. Present all year, this is the only wader species seen by the author on every visit. Perhaps surprisingly this species does not seem to have been greatly affected by the changes to the study site or by the cold weather during the study period. Possibly birds have died only to be soon replaced by others from different places but there are no obvious gaps in the counts. On the other hand the extreme tidal range of the Severn ensures that some mud remains unfrozen even in the most severe conditions for part of the tide cycle. The situation here should be compared to that for the Lapwing, a species with which it often consorts; also to that on the east coast where very high mortality has been recorded during cold spells (for example in February 1991, pers. comm. N.A. Clark). Over the longer term there is some cause for concern as counts in the three to four hundred region were not uncommon between 1946 and 1968. Nevertheless there has been some increase during the study period as shown in the table below which gives the year-on-year mid June to mid March averages.

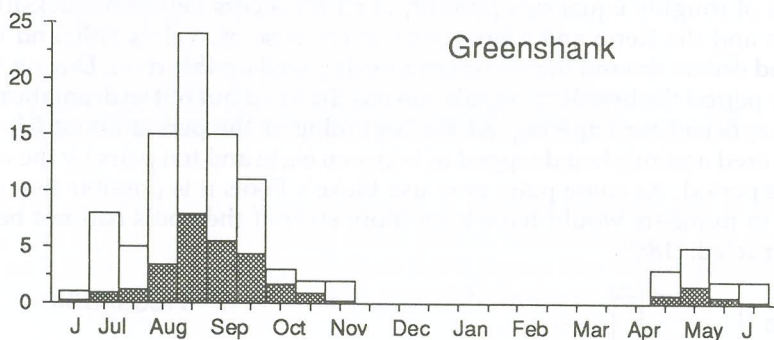
Non-breeding season Redshank averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
96	98	81	126	134	131	108	132	141	135

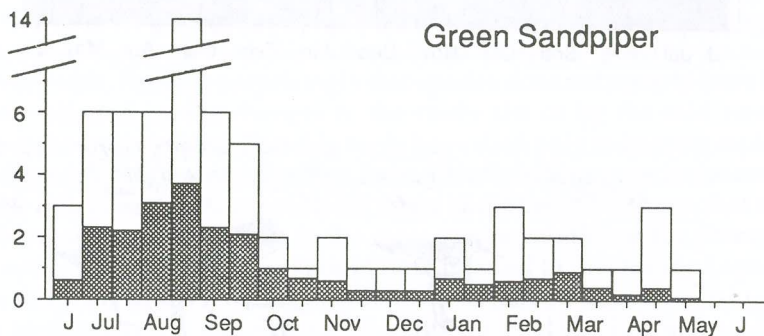
From mid June numbers increase to a peak in September and from then on there is a slow decline until mid March—presumably some birds leave very early for their breeding sites. As with Curlew there are usually two distinct flocks of roughly equal size present. The first occurs between Blackstone Rocks and the Kenn and often roosts at the base of Wain’s Hill, and the second occurs around the Yeo often roosting well up this river. During the study period the breeding population has declined but not so dramatically has happened for Lapwing. At the beginning of the period about fifteen pairs bred and this had dropped to between eight and ten pairs by the end of the period. As some pairs now use Blake’s Pools it is possible that the drop in numbers would have been more steep if the pools had not been constructed. [1868]



GREENSHANK *Tringa nebularia*. Regular on passage, with usually about five seen in spring and about 20 in autumn when many juveniles are present. Counts varied widely during the study period, the best years being 1981 and 1984 and the worst 1988; the largest single count was 24 on 30 Aug. 81. It is perhaps surprising that there are no winter records as this species does occur at this time of year in many places in south-west England and Ireland.

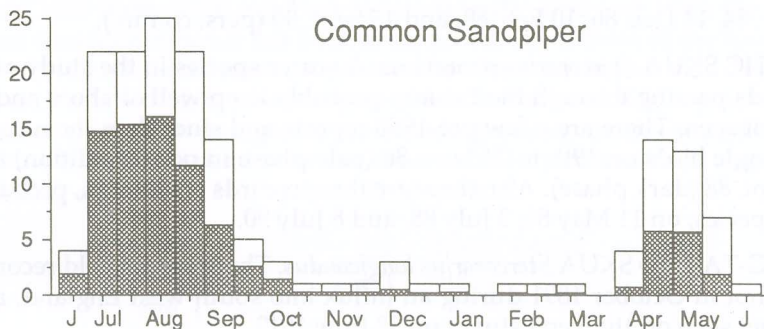


GREEN SANDPIPER *Tringa ochropus*. This sandpiper is seen mainly on autumn passage and is usually the first migrant to occur, sometimes as early as late June. All counts have been of six or less except on 16 Aug. 84 when 14 were present in and around Blake's Pools. Since 1985 one or two birds have been seen in each year on several occasions between September and April near the Yeo where it crosses Yeo Bank Farm (this site was not visited prior to 1985).



WOODSANDPIPER *Tringa glareola*. Not an estuarine species and there are only four records for the study site: in Woodspring Bay with three on 2 Sept. 56, and single birds in August in 1971 on 17th and 1976 on 11th both near the Yeo Estuary, and in 1986 on 10th with a few Dunlin near Blackstone Rocks.

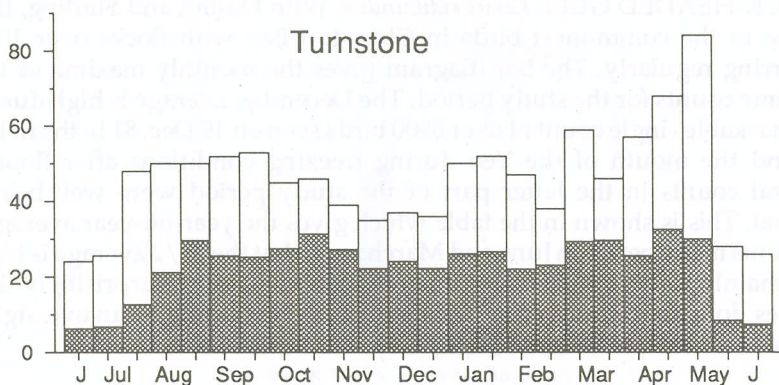
COMMON SANDPIPER *Actitis hypoleucos*. Common on passage, this sandpiper has occurred in every month but does not breed. Counts did not vary much from year to year during the nineteen-eighties and most birds were seen in July and August when 20 or more were regular. Birds usually occur on the Blind Yeo and Blackstone Rocks, near the mouth of the Kenn, along the Yeo up to Yeo Bank Farm, and around Blake's Pools; only rarely on the Estuary itself. Wintering birds occurred in four of the study years. [1868]



TURNSTONE *Arenaria interpres*. Almost all sightings of this species are on or near Blackstone Rocks. Occasionally they occur near the Yeo but if they stay in the study area they move to the Rocks after a few days. These waders often feed near Clevedon pier and beyond, and hence are sometimes missed in counts. Also they occasionally roost at these sites. Nevertheless counts were remarkably constant with about 25 birds present from August to April, with a few summering. The table below gives the year-on-year average counts for mid June to mid March. Some passage occurs but it is not obvious from the counts although on 1 May 89 a flock of 84 birds (the highest count) was seen near the mouth of the Yeo. [1868]

Non-breeding season Turnstone averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
17	15	12	21	23	24	36	31	22	22



GREY PHALAROPE *Phalaropus fulicarius*. Only one record this century: single bird seen near Wain's Hill with some Black-headed Gulls on 5 Dec. 54. [1868]

POMARINE SKUA *Stercorarius pomarinus*. Compared with the other skuas this species has a reasonable showing in Clevedon Bay. Five were shot in October and November 1879 during a major Estuary wide influx. Otherwise the twentieth century records are singles on 17 Nov. 63 (dead), 2 Dec. 84, 14 Dec. 86, 10 Feb. 89, and 15 Sept. 90 (pers. comm.).

ARCTIC SKUA *Stercorarius parasiticus*. A scarce species in the study area, as birds passing through the Estuary probably keep well offshore and so are not seen. There are a few pre-1980 reports and since then the records are single birds on 19th to 24 Nov. 86 (pale phase in poor condition) and 14 Sept. 88 (dark phase). Also there are three records of skua sp., probably this species, on 11 May 86, 3 July 88, and 8 July 90.

LONG-TAILED SKUA *Stercorarius longicaudus*. There are two old records: one shot in October 1891 during an influx into south-west England, and another seen off the Yeo Estuary on 23 June 1912.

GREAT SKUA *Stercorarius skua*. Even scarcer than Arctic, with only three records of single birds on 6 Sept. 70, 10 Sept. 78, and 24 Dec. 89.

MEDITERRANEAN GULL *Larus melanocephalus*. Possibly under recorded due to the large numbers of the commoner gulls present, nevertheless seven have been seen since 1966. The study period records are: single adults on 19 Oct. 83 and 17 Mar. 85, and unusually a first summer individual (i.e. less than three months old) was seen moving down the Estuary near the mouth of the Kenn on 22 June 86.

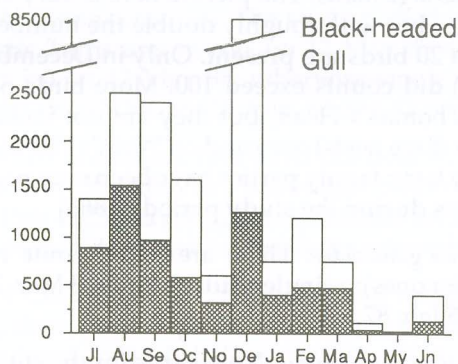
LITTLE GULL *Larus minutus*. Another seabird rarely seen in Clevedon Bay with only seven records of single sub-adults during the study period on 26 Feb. 84 (dead on tide line) and 15 Apr. 84, 23 Feb. 86, 8 Sept. 87 (two birds seen) and 18 Sept. 87, and 10th & 22 Sept. 89. [1868]

BLACK-HEADED GULL *Larus ridibundus*. With Dunlin and Starling, this is one of the commonest birds in Clevedon Bay with flocks over 1000 occurring regularly. The bar diagram gives the monthly maxima of the daytime counts for the study period. The December average is high due to a remarkable single count of over 8500 birds seen on 19 Dec. 81 in the fields around the mouth of the Yeo during freezing conditions after floods. Several counts in the latter part of the study period were well below normal. This is shown in the table which gives the year-on-year averages of counts made between June and March: note that the 81/2 average is high due mainly to the single count mentioned above. Most surprisingly this species does not occur on the 1868 list which must surely be an oversight, but see Palmer and Ballance (1968: 109).

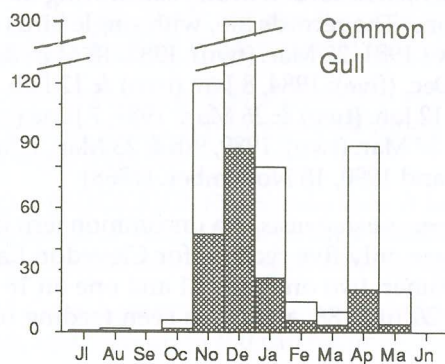
Non-breeding season Black-headed Gull averages, 1980 to 1990

80/1	81/2	82/3	83/4	84/5	85/6	86/7	87/8	88/9	89/90
590	1390	780	855	700	580	450	595	650	445

There are two roosts for this species in the study area. The first is on the water between Wain's Hill and Blackstone Rocks and regularly holds 650 birds from September to February. The other is at the mouth of the Yeo where 1350 birds were reported in late January 1982 and 1983, the only recent occasions when it has been counted. At dawn most of the roosting birds fly inland and so roost counts can often be much higher than daytime counts. No breeding has been reported but in 1988 and 1989 a pair in full plumage showed some signs of pre-breeding display on the inner Blake's Pools. A bird found dead near the Kenn on 18 July 85 had been ringed as a nestling at Zeeland, Holland, on 25 May 75.



COMMON GULL *Larus canus*. At most times of the year this is an uncommon species in the study site with only one or two birds seen on about one visit in five, although there are two exceptions. Between November and early January flocks of 100+ are commonly seen around the mouth of the Yeo particularly when it is cold, the highest count being 300 on 19 Dec. 81. Also in April and early May groups of immature birds occur regularly, the



highest count being 90 on 12 Apr. 87, when there is a regular spring migration through the Estuary (see Vernon, 1969). The bar diagram giving the average and maximum monthly counts shows these occurrences well. [1868]

LESSER BLACK-BACKED GULL *Larus fuscus*. Up to ten birds were normally seen on a visit and this did not change much during the year although the winter averages were slightly higher. No clear migration movements were recorded during the study period. The only flock over 50 birds was present in March 1990 when up to 175 were seen on fields close to the mouth of the Yeo behind Woodspring Bay after extensive flooding. No breeding has been reported. A bird ringed as a two year old at Weston-super-Mare on 13 June 67 was found dead on the bank of the Yeo on 29 June 80. [1868]

HERRING GULL *Larus argentatus*. The picture here is very similar to that for the previous species but with roughly double the numbers occurring, that is normally about 20 birds are present. Only in December 1980 (150) and March 1990 (250) did counts exceed 100. More birds occur well off shore, often near St. Thomas's Head, but they are not included in these totals. Breeding (up to three nests) occurred on Wain's Hill sea cliff in 1978 and 1980, and possibly later; family parties have been seen near Blackstone Rocks in most summers during the study period. [1868]

ICELAND GULL *Larus glaucoides*. There are two definite records (with some unspecified earlier ones): a single adult on 2nd & 3 Mar. 74, and single second year bird on 25 Jan. 87.

GLAUCOUS GULL *Larus hyperboreus*. No records for the study period but there are three earlier ones: single birds on 12 Dec. 57 (dead), and 27 Feb. 74 and 20 Mar. 74.

GREAT BLACK-BACKED GULL *Larus marinus*. One or two birds are regularly seen summer and winter. No big flocks have occurred, the largest being seven on 3 Feb. 85. [1868]

KITTIWAKE *Rissa tridactyla*. Recorded in all years during the study period usually in gale conditions. The records are, with single birds unless stated otherwise: 1980, 16 Nov.; 1981, 22 Mar. (two); 1982, 18 Mar. & 21 Nov. (30); 1983, 9 Jan. (six) & 26 Dec. (five); 1984, 8 Jan. (two) & 12 Feb. (dead); 1985, 20 Apr. & 5 May; 1986, 12 Jan. (two) & 26 Mar.; 1987, 7 June (two); 1988, 4th (15) & 6 Jan., and 6th & 27 Mar. (two); 1989, 9th & 23 Mar., 8 July (two), and 17th & 24 Dec. (eight); and 1990, 18 November. [1868]

SANDWICH TERN *Sterna sandvicensis*. An uncommon tern in the Estuary as a whole, and there are only five records for Clevedon Bay during the study period, all in summer: two on 9 July 81 and one on 16 Aug. 81, two on 28 June 87, two on 26 June 88, and three seen feeding off Blackstone Rocks on 9 July 89.

ROSEATE TERN *Sterna dougallii*. Two Clevedon Bay records: single birds in April 1897 and on 23 May 82 on Blackstone Rocks. The latter bird was unusual for the UK in spring being an immature still showing some brown crescent shaped markings on the mantle, and relatively short tail streamers; in all other respects it was similar to a typical adult.

COMMON TERN *Sterna hirundo*. Common and Arctic Terns are irregular migrants in the study area with usually about three records a year of one or two birds occurring mid-April to mid-May and July to September. Higher counts of Common Terns for the study period were: 26 on 19 Aug. 89, and 9 on 2 May 90 with 24 on 3rd seen during a major Estuary wide influx (see the *Avon Bird Report* for 1990). For 'Commic' terns (assumed mostly Common Terns) the higher counts were: ten on 28 Sept. 80, six on 29 Aug. 82, four on 14 Aug. 86, ten on 30 Apr. 88, and 48 on 2 May 90.

ARCTIC TERN *Sterna paradisaea*. The study period records of specifically identified Arctic Terns are: twelve on 12 May 89 and nine (roosting on Blackstone Rocks) on 13 May 90, otherwise single birds on 14 Sept. 80, 1 Oct. 84, 8 Aug. 86, 10 Oct. 88, 23 Aug. 89 and 17 Sept. 89. [1868]

LITTLE TERN *Sterna albifrons*. Five times this delicate tern was seen during the study period in Clevedon Bay with single birds on 9 Sept. 82 (killed by a Peregrine), 11th & 25 May 86, 25 Aug. 88, and on 2 May 90 when seven were present during the major tern passage referred to above.

BLACK TERN *Chlidonias niger*. An occasional migrant, the study period records being: three on 23 Sept. 80; one on 11 Sept. 83; one on 22 Aug. 86 & six on 25th, and one on 9th & 10 Sept. 86; 20 on 28 Apr. 87 and single birds on 9th & 11 Sept. 87; and 24 on 2 May 90 with the *Sterna* terns mentioned above. [1868]

WHITE-WINGED BLACK TERN *Chlidonias leucopterus*. One record: single juvenile seen flying up and down near the mouth of the Yeo on 19 Aug. 79.

GUILLEMOT *Uria aalge*. A rare bird in the study site; the definite records are for April 1961 (a long dead bird), 1 Oct. 74 (one), 8 Oct. 78 (two), and a dead bird on 27 Oct. 82. There are also two auk records which probably refer to this species: three on 17 Mar. 69 and four on 23 Nov. 86. [1868]

RAZORBILL *Alca torda*. Equally as uncommon as Guillemot with records for August 1957 (one dead), September 1967 (one), a dead bird on 12 Feb. 84, and one in flight 4 Jan. 88.

FERAL PIGEON (ROCK DOVE) *Columba livia*. A familiar species in small numbers at all times of year, although on a number of occasions several hundred racing pigeons have been seen moving up the Estuary.

STOCK DOVE *Columba oenas*. Not often recorded except when a field has been ploughed, and then up to 100 can occur.

WOODPIGEON *Columba palumbus*. A common species which nests on the farmland behind the sea wall. No detailed counts have been made but during the study period usually up to 30 were present; as with the previous species, more have occurred when a field had been ploughed or had stubble after harvest. [1868]

COLLARED DOVE *Streptopelia decaocto*. Normally seen only in the Wain's Hill area (with up to 16), but some autumn dispersal occurs when small groups have been noted around the Yeo.

TURTLE DOVE *Streptopelia turtur*. An irregular passage migrant, the records for the study period being: 1981, one on 20 Sept.; 1983, single birds on 2nd & 12 June; 1985, four on 26 May; 1986, three on 14 May; 1987, six on 9 May; and 1988, two on 30 April. [1868]

[RING-NECKED PARAKEET *Psittacula krameri*. Single birds noted in September 1982 and January 1983.]

[COCKATIEL *Nymphicus hollandicus*. Up to three escapes seen in summer 1990.]

CUCKOO *Cuculus canorus*. Two or three were seen, or more usually heard singing, every year of the study period in May and June, and juveniles have been noted in late July and August. A number of birds were observed in or near reed beds, so it is likely that one of the parasitised species was Reed Warbler. [1868]

BARN OWL *Tyto alba*. In line with the national decline there have been no definite records from the study site for fifteen years, but one was seen in Clevedon itself on 18 July 84, and a local farmer reported hearing a 'screech owl' sometime in autumn 1982 near the Yeo Estuary. Some nest boxes have been erected in farm barns not far from the sea wall, but as yet they have not been used. The species was recorded not uncommonly in the study site up to 1976 (pers. comm.). [1868]

LITTLE OWL *Athene noctua*. During the study period, noted along the hedgerows and in the orchard near the mouth of the Kenn in all months of the year, usually singly although sightings at two or three locations have been recorded on the same day. It breeds locally, with juveniles seen in 1982, 1985 and 1986, and in May 1990 a nest was discovered in a hole under the concrete floor of an open barn.

TAWNY OWL *Strix aluco*. No estimate of numbers for the study site was available, but two or three were regularly heard at night from the outskirts of Clevedon and around the farms near the Yeo. A grey morph bird was seen in broad daylight in a barn on 26 Dec. 83. [1868]

LONG-EARED OWL *Asio otus*. The only definite records are as follows: one on 15 Dec. 74, two near Blake's Pools 10th to 13 Mar. 88, and two on

15 Dec. 90 and three on 20th also near Blake's Pools. Two owls seen at this site in January 1989 were probably this species (pers. comm.). [1868]

SHORT-EARED OWL *Asio flammeus*. One to three occur regularly mid September to late April, but usually do not stay long. There is very little uncultivated rough pasture in the study site to harbour the small rodents that form the owl's main food. The numbers reported in each month of the ten year study period were: September, 1; October, 8; November, 10; December and January, 7; February and March, 4; and April, 2. [1868]

NIGHTJAR *Caprimulgus europaeus*. This species appears on the 1868 list. There are no recent records, but see Appendix 2. [1868]

SWIFT *Apus apus*. Occurs in small numbers, usually less than ten birds, late April to mid August. Only small migration flocks were seen during the study period, the largest being 48 on 1 May 83 and 60 on 4 June 89. [1868]

KINGFISHER *Alcedo atthis*. Noted occasionally in all months except April and May on the small rivers, at Blake's Pools, and occasionally on the Estuary. The maximum count was three, and over half of all records were for August and September. [1868]

HOOPOE *Upupa epops*. The Clevedon Mercury has two reports of single birds seen in the town's gardens on 6 Nov.77 (a very late date) and 26 Apr.83. Also one was seen behind the sea wall on 19 Aug.86. [1868]

WRYNECK *Jynx torquilla*. The only reference to this species in the study site is on the 1868 list; the published record for September 1980 should refer to Portishead. See Appendix 2. [1868]

GREEN WOODPECKER *Picus viridis*. One or two birds have been reported in all months, but less regularly in the latter part of the decade. They are sometimes seen probing for insects on the sea wall itself. The species breeds locally and family parties were seen in late summer, the largest five in July 1987. [1868]

GREAT SPOTTED WOODPECKER *Dendrocopos major*. In December 1978 one was seen in a bush behind the sea wall. There have also been five records of migrating birds seen during the study period from Wain's Hill: single birds on 5 Sept. 82 and 20 Oct. 85, and in 1989 two on 26 Apr., one on 7 Sept., and two on 15 October. [1868]

LESSER SPOTTED WOODPECKER *Dendrocopos minor*. One record: single bird on an elm near the mouth of the Kenn on 13 Feb. 72. A pair bred at Kingston Seymour, just south of the study site, in 1988.

WOODLARK *Lullula arborea*. In the study site this species is mainly an unusual migrant, although the bird seen on 27 May 79 was singing over a field near the mouth of the Kenn. The remaining records are: single birds on 19 Nov. 67, 27 Oct. 73, 23 Oct. 83, and 12 Nov. 89. [1868]

SKYLARK *Alauda arvensis*. This is one of the most characteristic birds of the area occurring as a breeding, migratory, and wintering species. It is most common in winter when between 40 and 100 birds are normally present; counts did not vary greatly from one year to another during the nineteen-eighties. Noted on most visits but it becomes rather secretive in late summer. The largest counts for the study period were: 150 in October 1980, 110 in January 1984, 180 in January and 120 in February 1987. [1868]

SAND MARTIN *Riparia riparia*. One or two are noted on passage in most years, although the species does not breed in or near the study site. Sometimes a few are seen hawking insects over Blake's Pools but the largest count was ten on 23 Sept. 80 before the pools were constructed. [1868]

SWALLOW *Hirundo rustica*. A common passage and summer visitor with usually five to fifty birds present. No breeding has been noted in the study site but it breeds around the farms south east of the site. Some larger flocks (100+) were noted on autumn passage, the largest 200 on 17 Sept. 89. As with the next species migration can occur to both the south-west and the north-east in both seasons, the direction usually depending on the prevailing winds. Also there were three November records for the study period: single birds on 14th in 1985, on 5th in 1986, with three on 4th in 1987. [1868]

HOUSE MARTIN *Delichon urbica*. There is a generally similar picture here to that for the previous species although counts are usually lower. Normally about 20 pairs breed in the Clevedon housing estate bordering the study site. Sometimes large flocks were noted migrating north-east in late autumn, these including 700 on 30 Sept. 87, 450 on 3 Oct. 87, and 350 on 18 Sept. 88. Also in the past fifteen years there have been two November records: a flock of nine birds in 1976 (on 17th, the author's first visit to Clevedon!), and one in 1989 (on 22nd). [1868]

RICHARD'S PIPIT *Anthus novaeseelandiae*. There have been a surprising number of sightings of this rare pipit in the study site, mostly near to the sea wall itself. The records are: two in May 1892, two in October and one in November 1968 (several dates), one on 12 Jan. 69, one on 22nd & 30 Nov. 70, one on 15 Dec. 74, and one on 26 Oct. 90 (pers. comm.) near Blackstone Rocks.

TAWNY PIPIT *Anthus campestris*. One record: single bird near Yeo Estuary on 29 July 72.

TREE PIPIT *Anthus trivialis*. An uncommon, but possibly overlooked, passage species. The study period records are: 1987, two on 12 Apr.; 1988, two on 24 Apr., and 7th & 8 Sept.; and 1989, one on 5 Aug., two on 1st & one on 7th Sept. with four on 15 October. [1868]

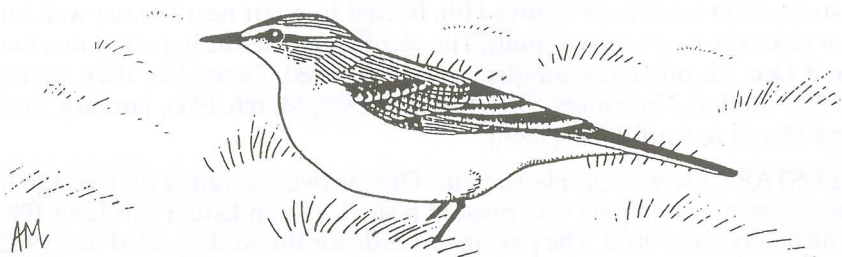
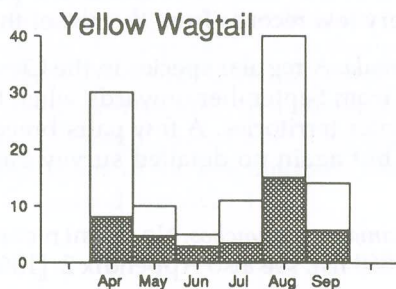
MEADOW PIPIT *Anthus pratensis*. This species occurs commonly at all seasons, especially on autumn migration. Breeding display and juvenile

birds have been noted in most years of the study period. Counts usually range between five and 30 birds but there has been a notable drop over the decade. The largest count for the period was 80 on 6 Apr. 86. [1868]

ROCK PIPIT *Anthus petrosus*. Noted most often at high tide when these pipits can be seen flitting about on the sea wall. Up to ten occur in all months and one or two pairs usually breed near the base of Wain's Hill. Before the Blackstone Rocks rubbish tip appeared a pair also bred there. In the autumn and winter of 1984/85 a very pale (leucistic) individual was noted regularly, having fledged from one of the local nests. [1868]

WATER PIPIT *Anthus spinoletta*. There are three records for the study period: two on 26 May 86 (an unusually late date), one on 20th & 22 Mar. 87, and two on 12 Nov. 89.

YELLOW WAGTAIL *Motacilla flava*. The bar diagram gives the average and maximum monthly counts for the study period; during this time the first and last dates were 10 April and 25 September, respectively. Counts varied considerably from one year to another, the best years during the study period were 1981, 1989 and 1990 and the maximum count (42 birds) occurred on 21 Aug. 89. In most years one or two pairs bred in the fields directly behind the sea wall, juveniles being noted usually in early to mid July. Birds of the 'blue-headed' continental race (*M.f.flava*) were seen on 18 Apr. 76, and on 18 Apr. & 14 June 81. [1868]



GREY WAGTAIL *Motacilla cinerea*. Not common in the study site but occurs on the minor rivers and sometimes around Blake's Pools, never more than three birds. It is also an autumn migrant in small numbers during September. A pair bred near Yeo Bank Farm in 1989. [1868]

PIED WAGTAIL *Motacilla alba*. Regular at all times but it does not breed. Usually up to ten birds are seen but larger flocks occur on passage, the highest count for the site being 95 in November 1976. A few 'White Wagtails' (*M.a.alba*) pass through in April, usually being seen from the sea wall. The records for the study period are: 1984, three on 15th; 1985, one on 6th; 1986, six on 24th; 1987, twelve (the maximum count) on 19th; 1988, seven on 17th; 1989, three on 16th; and 1990, one on 12th & two on 22nd. This subspecies is occasionally also noted on autumn passage and mainly seen from Wain's Hill, the records being: 14 on 23 Oct. 83 and five on 17 Oct. 88. [1868]

DIPPER *Cinclus cinclus*. One record: single bird on 2 Mar. 80. Most unusually this bird was seen feeding on the Estuary mud between Wain's Hill and Blackstone Rocks.

WREN *Troglodytes troglodytes*. A regular breeding and wintering species, but no detailed information is available. [1868]

DUNNOCK *Prunella modularis*. This is another species for which few details are available. It breeds on Wain's Hill and is present at this site all year, but there are very few records from the rest of the study area. [1868]

ROBIN *Erithacus rubecula*. A regular species in the Clevedon Bay area, it is most often recorded from September onwards when the birds are taking up their autumn/winter territories. A few pairs breed in the hedgerows and on Wain's Hill, but again no detailed survey has been undertaken. [1868]

NIGHTINGALE *Luscinia megarhynchos*. No recent records for the study site but it occurs on the 1868 list, see also Appendix 2. [1868]

BLUETHROAT *Luscinia svecica*. One record: a single bird in a garden on the edge of the study site on 19th & 20 Oct. 85.

BLACK REDSTART *Phoenicurus ochruros*. An uncommon winter visitor usually seen on or near Wain's Hill. It used to occur near the sea wall but not since the new one was built. The records for the study period are: two on 8 Dec. 84, otherwise singles in October 1980, December 1981, March 1983, March & November 1984, January 1985, March 1986, January 1987, and March & April 1988. [1868]

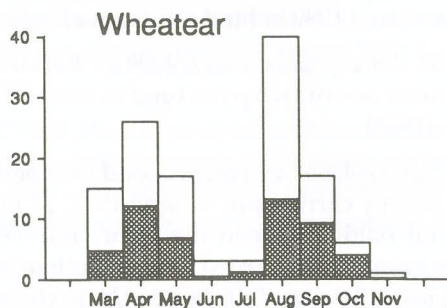
REDSTART *Phoenicurus phoenicurus*. One or two are noted on passage in most years. Also a pair was present near the Kenn Estuary in June 1980 which may have bred. The passage records for the study period are: 1982, two in August; 1986, singles on 24 Apr. & 8 May with three in August and

two on 8 Sept.; 1987, one on 12 Sept.; 1988, singles in May, June and on 29 Oct. (a late date); 1989, two on 25 Apr. & one on 26 Sept.; 1990, three in April, one in August and two in September. [1868]

WHINCHAT *Saxicola rubetra*. Up to ten occur on both spring and autumn passage; the species does not breed now but it did in the nineteen-fifties. The earliest and latest dates during the study period were 24 April and 28 October, respectively, both in 1988. Counts usually range from one to three, two larger groups were seen in autumn 1989 with six on 31 Aug. and twelve on 22 September. [1868]

STONECHAT *Saxicola torquata*. During the nineteen-eighties this has been an irregular wintering and passage species; it was more common in the previous decade and there are some breeding records for the period 1920 to 1950. The generally mild weather in the last three years of the study period clearly helped to produce a recovery, with up to three birds seen regularly in the autumn of 1990. The records for the study period are: 1980, two in October and one in December; 1981, singles in February, March, August and September; 1982, one on 7 Feb.; 1984, singles in March and December; 1985, one on 27 Oct.; 1986, one on 26 Apr.; 1988, one on 13 Mar.; 1989, a family party of four on 4 Oct. with singles in February, June, September and December; and 1990, two on 1 January. [1868]

WHEATEAR *Oenanthe oenanthe*. This is usually the earliest summer visitor in Clevedon Bay, and it is always an event to see the first bird, usually a male in pristine breeding plumage. The bar diagram gives the average and maximum counts for the study period. Over this period yearly counts increased by about 20%. The first and last dates were 9 March and 1 November, respectively, both in 1987, and the largest count—40 birds—was for 20 Aug. 86. Although pairs have been seen in early June no breeding has occurred. Some of the late migrants, larger than the normal birds, are probably Greenland breeders. [1868]



RING OUZEL *Turdus torquatus*. An occasional migrant at Clevedon with three sightings of single birds in the study period on 18 Oct. 81, 9 Apr. 83, and 29 Apr. 90. The last bird showed some albinism in the head and neck. [1868]

BLACKBIRD *Turdus merula*. At all times a commonly occurring species in small numbers and in all parts of the study site away from water, although no large flocks have been noted. It is also a regular breeder. Unusually during severe frost conditions in February 1986 at least 20 were seen foraging on the exposed mud of the Estuary at low tide. [1868]

FIELDFARE *Turdus pilaris*. A common winter visitor. A typical mid winter count was ten birds whilst average counts for late November and mid February were 300 and 25, respectively. The late autumn birds usually stay until the berry crop is exhausted. In three of the study years very large flocks were reported with 2000 in December 1981, at least 3000 in December 1985, and 1500 in late November 1987, but they did not stay long. [1868]

SONG THRUSH *Turdus philomelos*. Regular in small numbers on Wain's Hill, otherwise not often seen except in late autumn when a few birds occur usually near the Yeo Estuary. These are most likely to be migrants and they appear either slightly before or with the first Redwing flocks; in the latter case numbers are difficult to ascertain. Counts made when no Redwings were present include 15 in October 1980, eight in October 1987, and six in November 1988. [1868]

REDWING *Turdus iliacus*. Records are similar to those for Fieldfare except that numbers are generally lower. The highest counts for the study period were: 1981, 200 in November; 1985, 1200 in December; and 1988, 120 in February and 250 in November. [1868]

MISTLE THRUSH *Turdus viscivorus*. Occurs on Wain's Hill in small numbers and it breeds here; otherwise there have been very few sightings of this thrush in the study site and none since February 1985. [1868]

GRASSHOPPER WARBLER *Locustella naevia*. During the study period noted only on spring passage (late April to mid May) as follows: two on Wain's Hill in 1979, singles near the Yeo Estuary in 1982, 1983 and 1987, with one in 1988 and two 1990 behind the sea wall near the Kenn. [1868]

SEDGE WARBLER *Acrocephalus schoenobaenus*. Reported mainly around the Yeo Estuary where one or two pairs bred in most years and a few birds occur on passage. [1868]

REED WARBLER *Acrocephalus scirpaceus*. Good numbers breed around the Yeo Estuary. In a survey carried out in June 1987, 21 breeding pairs were noted in the coastal fields between the Kenn and Yeo Estuaries up to Tutshill's Ear. Some nests were in reed beds but others were in hedgerows near ditches with just a few reeds present. Up to the year of this survey Blake's Pools were not used for breeding, but since that time a good proportion of the birds have moved to the reeds around these pools and there were at least six nests in 1990. As Cuckoos are sometimes seen very near these breeding sites it is likely that some of the warblers' nests are parasitised. [1868]

LESSER WHITETHROAT *Sylvia curruca*. Breeds regularly in small numbers in the hedgerows behind the sea wall, but it is only a migrant on Wain's Hill. Sightings have doubled during the study period. [1868]

WHITETHROAT *Sylvia communis*. Recorded similarly to the previous species with a slight increase during the study period. [1868]

GARDEN WARBLER *Sylvia borin*. A passage migrant in small numbers with a few exceptionally early or late sightings during the study period: two at Blake's Pools on 5 Apr. 84 and two on 3 Oct. 84, and one near the Kenn on 26 Oct. 88.

BLACKCAP *Sylvia atricapilla*. Occurs in small numbers as a migrant and a winter visitor to gardens near Wain's Hill. [1868]

WOOD WARBLER *Phylloscopus sibilatrix*. On 13 May 84 a migrant was seen near Blake's Pools, the only study site record during the nineteen-eighties. [1868]

CHIFFCHAFF *Phylloscopus collybita*. A common warbler recorded in all months during the study period except February. Pairs have bred, small groups (up to 16) were seen regularly on passage, and wintering birds occurred in the Wain's Hill area, and near Blake's Pools in the 1989/90 winter. [1868]

WILLOW WARBLER *Phylloscopus trochilus*. A regular passage migrant which probably does not breed in the study site. No large groups have been recorded. Some migration is noted at Wain's Hill in autumn. [1868]

GOLDCREST *Regulus regulus*. Most often seen in the evergreen trees on Wain's Hill, where it sometimes breeds. Occasionally in autumn one or two also occur in the hedgerows near the Kenn and Yeo Estuaries. [1868]

FIRECREST *Regulus ignicapillus*. A male bird was seen on 7 Apr. 80 on a hawthorn bush near the Yeo Estuary. All other records are from Wain's Hill: one on 25th & 29 Sept. 89; and in 1990, one on 27th & two on 28 Sept., and one on 29 October.

SPOTTED FLYCATCHER *Muscicapa striata*. An uncommon species in the Clevedon Bay area with only five records in the study period of single birds in August 1983, May 1984 and 1985, and in September 1989 when two birds were present on Wain's Hill on 7th, one remaining until 29th. [1868]

PIED FLYCATCHER *Ficedula hypoleuca*. Single birds have been noted on Wain's Hill on 12 Apr. 82, 5 May 85, 11 June 86, and 7 Sept. 89. There are a few earlier records.

LONG-TAILED TIT *Aegithalos caudatus*. Small groups occur in the hedgerows and on Wain's Hill outside the breeding season. On 20 Mar. 90 two birds seen on the sea wall near the Yeo were probably migrants. [1868]

MARSH TIT *Parus palustris*. One study site record: single bird on 16 Jan. 72 seen in an elm tree near the mouth of the Kenn. [1868]

WILLOW TIT *Parus montanus*. There are some old records (for instance, single birds 'obtained' in August 1900, September 1903 and June 1904, skins now in Liverpool Museum), otherwise one was seen on Wain's Hill on 4 Apr. 71 and 11 Oct. 90.

COAL TIT *Parus ater*. Occurs on Wain's Hill and very occasionally in the hedgerows behind the sea wall. During a migration watch at Wain's Hill on 20 Oct. 85 four birds were seen to come in off the sea from the west! [1868]

BLUE TIT *Parus caeruleus*. A common species at all times and in all landward parts of the study site, the largest count during the study period being 40 in August 1982. [1868]

GREAT TIT *Parus major*. A similar picture here to that for the previous species although numbers are generally much lower. In June 1982 a pair bred successfully in a hole in the jib of a large crane being used to construct the new sea wall. [1868]

NUTHATCH *Sitta europaea*. Not recorded during the study period even on Wain's Hill, a suitable habitat, but it appears on the 1868 list. [1868]

TREECREEPER *Certhia familiaris*. Occasionally seen during the study period on Wain's Hill and feeding along the hedgerows near the Yeo. [1868]

GOLDEN ORIOLE *Oriolus oriolus*. There is one record of a male seen from the sea wall path on 4 May 86.

RED-BACKED SHRIKE *Lanius collurio*. Previously not uncommon on passage, but the last two sightings were in a sea wall hedge on 5 June 60 and on 25 Apr. 76 when two were present. [1868]

GREAT GREY SHRIKE *Lanius excubitor*. There have been four records of this shrike in the past fifty years: single birds on 12 Oct. 52, 28 Oct. 79, 6 Mar. 83, and 26 Oct. 88 (pers. comm.).

JAY *Garrulus glandarius*. The only records for the study site are from Wain's Hill, where one or two occur fairly regularly and at least six were present in December 1981 and November 1983. [1868]

MAGPIE *Pica pica*. In the Clevedon Bay area, as elsewhere, this is a common and widely dispersed species with flocks of up to 15 occurring at times. Nests have been noted near both the Kenn and Yeo Estuaries. [1868]

JACKDAW *Corvus monedula*. Occurs regularly in small groups (ten or less) with the other corvids. Also, in most years during October quite large flocks were seen moving south west, their flight path following the sea wall unlike that of most other migrants at this time of year. The main counts

were: in 1982, 175 on 24th; in 1985, 350 on 12th with 100 a week later, and smaller groups were noted in 1986, 1988 and 1990. [1868]

ROOK *Corvus frugilegus*. Most often seen in company with other corvids, Wood pigeons and Stock Doves when a coastal field has been ploughed, and then up to 60 can occur. There is a rookery near Kingston Seymour just south of the study site which held 193 nests in 1985. [1868]

CARRION CROW *Corvus corone*. A very common species occurring at all times and in all parts of the study site including often on the Estuary mud. Flocks of 200 are regular in autumn. [1868]

RAVEN *Corvus corax*. After a gap of over thirty years the species reappeared in 1985, when one was seen in flight near the Yeo Estuary on 22 February. The remaining records are two on 22 Mar. 87, and one on 13th & two on 20 Mar. 88. A dead juvenile was picked up from the tide line on 6 July 86. The nearest known nest that year was on Steep Holm. [1868]

STARLING *Sturnus vulgaris*. One of the three or so most common species in Clevedon Bay occurring in all parts and at all times; also large numbers are recorded during migration watches at Wain's Hill in October. The largest flocks noted during the study period were: 1000 in November and December 1983; 2000 in February, 1200 in June, 2800 in October, and 1000 in December 1984; 2000 in March 1985; 1200 in February, 1000 in May and October 1988; and 800 in May 1990. The summer counts refer to post-breeding flocks consisting mainly of juveniles. Before its repair a large roost used to form on the outer part of the old Clevedon pier. [1868]

HOUSE SPARROW *Passer domesticus*. Regular on the outskirts of Clevedon bordering the study site, otherwise not often seen. [1868]

TREE SPARROW *Passer montanus*. The only records for the nineteen-eighties within the study site are: four on 24 Oct. 82 and five on 28 Oct. 83 (migrants), and single birds in September 1987 and May 1988 seen between Kingston Seymour and Yeo Estuary. This species was commoner in the past: for instance three pairs bred in the orchard near the mouth of the Kenn in 1966 and there was a reasonable number of sight records up to 1975.

CHAFFINCH *Fringilla coelebs*. A common breeder and winter visitor. Also very large migration flocks are seen from Wain's Hill in October. From here, most flocks either head south west over the Estuary towards Sand Point, or south towards Crook Peak on the Mendips, rather than following the sea wall (see also Lack (1957) and Sainsbury (1972)). The main counts for the study period are tabulated below and were all made during migration watches at Wain's Hill. Note that in 1981 most birds were flying north east! It should be emphasised that migration watches are usually undertaken on only two mornings in October and so the counts below can only be an indication of the numbers of birds moving each autumn. [1868]

October migration watch Chaffinch counts, Wain's Hill, 1980 to 1989

1980	1000 on 26th	1985	280 on 20th
1981	850 on 17th (moving NE)	1986	1100 on 26th & 910 on 28/29th
1982	1320 on 24th	1987	2530 on 18th
1983	435 on 23rd	1988	220 on 22nd
1984	940 on 13th and 590 on 28th	1989	2840 on 15th & 270 on 4 Nov.

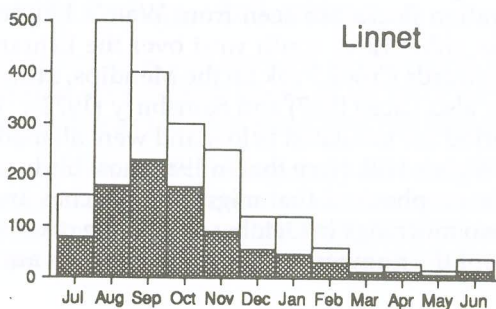
BRAMBLING *Fringilla montifringilla*. A few (usually up to 20) were noted on migration watches with Chaffinches. Otherwise about 15 spent the 1983/4 winter in the hedgerows behind the sea wall, and 40 were present in February with 15 in March 1987. [1868]

GREENFINCH *Carduelis chloris*. Regular in small numbers although some large flocks, both foraging and migrating, have been reported. It breeds on Wain's Hill and near the Kenn. Foraging flocks have included 120 in August 1986, 90 in February 1987, and 300 (in exceptionally hot weather) in August 1990. Migrating flocks were noted with the other finches during watches at Wain's Hill, the largest counts being 570 on 24 Oct. 82, 140 on 23 Oct. 83, and 290 on 15 Oct. 89. [1868]

GOLDFINCH *Carduelis carduelis*. A similar picture here to that for the previous species but with lower numbers. The largest counts in the study period were: 80 in September 1985, 150 in August with 60 migrating south west in October 1989, and 120 moving north east in misty conditions and keeping very low, less than a metre above the ground, on 22 Apr. 90. [1868]

SISKIN *Carduelis spinus*. Mostly noted from Wain's Hill during migration watches when up to 27 (in 1985) have been seen in late October. Otherwise the only large count was 25 on 15 Feb. 86 during cold weather.

LINNET *Carduelis cannabina*. By far the commonest finch occurring regularly in Clevedon Bay. Small numbers breed, but very few are noted on migration watches. The bar diagram gives the average and maximum monthly counts for the study period. The largest count (500) occurred in August 1980. Although counts have varied widely during the period there was no discernable trend. [1868]



TWITE *Carduelis flavirostris*. Small numbers have occurred mainly during cold winters; since 1987 only one bird has been seen, a migrant in October 1988. The maximum winter counts for the study period were: eight in 1981/2, 26 in 1983/4, 16 in 1984/5, eight in 1985/6, and four in 1986/7. The largest ever count was 32 in December 1978.

REDPOLL *Carduelis flammea*. Seen mainly on migration although a few wandering individuals have been noted; the largest flock recorded was 55 on 8 Oct.71. The main study period counts were: 15 in October 1980, 10 in October 1985, four in January 1987, and six in October 1989. [1868]

CROSSBILL *Loxia curvirostra*. No recent records for the study site but it occurs on the 1868 list. See also Appendix 2. [1868]

BULLFINCH *Pyrrhula pyrrhula*. A uncommon finch in the Clevedon Bay area; most reports (up to four birds) are from the hedgerows near the Yeo. [1868]

HAWFINCH *Coccothraustes coccothraustes*. There is only one recent record of a single bird at Wain's Hill on 27 Oct. 88. [1868]

LAPLAND BUNTING *Calcarius lapponicus*. On about ten occasions single birds have been seen during the winter months, but they have not stayed long. The study period records are for November 1983 (13th), October & November 1984, and January & October 1987.

SNOW BUNTING *Plectrophenax nivalis*. A winter visitor usually staying a week or so. The largest count was a remarkable 56 on 17 Nov. 68. The study period records are: 1981, one in February and four in November; 1982 and 1983, one in each November; 1984, one in March; 1985, single birds in February, November and December; 1986, one in March, seven in November and one in December; 1987, two in January and one in December; 1988, two in October; 1989, one in January, nine (possibly eleven) in November and one in December. [1868]

YELLOWHAMMER *Emberiza citrinella*. Perhaps surprisingly this is now a very uncommon bird in the Clevedon Bay area although this was not so forty years ago. There are seven records for the study period: single birds in June 1982, October 1983, and March & August 1984, with two in April 1985, four or five on migration in October 1987 (18th), and two in March 1990. [1868]

CIRL BUNTING *Emberiza cirius*. Forty years ago this was a regular species in small numbers which probably bred in some years, but no more. The last breeding season record was in 1964 and the last sighting was in February 1977. [1868]

REED BUNTING *Emberiza schoeniclus*. Occurs in small numbers through the year. During the cold winter of 1980/81 a flock of 15+ were regularly seen on the spartina near the mouth of the Kenn, and also 15 were present

here in April 1984. This species has benefited from the construction of Blake's Pools: observations have increased there since 1985, but winter flocks on the spartina have virtually disappeared following the decline of this plant species.

BLACK-HEADED BUNTING *Emberiza melanocephala*. The only reference to this species for Clevedon (or for Avon) is on the 1868 list. [1868]

CORN BUNTING *Miliaria calandra*. In the last twenty years there have been three records of single birds in the study site: on 17 Nov. 74, 15 Dec. 77, and 3 Oct. 82. [1868]

Appendix 1: Unconfirmed Records.

Listed below are a number of 'probable' or unconfirmed records. In each case some supporting evidence has been forthcoming, if only verbal, but it has not been sufficient for a full record.

BLACK STORK *Ciconia nigra*. A bird showing many of the characteristics of this species was seen flying south-east over Kingston Seymour on 3 Sept. 90. As the observer was in a car on the M5 at the time this record must be classified as probable only. A Black Stork was seen at a site due south a week later.

MONTAGU'S HARRIER *Circus pygargus*. The 1947 report (Davis, 1948) gives a 'probable' record of a female in May 1947.

GOSHAWK *Accipiter gentilis*. A verbal report was received of one near the Yeo Estuary on 12 Apr. 86.

CRANE *Grus grus*. There is an unconfirmed report of one flying north east past Middle Hope, and so into the study area, on 27 June 82.

PRATINCOLE SP. *Glareola* sp. There is an unconfirmed report of one seen in the study site on 14 June 87 exactly one year before the definite record given in the main list.

DOWITCHER SP. *Limnodromus* sp. On 4 Nov. 84 a bird was seen in flight showing many of the characteristics of one of these species (correct size, general shape and colouring, no white markings on upper wing, long straight bill, white patch on lower back), but the sighting was too brief for firm identification. A 'long-billed' was present in the Estuary that autumn.

TEREK SANDPIPER *Xenus cinereus*. A wader seen briefly, in flight only, on 18 Sept. 86 near Blackstone Rocks showed many of the characteristics of this species. These included right size and general shape, long straightish bill, grey upperparts with much darker primaries and paler neck, pale grey rump, and white underparts. But as some features were not seen this is only a 'probable' record. A Terek Sandpiper was positively identified at Royal Portbury Dock one day later and at Severn Beach a day after that.

Appendix 2: Records From the Fringes of the Study Site.

The following records refer to sites near the study area but not definitely within it. These include some old reports for 'Clevedon', but as precise details of the actual sites have not been recorded, it is not possible to be certain that the observations refer to the study site itself.

TEAL *Anas crecca*. The record of a nest with ten eggs in May 1952 for Clevedon in all probability refers to the old duck decoy on Walton Moor in the Gordano Valley.

RED KITE *Milvus milvus*. One was seen in flight close to Clevedon Court Wood during a snow storm on 31 Dec. 78 being mobbed by a flock of corvids.

LITTLE AUK *Alle alle*. An exhausted bird was found near Woodspring Priory on 11 Feb. 50.

NIGHTJAR *Caprimulgus europaeus*. The only recent record is of one over Clevedon Court Wood on 17 June 65.

WRYNECK *Jynx torquilla*. Lewis (1955) gives a breeding record for 'Clevedon' in 1916 but no further details.

WAXWING *Bombycilla garrulus*. There are two records from Clevedon gardens: three on 15 Dec. 57, and two on 11 Dec. 65.

NIGHTINGALE *Luscinia megarhynchos*. Palmer and Ballance (1968) state that there were many records of this species between Portishead and Weston-super-Mare from 1912 to 1939 but give no more details. Also Lewis (1955) referring to the period 1900 to 1940 states that it bred near Clevedon for many years.

MARSH WARBLER *Acrocephalus palustris*. There is an old record of a pair breeding at Clevedon before 1905, but the exact site was not recorded.

ROSE-COLOURED STARLING *Sturnus roseus*. There are two old records of single birds in September 1890 and 1895, but the exact sites were not recorded.

CROSSBILL *Loxia curvirostra*. A single bird was seen in flight over Clevedon on 12 Dec. 87.

Appendix 3: Scientific Names of Plants and Mammals

Scurvy-grass *Cochlearia officinalis* and *anglica*

Glasswort *Salicornia europaea*

Blackthorn *Prunus spinosa*

Hawthorn *Crataegus monogyna*

Common sea-lavender *Limonium vulgare*

Sea Aster *Aster tripolium*

Common cord-grass (spartina) *Spartina townsendii*

Short-tailed Vole *Microtus agrestis*

Red Fox *Vulpes vulpes*

Badger *Meles meles*

Common Dolphin *Delphinus delphis*

Lesser Rorqual *Balaenoptera acutorostrata*

Appendix 4: Postscript for 1991

For Clevedon Bay, 1991 had some highlights but in the main was an average year birdwise. Dunlin numbers were generally low, the mud not having recovered to its former state. Two pairs of Oystercatchers bred, producing three fully fledged young which remained in the area until autumn. Two new species were seen (note that these and other records following await confirmation by the BBRC and local records committees): White-rumped Sandpiper *Calidris fuscicollis* at the Yeo Estuary on 1 October and a Nightingale *Luscinia megarhynchos* nearby on 30 August. Other highlights included record counts of 21 Little Grebes on Blake's Pool on 31 January, and 19 Bewick's Swans close by on 10 February. A major passage movement occurred on 28 April, 61 species being seen including a Stone Curlew, eight Turtle Doves and four Grasshopper Warblers. The summer produced 110 'Commic' Terns on 6 May, five Fulmars on 13 June, and four Garganey on 28 July and into August. During September, nine Pintail and 22 Curlew Sandpipers were seen on 1st, up to eleven Black-tailed Godwits were present through the month, and 74 Bar-tailed Godwits were seen on the 15th. Finally, a Lapland Bunting was present on 25 October, with a Goshawk on 15 December near the Yeo in freezing conditions.

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Harvey Rose

12 Birbeck Road, Bristol BS9 1BD.

Decline of the Turtle Dove in the Saltford Area

Will Duckworth

The Turtle Dove *Streptopelia turtur* appears to have declined steadily in Britain since the mid-1970s (Marchant *et al.*, 1990). Bland (1988) reporting the Avon tetrad survey of breeding birds in the years 1985 to 1987 found them present in only 3% of tetrads, confirming the 'subjective impression that the species is quite exceptional in Avon'. It used to be a common bird in the agricultural land around Saltford, Avon, but it is now effectively extinct. Goodwin's (1985, 1987 and 1989) thought-provoking notes on the subject have prompted me to detail this decline, and discuss some possible local causes.

Study Area and Timescale of Observations

The two discrete areas from which I have gathered extensive data since 1978 (with supplementary notes from earlier years) comprise the floodplain of the River Avon between Kelston Park and the confluence with the River Boyd (including the associated higher areas east of a line from the River Boyd to Saltford church) and higher ground of Long Wood, Folly Wood and the fields adjacent to Gypsy Lane.

Observations were effectively continuous until 1983 but since then have been interrupted by my absences from the region, unfortunately often coinciding with the Turtle Dove breeding season. Turtle Doves usually arrived by the second week of May (earliest date 15 April 1981), and were very conspicuous until the end of June. They became increasingly less prominent through July and August, during which latter month they left (latest date 16 August 1978). During 1984 to 1990 I was only present on nine days between 8 May and 30 June; however, I usually specially searched for this species. Additionally, in many years I made extensive observations throughout April and early May and during July–September, during which months, if birds were present in any numbers I would have found them; Bland (1988) agrees that the species would seldom be overlooked if present. In 1991, I was able to search specifically for the species on 13 days throughout May and June, which allowed a clear assessment of current status.

Results

Although, especially in the seventies, birds were encountered throughout the area, four distinct sites were favoured by the species:

1. The disused LMS railway line adjacent to Avon Lane (to the east) and the green lane (to the west), a length of about 600 metres (ST 687677 to ST 684682). This area, in contrast to the railway north and south, was fringed with tall, thick scrub containing many large trees. These were used as song posts by three to four birds in both 1978 and 1979, the birds feeding in adjacent (partially abandoned) cultivation and the railway cutting itself. Up to eight were seen each day. In midsummer 1979 the line was converted to a cycle track, resulting in an enormous increase in disturbance and most doves dispersed. In the springs of 1980 and 1981, several singing birds returned singly and set up territory. In both years it was noticeable how many early arrivals disappeared (or at least stopped singing) the first weekend after their return, presumably as a result of the much greater numbers of people then abroad. Despite this, one pair remained through both seasons, but I saw no juveniles. The only record since 1981 in this area (despite several visits most weeks through the breeding seasons of 1982 and 1983) was of two (one singing) on 6 August 1985. These birds moved through the area and I failed to see any on nine other days between 22 June and 9 August 1985; it is clear they were transient visitors. Additionally, one bird singing briefly in the adjacent field Henleaze on 31 May 1991 could not subsequently be found and was presumably a migrant.

2. The LMS line and adjacent Tenant's and Summerhouse Woods. This area supported several pairs in the late seventies (up to six seen per day) but they disappeared around the same time as those in Area 1. I have seen none since sporadic singing in 1981, the few records of which could all have referred to one bird.

3. Saltford Sewage Farm (SSF). Birds did not breed here but visited (with Stock Doves *Columba oenas* and Woodpigeons *C. palumbus*) grit-heaps scattered throughout the works. Most (but not all) of these heaps were removed in 1985 and I have seen no birds since. Up to four birds (often including juveniles before 1984) visited, probably coming from the steep hills around North Stoke. However, birds were infrequent during 1984 and 1985, being recorded on only four of 19 checks during late May to early August, and the removal of the grit-heaps probably merely precipitated an imminent loss of the birds.

4. Long Wood and Gypsy Lane. I always visited this area infrequently so data are accordingly less detailed. However, singing was heard and up to three birds seen on most visits up to 1981, but I have seen none since two on 16 June 1983.

Discussion

While it is regrettable that the area which both supported the highest densities of doves and also bore the brunt of my observational effort was that showing the biggest local change in environment (thus forestalling extrapolation of reasons for decline from local to national scale), the pattern in Areas 3 and 4 echoes that discussed by Goodwin (1989), especially the

sudden collapse suggested for the years 1984 and 1985. The only possible cause of decline discussed by Goodwin (1989) I have direct data about is the status of the Collared Dove *S. decaocto*. This species is not responsible for the decline of Turtle Doves in Saltford. They never came to the grit in SSF, and when the Turtle Doves forsook the other areas discussed above there were no Collared Doves in them. Interestingly, after several years of neither species, in spring 1990 and 1991 there were several Collared Doves singing and feeding in areas 1 and 4, and they may now breed there. They remain effectively absent from areas 2 and 3. With less detailed observations, it could clearly appear that one species had ousted the other, but, at least here, it seems more of a case of one moving in to an already vacated area, as it seems to have happened with the 'replacement' of Red *Sciurus vulgaris* by Grey Squirrels *S. carolinensis* across much of England (Gurnell, 1991).

During the early eighties, especially in Area 1, there was a shift in land use from grass leys to winter-sown cereals. There were thus presumably also changes in the types of pesticides and fertilizers applied, which may be important. However, it seems most likely that the same factors are important in the national Turtle Dove decline as for several other species with their main British distribution in the dryer areas of south-eastern England, notably Red-backed Shrike *Lanius collurio* and Wryneck *Jynx torquilla*. Like them nationally, the Turtle Dove is now but a scarce passage visitor to Saltford.

The Turtle Dove is not the only breeding species to have died out in the study area since the mid-seventies. Of a rough total of 65 regulars, so too apparently have Lapwing *Vanellus vanellus*, Barn Owl *Tyto alba*, Lesser Spotted Woodpecker *Dendrocopus minor*, Corn Bunting *Miliaria calandra* and Tree Sparrow *Passer montanus*. All these species bar Lapwing contracted in distribution within Avon between the 1968–1972 Atlas and that of 1985–1987 (Bland, 1988). In contrast, the only clear arrival is Coot *Fulica atra*, though recent trends in Tufted Duck *Aythya fuligula* and Redpoll *Acanthis flammea* are suggestive.

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J. W. Duckworth

Dept. of Zoology, Downing Street, Cambridge, CB2 3EJ.

Notes

Differing Reactions of Birds to Presence of Peregrine

On 8 October 1990, at Chew Valley Lake, Avon, two Peregrine Falcons *Falco peregrinus* were present, spending long periods of time sitting on exposed mudbanks near the Sutton Wick shore. Both appeared to be in immature plumage, one of each sex. Numerous other species were present around the mudbanks, not seemingly concerned at the presence of the falcons, as is usual when birds of prey are inactive.

After a while, the male took off, spiralling to gain height, and then stooped down and made a low pass across the mudbanks. It was then joined by the female, and the two indulged in the form of tandem hunting described in Bond (1985). The male took the 'stoop' role, whilst the female adopted the fast, low 'follow-in' role, presumably to pick up prey flushed by the original stoops.

The interesting feature was the behaviour of the intended prey species: a large flock of Teal *Anas crecca* and numerous Coot *Fulica atra* were just offshore from the mudbank, and appeared to be the target of the attacks. Unlike lone birds which so often panic into flight in such circumstances, the birds here exhibited 'flock' reactions. The Teal rapidly moved together into a very tight pack, appearing as a single block on the water. Despite several stoops and very low passes by the falcons, not one bird broke rank. The Coot in the meantime opted for a 'multi-confusion' tactic. Each time a falcon homed in, they lifted onto the surface of the water, running at speed with much splashing in all directions and then diving under the water, again apparently a very successful defence technique.

Later the same day, a particularly large female Peregrine was seen at Cheddar Reservoir. It was first seen in flight when it was attacking a sizeable flock of airborne Lapwing *Vanellus vanellus*. The flock split into two and then wheeled and twisted around the sky in separate units, but very tightly compact, seemingly endeavouring to gain height above the Peregrine. The falcon dived between the two flocks on several occasions, but no individual broke away and the Peregrine exhibited the well-known raptors' inability to deal with a well-synchronised flock that does not hold any obvious weaker members.

Turning its attention elsewhere, the bird then flew down in a fairly gentle, shallow stoop, probably exploratory, across the exposed mud in the reservoir. Various individual ducks, Teal and Mallard *Anas platyrhynchos* took flight (there being no obvious flocks on this part of the reservoir) showing the usual panic reaction, but not attracting the attention of the falcon.

A line of a dozen or so Grey Herons *Ardea cinerea* and a nearby Little Egret *Egretta garzetta*, which had been standing very upright and alert,

immediately hunched down low as one, as the Peregrine passed overhead. Contrastingly, a group of Cormorants *Phalacrocorax carbo* showed a completely opposite reaction. From being in a variety of postures from erect to hunched down, they all immediately straightened into full erect position with bills well raised upwards.

The falcon flew down and landed on an open piece of mudbank in the centre. The Black-headed Gulls *Larus ridibundus* on the ground scattered in raucous and seemingly unco-ordinated panic, but an immature Arctic Tern *Sterna paradisea* merely hunched down low and sat tight.

It would of course be wrong to take specific instances and treat them as usual behaviour patterns, for example the tern may have been tired and disorientated. However, several of the patterns do conform—the ability of compact flocks to confuse a raptor, the preference of waders for flight defence, but ducks for water-based protection, the tendency towards different behaviour in individuals when they are away from a flock, for example, duck flying, but a tern not doing so. The reaction of the herons, egret and cormorants was particularly interesting, as these are species that, whilst vulnerable to a Peregrine attack, would nonetheless not normally be unduly threatened, especially on the ground.

References

- Bond, T.E. (1981) Hunting behaviour of Peregrine low over water. *Bristol Ornithology* 14: 131.
 Bond, T.E. (1981) Behaviour of Peregrine attacking Mallard. *Bristol Ornithology* 14: 131-2.
 Bond, T.E. (1985) Hunting behaviour of Peregrine. *Bristol Ornithology* 18: 125-6.

Terry Bond

20 Ham Close, Charlton Kings, Cheltenham, Glos. GL52 6NP.

Peregrine Taking Prey from the Ground, and Tandem Hunting

Previous articles have described the difficulty that Peregrines *Falco peregrinus* can face in endeavouring to secure prey when they have lost the advantage of their optimal hunting medium, the prey having plunged into the water or onto the ground (Bond, 1981, 1985).

It is however not unknown for Peregrines to take prey from the ground whilst in flight, but the instances are rarely recorded.

On 1 January 1991, I was at Slimbridge, Gloucestershire, where Peregrines are usually in evidence on the Dumbles. An adult pair were tandem hunting over the estuary, with groups of waders spiralling for height, and odd duck flying in various directions. The female Peregrine selected a female Teal *Anas crecca*, came down in a shallow stoop and just missed the Teal which veered at the last second. It then turned and came back after

the Teal, lifting slightly before making a 'mini-stoop' which also failed. It came back for a third strike, this time quite low over the ground. At the last moment, the Teal plunged straight down into a shallow muddy pool, where it sat low down.

The Peregrine turned once more, came back in more slowly, braked almost to a hover, reached out with its right foot, grabbed the Teal behind the neck and then flew off with the duck in its talons. It flew perhaps 30 or 40 metres low over the ground before landing. From its movements, the Teal at this juncture was still alive, but it was rapidly dispatched and the Peregrine then fed energetically on its prey for the next 20 minutes, the wind carrying a steady stream of feathers from the plucking.

The male meanwhile, as soon as the female had taken the Teal, flew straight in, and landed some 10 metres or so away from where the female began to feed. Its head was held forward in a very alert pose, and it seemed clearly to be watching the other bird. However, it made no effort to move closer, or interfere in any way, and maintained its position throughout the period of feeding.

This poses some interesting questions on the technique of tandem hunting.

- (a) Does it only occur when the two birds are hungry, and when one bird has caught prey, as in this instance, it then feeds and loses interest, leaving the other bird to find its own meal subsequently, or, after feeding, will it then 'help' the other bird catch prey through further tandem hunting?
- (b) If both birds participate when only one is hungry, does only the hungry one take the 'killer' role, the other bird merely harrying and provoking the prey so as to provide opportunities for the hungry bird to make a kill, or does either take the first killing opportunity that arises?
- (c) If the latter case in (b) were to apply, and the prey were seized by the bird that is not hungry, would it then leave the prey for the other 'hungry' bird? This could explain the immediate arrival and subsequent wait of the male in the instance described.

The whole mechanism of tandem hunting is little understood, and only further detailed observations will explain the pattern more clearly.

References

- Bond, T.E. (1981) Hunting behaviour of Peregrine low over water. *Bristol Ornithology* 14: 131.
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Terry Bond

20 Ham Close, Charlton Kings, Cheltenham, Glos. GL52 6NP.

Aggressive Interaction Between a Roseate Spoonbill and an Eastern Diamond Rattlesnake

During a visit to the Alafia Bank National Audubon Society Refuge in Tampa Bay, Florida, to record sequences on video for a BBC programme 'Birdwatch from Florida', I witnessed an extraordinary event involving a Roseate Spoonbill *Ajaia ajaja* and an Eastern Diamondback Rattlesnake *Crotalus adamanteus*. The event occurred during the early afternoon of 20 April 1986, on Sunken Island, when Ian Stacey, the cameraman, and I had been in a blind for several hours overlooking nests of White Ibis *Eudocimus albus* and one nest of a Roseate Spoonbill. I suddenly noticed a Roseate Spoonbill about 15 metres from us behaving strangely as it walked on the ground below the tree-nesting colony. It was showing interest in something else on the ground, opening its bill as if calling, but I could hear no call emitting from the bird, possibly due to the rather loud ambient colony atmosphere. After a few seconds I noticed that a snake was present and that the spoonbill was pursuing it closely, soon forcing the snake into the open where I could identify it as a rattlesnake, at least 1.2 metres long. Then, to my astonishment, the spoonbill pecked sharply at the rattlesnake's tail, causing the rattlesnake to dart forward, whereupon it shook its rattle in annoyance. The spoonbill soon stood still, but continued to gape and look anxiously at the rattlesnake as it slid away. Meanwhile, a Black-crowned Night Heron *Nycticorax nycticorax* was watching with great interest as the rattlesnake passed within about a metre of it. The night heron followed the rattlesnake, but both of them soon disappeared behind a tangle of vegetation. The whole event lasted just under three minutes and most of it was recorded by the cameraman. An edited sequence of the behaviour was included in a BBC programme 'Island of Birds' about the birds of Sunken Island, shown on BBC2 on 31 December 1988.

I am grateful to Rich Paul, Manager/Biologist of the Tampa Bay Sanctuaries, National Audubon Society, both for his kindness and guidance during the visit to Alafia Bank and for drawing my attention to the unique nature of the observation. He also made helpful comments on the first draft of this note.

Robin Prytherch

23 Caledonia Place, Clifton, Bristol, BS8 4DL..

Club Activities, 1990 & 1991

1990 opened with 448 members—only three fewer than in January 1989—and that despite the fact that, for the second year in succession, rising inflation had caused a rise in subscriptions, to £9.50 for ordinary members. This time the junior membership fee went up to £5.00 and that for additional family members to £2.50. In both cases they had remained untouched since 1980.

During the year, the Club held eight indoor meetings, 28 field meetings, three weekends—to Tregaron, Suffolk and Cornwall. In May, seven members flew to Fair Isle for a week and managed to extend the visit to ten days by the simple expedient of getting themselves fogbound. A good way, it seems, of improving an already good list.

January was an exceptional month for destructive winds, with gales causing widespread damage both to property and to woodland and hedgerow trees. The Club sent donations of £20 to each of the County Trusts in our area, who had all appealed for funds to help repairsome of the damage. On a happier note, £50 was sent to a member wanting to erect nesting boxes in the wood he regularly watches near Wells.

Leaflets were distributed to members on behalf of LIPU, the Italian League for the Protection of Birds, who are struggling to counter that Latin machismo which demands that anything that moves should be shot down in the name of sport, and Club member Pat Mulcock submitted a report for *Bird News* about the Spanish Ornithological Society, who seem to be prospering. Completely coincidentally, a straw poll among members led to the choice of southern Spain as the venue for our 1991 holiday.

BOC's conservation fund benefited, to the tune of £168, as a result of helping to organise a talk by Bobby Tulloch on the delights of birdwatching in the Falkland Isles. General funds were also expected to benefit from the introduction of a Club sweatshirt—logo designed by Robin Prytherch, naturally—which came into being just in time for the Fair Isle foray.

Peregrines, still on the increase, continued to be persecuted. In the summer, news broke that the Avon Gorge pair's nest had been attacked, with two of the four eyasses killed. Further attempts were made on the lives of the remaining young and on the adults, but publicity given to the killings, and indeed to the fact that Peregrines were nesting in the Gorge, meant that at least one bird fledged successfully.

Peregrine protection in—or rather above—the Avon Gorge, birding in Spain, and the Club's 25th Anniversary: a trio of highlights that made 1991 an eventful one in BOC history. And although the actual celebration of our quarter centenary had to wait until January 1992 it can still be said that all three items were highly successful.

Equally pleasing to a hard-working committee was the fact that 1991 ended with 30 more members that it had begun with, the total of 477 being

the highest for a number of years. Undoubtedly the public exposure brought about by the Peregrine watch created a great deal of interest in the Club and helped in the growth of membership. Three young were raised to fledging under the watchful eyes of almost 60 volunteers taking part in the scheme co-ordinated by a non-birder—Tertia Barnett—with no previous connection with the BOC. She was rewarded with a Robin Prytherch Peregrine portrait once the birds had flown—two successfully.

Robin, who at the end of the year was proposed as a Life Member after 25 years on the Club committee, looked back over that time by providing a potted history of the BOC for an Anniversary Edition of *Bird News* in December.

Committee member Ken Hall led a comparative handful of members on a merry chase around southern and mid Spain during a fortnight's birding holiday which clocked up a satisfyingly high proportion of that country's varied avifauna. Back home a total of 26 field meetings met with varying success both from a birds-seen and members-attending angle. Woodland venues proved particularly attractive, with 46 members at Chepstow Park Wood in late June and 45 at Haldon Forest a few weeks later. Weekend birding trips continued to be over-subscribed in most cases, and indoor meetings drew a high proportion of members.

Now for the next 25 years!

Indoor Meetings

18.1.90	Galapagos—Chris McFarling
15.2.90	Members' Evening
15.3.90	Puffins—David Boag
22.3.90	Beginners' Indoor Meeting
20.9.90	Corn Buntings—David Harper
18.10.90	Wildlife Photography in The Gambia—Mike Wilkes
15.11.90	Terns—Mark Avery
20.12.90	Annual General Meeting
17.1.91	The Honey Buzzard—Robin Khan
14.2.91	Members' Evening
14.3.91	Beginners' Indoor Meeting
21.3.91	Waterfowl & Wetlands Conservation—Mike Moser
19.9.91	Poisoning of Wildlife—Carey Coombs
24.10.91	Blaise Woods, CBC and All That—John Tully
21.11.91	Natural History and Conservation of Owls—Chris Sperring
19.12.91	Annual General Meeting

John Barber *Honorary Secretary*

