

Norfolk Bird & Mammal Report 1988



Norfolk Bird Report — 1988

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Norfolk Mammal Report — 1988

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NORFOLK BIRD REPORT 1988

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Editorial

The Council of the Norfolk & Norwich Naturalists Society, in conjunction with Norfolk Ornithologists Association, is pleased to present the annual report on the birds of Norfolk.

Review of the Year:

January was generally mild and wet and bird-watchers tended to concentrate on wildfowl. Co-ordinated counts included 18,800 Pink-footed Geese in north-west Norfolk. The Ouse Washes attracted nearly 3,800 Bewicks's and 505 Whooper Swans. The Cley area attracted one and sometimes 2 Black Brants and a Red-breasted Goose; these stayed until March.

February was the sunniest since 1949, but also wet with a colder spell at the month end. The RSPB new Reserve at Berney held up to 700 Bewick's Swans. Only new rarity of the month was an American Wigeon, accidentally shot at Holkham. Unseasonal surprises included Dotterel, Grey Phalarope and Turtle Dove.

March will best be remembered for the spectacular and unprecedented movement of Red Kites which commenced with an area of high pressure building-up over the country on 17th and an associated very mild airstream. This weather system was also undoubtedly responsible for a very early Alpine Swift at Brancaster Staithe. The month, however, was mainly wet and windy. Also notable was a major influx of Shags, especially inland in the west of the county.

April was again mixed with warm weather early in the month attracting several early migrants including Bonelli's Warbler. Latter part of April was typical of recent years with well below average temperatures inhibiting migration on the coast. A White Stork appeared at several locations on the first two days and Caspian Tern and Subalpine Warbler on the last two days. The month was largely characterised by such species as Black Redstart and Ring Ouzel, the latter being particularly widespread.



May — the mildest since 1970 — fortunately produced an abundance of easterly winds associated with high pressure over northern Europe. Blakeney Point was certainly the 'place to be' providing a Subalpine Warbler on 8th followed the next weekend and beyond with an obliging Bonelli's Warbler, a not-so-obliging Thrush Nightingale (giving most observers only flight views), 2 (possibly 3) Red-throated Pipits (including one in song), 3 Bluethroats, Ortolan and a splendid summer-plumaged Lapland Bunting. Early risers on 14th were rewarded by a Little Egret at Cley which soon moved westwards to be seen later at three other coastal localities. That particular weekend also marked the arrival of a Marsh Sandpiper at Snettisham. The newly created pools at Berney attracted a succession of spring-time surprises: American Wigeon, Green-winged Teal, Kentish Plover and up to 4 Temminck's Stints together. The month ended with the discovery of a Red-footed Falcon at Hickling which gave pleasure to many observers.

The following month was the driest since 1970, but not particularly warm with winds often from the east/north-east. Late passerines on Blakeney Point included Tawny Pipit and Icterine Warbler, together with Great Reed Warbler at Cley. Despite a long stay the bird was particularly difficult to see for much of the time. Odd rarities regularly appear during June and 1988 was no exception. Birders wishing to travel on the 18th/19th could not only have seen the above warbler, but also an unseasonal Surf Scoter at Holme, Terek Sandpiper at Holkham and 2 Caspian Terns at Hickling.

July was the wettest month since 1946 and the second wettest since 1925. Typically the month is associated with the commencement of autumn wader passage and undoubtedly the conditions were to their liking! Wisbech Sewage Farm was the great attraction in the past, but the tanks were finally reclaimed in 1985 depriving migrating waders of yet another 'staging post'. Fortunately raised water levels on Holkham fresh-marshes during the year have provided a new habitat producing also Buff-breasted Sandpiper, several Pectoral Sandpipers and Red-necked Phalarope at different times. In the Waveney Valley the 'discovery' of Gillingham flood-marsh — just within the county boundary — provided another new wetland locality; over 20 species of wader were recorded there during the year. The month also produced large movements of Manx Shearwaters. Only unusual passerine was a Woodchat at Waxham.

August weather was generally mixed, with heavy thunderstorms on the 31st. It was a disappointing month bird-wise with isolated sightings of Cattle Egret, one or 2 individual Bee-eaters, Lesser Crested Tern and a trapped Marsh Warbler. Fortunately a Purple Heron at Holkham and a White-winged Black Tern both lingered.

September was also unsettled, but gales resulted in excellent sea-watching spells including large movements of Gannets and Fulmars; also a notable number of Leach's Petrels and Sabine's Gulls. The Lesser Crested Tern was again seen early in the month, together with 4 Roseate Terns off Blakeney Point. The county also received its share of Long-tailed Skuas associated with an unprecedented national movement of this species. Among other highlights: Sociable Plover briefly at Titchwell and Holme, White-rumped Sandpiper at Cley (the only rare wader there during 1988), single Bee-eater sightings on consecutive days at a remarkable number of localities and an obliging Marsh Warbler adjacent to Cromer golf course.

During **October** many bird-watchers 'migrate' south-westward to the Scillies. However 1988 was undoubtedly one year when many wished they could have been in Norfolk instead, especially in the middle of the month. Possibly the month's potential could have been forecast on the opening day when a Short-toed Lark appeared on Blakeney Point with an Arctic Warbler at Yarmouth. Rainfall was above average, but a drier spell occurred towards the end. Interesting movements of grebes and owls added variety, together with a noticeable influx of Richard's Pipits. This species, together with Yellow-browed Warbler, have increasingly occurred in October in recent years and there was a major fall of the latter on 13th with at least 18 at Holkham Meals but with surprisingly few other migrants. An Olive-backed Pipit was discovered at Stiffkey. Two days later a high pressure area had become established over Scandinavia which resulted in the arrival of Radde's Warbler at Wells (East Hills) in a classic fall situation with easterly winds. Surprisingly no migrants whatsoever appeared on Blakeney Point. Yet next day similar weather conditions persisted and thousands of migrants were arriving throughout daylight particularly Thrushes, Robins, Goldcrests and Bramblings. Rarities included Pied Wheatear and Radde's Warbler. Rare passerines continued to arrive during the rest of the month: 2 more Radde's Warblers, 6 Pallas's Warblers, Isabelline Shrike and — from the opposite side of the globe — Indigo Bunting. A Whiskered Tern made a number of appearances at Welney. The end of October witnessed large numbers of coasting Little Auks (movements continuing until early December), together with the commencement of a major influx of Waxwings throughout the whole country, and the largest since 1965/6.

November was the driest for ten years, but ground frost was recorded on 23 nights. Normally early in the month can be interesting for both late passerines and for sea-watching, but 1988 was disappointing in this respect. No movements occurred until 18th/20th when several late Sooty Shearwaters put in an appearance. November saw the arrival of a Black-bellied Dipper at Lyng which must have been seen by several thousand observers during its lengthy stay.

December was the driest since 1933 and the sixth December in a row with above normal temperatures; in fact, no air frosts were recorded. As a result no cold-weather influxes from the continent took place. Bean Geese peaked at 350 in the Yare Valley and Wigeon reached a maximum of nearly 11,000 at Welney which also produced an American Wigeon — the only rarity of the month (GED).

Recording: The Editor and County Records Committee have undertaken a major review of the collation and assessment of records in view of the increasing numbers of bird-watchers generally and more particularly in the number of records submitted. It must be stressed that the increase in submitted records is welcomed as it has always been the policy of the Society that the *Norfolk Bird Report* is as comprehensive as possible. Even if records have to be summarised in the classified notes, they are all retained for future reference, both in their original form and on a card index system.

In order to ease the burden of recording an ever-increasing number of observers' submitted notes in the opening months of the year, regular and other contributors are requested to submit observations on a half-yearly basis. Despite regular requests for contributors to submit records by the end of January unfortunately many do not comply with this deadline. The reason for this timetable is to enable records to be entered on record-cards and also

in many instances for observations to be assessed by the County Records Committee. In future in order to meet printing deadlines work needs to commence on compilation of the classified notes at the beginning of April. It is hoped therefore that the end of January deadline for the submission of records, particularly for the second half of the previous year, is appreciated.

Records should be submitted to Michael J. Seago, 33 Acacia Road, Thorpe St. Andrew, Norwich NR7 0PP. All observations should be prepared in the order followed by The 'British Birds' List of Birds of the Western Palearctic. As all records are entered on cards species by species notes submitted in diary form cannot be considered in view of the disproportionate amount of time involved. In order to also help to minimise the work involved, records will not normally be acknowledged, but the names of all contributors will be included in the Report.

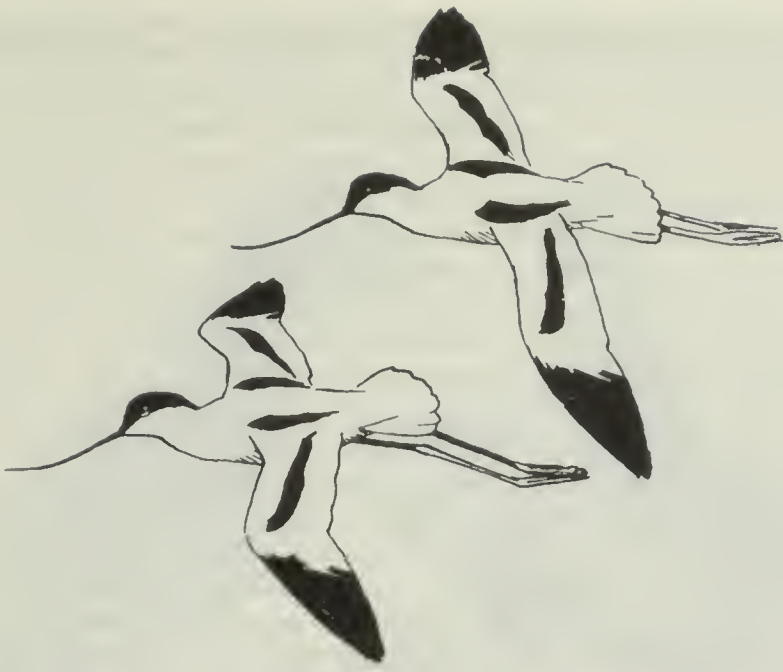
Records of national rarities considered by 'British Birds' Rarities Committee should be submitted with full details as soon as possible after observation and not left until the year-end. There are several omissions in the classified notes of national rarities as decisions are still awaited. Observers who find a national rarity are requested to submit details themselves rather than leaving the submission of such records to a small number of dedicated bird-watchers who are 'persuaded' to submit details if they have subsequently seen the particular bird rather than have it remain unconsidered and unrecorded. Record forms for the submission of such national rarities are available from the Editor and from G.E. Dunmore, 49 The Avenues, Norwich NR2 3QR.

The County Records Committee (Giles Dunmore, Steve Gantlett, Steve Joyner, John Kemp and Richard Millington) have reconsidered the semi-rare birds list last published in 1983. The following is the list of species and sub-species records of which in future will be considered by them: Black-throated and Great Northern Divers; Red-necked, Slavonian and Black-necked Grebes; Cory's, Sooty and Balearic Shearwaters; Storm and Leach's Petrels; Purple Heron, White Stork, Ferruginous Duck, Honey Buzzard, Red Kite, Montagu's Harrier, Goshawk, Buzzard and Rough-legged Buzzard; Peregrine, Spotted Crake, Corncrake, Kentish Plover, Buff-breasted Sandpiper, Red-necked and Grey Phalaropes; Pomarine and Long-tailed Skuas; Sabine's and Iceland Gulls; Roseate Tern, Black Guillemot, Little Auk, Puffin, Hoopoe; Richard's, Tawny and Water Pipits; all continental races of 'flava' Wagtail (excluding Blue-headed); Bluethroat; Savi's, Icterine and Barred Warblers; Red-breasted Flycatcher, Golden Oriole, Raven, Serin, Scarlet Rosefinch and Ortolan Bunting.

Field descriptions will not of course be needed for records of semi-rarities seen by many observers, but requests for descriptions will normally be made (if no such details are submitted with the record) where birds are only seen by one or two observers. This will apply particularly to often misidentified species: Great Northern and Black-throated Divers, Goshawk, Long-tailed Skua and Sabine's Gull which species are responsible for the greater proportion of observations rejected by the Committee.

In order to obtain as complete a coverage as possible of the bird-watching year, records are extracted from the publications of Cley Bird Club, The Birds Information Service, Norfolk Ornithologists Association and Nar Valley Ornithologists Society. Records of semi-rarities appearing in such publications will *not* be published in the *Norfolk Bird Report* unless details including the name of the observer(s) have been submitted. All birders are therefore requested to submit their records of semi-rarities direct to the *Norfolk Bird Report*.

Acknowledgements: Thanks are due to the following artists and photographers: N. Arlott, B. Bland, D. Bryant, D. Cottridge, C. Donner, R. Farndon, P. Haddon, H. Hems, R. Jones, D. Kjaer, C. R. Knights, B. J. Madden, J. R. McCallum, R. Millington, R. Powley, M. Rains, M. S. Read, the late R. A. Richardson, A. Stoddart and R. Tidman.



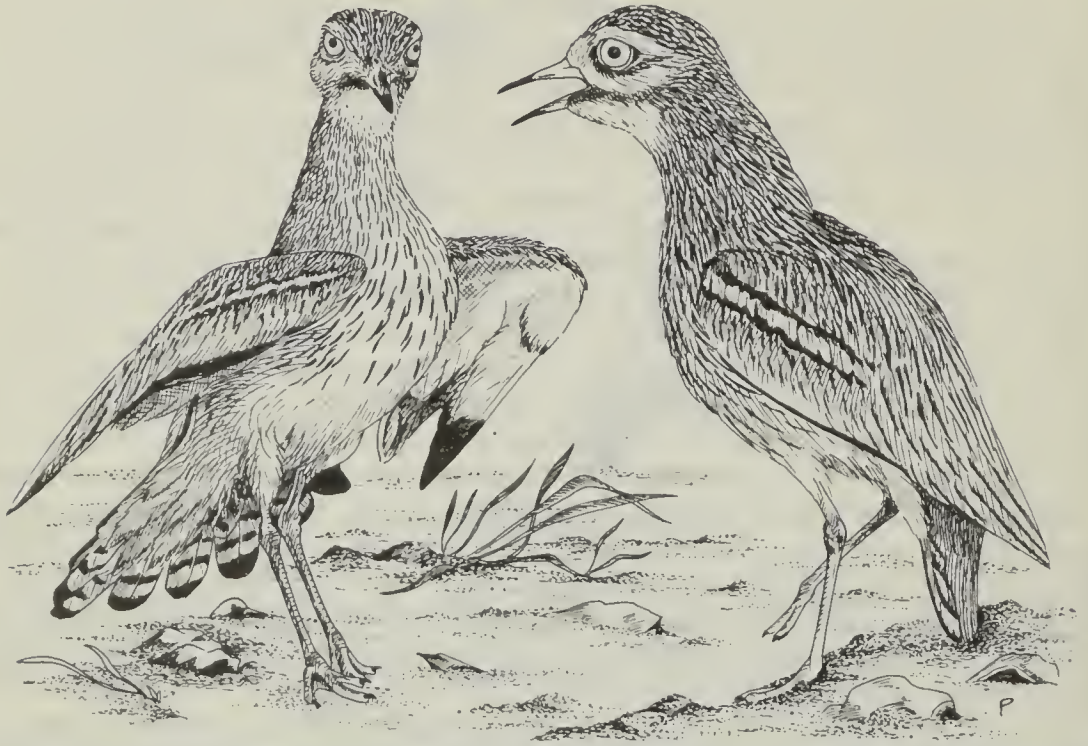
Thanks are also due to The Bird Information Service, Cley Bird Club, Norfolk Ornithologists Association, Norfolk Naturalists Trust, National Trust, Wildfowl and Wetlands Trust, Nature Conservancy Council, RSPB, Nar Valley Ornithological Society, G. E. Dunmore (for liaising with 'British Birds' Rarities Committee and acting as Secretary/Chairman of the local Records Committee), Mrs. M. Dorling, Mrs. S. F. Seago and all other contributors.

For the first occasion in fifteen years Dr. Moss Taylor's name is missing from the title page and it is greatly hoped the omission is only temporary. His considerable contribution through the years has been greatly appreciated.



Conservation of Stone Curlews

Dr. Rhys Green



The stone curlew is one of Norfolk's special birds and the only one to bear the county's name. Although the species occurs in several other English counties, its alternative name, the Norfolk plover, is more appropriate than the common name in some ways.

Stone curlews are found in Europe, North Africa, the Middle East, India and South-East Asia. Their distribution in Europe is contracting. Stone curlews have ceased to breed or have become very rare in the Netherlands, Germany, Poland, Czechoslovakia, Austria and Hungary during the 20th Century. The main populations in western Europe are in France, Spain and Portugal. Intensification of agricultural land use threatens the future of the stone curlew even in these strongholds where present status and trends in numbers are poorly known.

In the 19th Century stone curlews were found further north in Britain than they are today. They bred on the Yorkshire and Lincolnshire wolds and in the Cotswolds as well as in their 20th Century range in East Anglia, Wessex and the South Downs. They were, and continue to be, restricted to certain soil types. They are only found on sandy, well-drained soils strewn with flints or chalk rubble.

In the 1930s and 1940s stone curlews were still widespread on the large areas of heathland and dry grassland remaining in southern England and on tilled land in the same areas. The size of the population can only be guessed at, but there must have been at least a thousand pairs. A single autumn flock of over 600 individuals was counted in the Suffolk Brecks in the 1940s. Survey work undertaken for the British Trust for Ornithology's breeding bird Atlas in the early 1970s showed that stone curlews still bred in Dorset, Wiltshire, Hampshire, Berkshire, Sussex, Kent, Hertfordshire, Essex, Cambridgeshire, East Suffolk, the Norfolk and Suffolk Brecks and in north-west Norfolk. The population

was estimated at about 300 pairs. Recent information indicates a continued decline in population and a contraction in the species' range. Stone curlews are now either extinct or precariously rare in Dorset, Sussex, Kent, Hertfordshire and East Suffolk. Combining survey results from RSPB staff and birdwatchers during the period 1985-88 gives a current national population estimate of about 160 pairs. Of these about 90 pairs are found in Breckland, with about 35 pairs in the Norfolk part. The species still occurs in West Norfolk north of the Brecks, but its distribution is fragmented and poorly documented. It seems unlikely that the county total is more than 50 pairs.

The long-term decline in the numbers of stone curlews should alarm Norfolk ornithologists. The stone curlew population of Britain has been falling for decades and the available evidence suggests that the decline is continuing. Although the Breckland region of Norfolk and Suffolk continues to be the stronghold it is in danger even there. Action is required to stabilise and, if possible, to increase breeding populations throughout the birds' range in Britain. The RSPB is seeking to develop a strategy for conservation action to save the stone curlew. In this article I will attempt to describe the reasons for the bird's plight and the options available for those wishing to rescue it from extinction. If conservation measures for stone curlews are to be successful they must be based on detailed knowledge of the bird's requirements for feeding grounds and nesting places and the reasons for poor breeding success or survival. This article is largely based on an RSPB research project designed to fill some of the gaps in our understanding of stone curlew ecology.

Recoveries of stone curlews ringed in Britain show that they leave in October and travel through western France and north-eastern Spain to winter in southern Spain and North Africa. Only one ringed bird has been found in sub-Saharan West Africa, but the proportion of individuals travelling so far may be considerable because the chances of rings being recovered there is much lower than in Europe. The birds return to their breeding areas between mid-March and mid-April. There is no indication that birds breeding in different parts of England travel along different routes or have different wintering grounds.

Although stone curlews migrate in flocks and roost communally during the winter they seem to form pairs in March and April on the breeding territory. Frequently the members of a pair arrive at different times. By studying birds marked with colour rings we know that they tend to be faithful to the area in which they bred in previous years and to their mates if both members of the pair are still alive. On average about one in six adult stone curlews die in the course of a year.

Egg-laying begins in mid April. The nest is a scrape made by the male into which small stones and rabbit droppings are thrown by both birds. The usual clutch is two eggs. Short-grazed breckland heath grassland is the preferred nesting habitat. Stone curlews also nest on spring-tilled arable fields. Vegetated areas are avoided and, wherever possible, the birds select a patch of bare ground with many stones strewn on the surface. Even in April, autumn-sown field crops are too well grown to attract stone curlews. All spring-sown crops are short and sparse enough for stone curlews in mid-April when nesting begins, but spring-sown cereals, peas and field beans tend to become too tall and dense for them by mid May. Some nests in such crops are deserted when the plants become too tall and even if the eggs hatch the birds must move their chicks to more open areas. Crops such as sugar-beet, carrots and maize, which have a more open structure with much ground left bare, can be used for nesting and chick-rearing by stone curlews until late June or July.

Well-grazed breck grassland remains open enough for stone curlews throughout the summer. The persistence into midsummer of suitable conditions for nesting is important because their eggs take about 25 days to hatch and the chicks 50 days to fledge. If breeding failure occurs the birds can re-nest after 10-15 days. Hence if areas of sparsely vegetated ground are only present in spring there may be insufficient time for the birds to breed successfully.

Stone curlew chicks leave the nest soon after hatching but usually remain nearby until

they fledge. For the first two weeks of life most of their food is brought to them by their parents and the young birds remain concealed for most of the time. Even after the chicks begin to find prey for themselves the parents continue to provide much of their food.

Predators take a considerable proportion of eggs and chicks. Crows, hedgehogs, foxes and human egg collectors take stone curlew eggs. Foxes seem to be the main predators of chicks. Losses to predators tend to be more severe on semi-natural grassland than on tilled land, perhaps because there is more cover and alternative prey in these areas than on arable farmland. The laying of replacement clutches after failure occurs up until late July.

Stone curlews nesting on arable farmland are at risk from agricultural operations. Rolling of cereals and weed control cultivations in row crops can destroy eggs and kill or maim chicks. Spray irrigation can also cause birds to desert when the equipment is set up near a nest. The parent birds' superb camouflage and evasive behaviour is valuable protection against predators, but acts against them in this situation because it is difficult for farmers to locate nests and broods and avoid damaging them. Recently RSPB species protection wardens have been working in collaboration with farmers to improve the breeding success of stone curlews nesting on arable farmland. Nests are located and the eggs weighed and measured so that their stage of development can be determined. The farmer is advised of the location of the nest and the probable hatching date. Steps can then be taken to avoid the nest during any farming operations. It is more difficult to protect chicks than eggs because they move around the field. It is sometimes possible for the date of a farming operation to be brought forward so that it occurs before the eggs hatch. If this is not possible the chicks are carefully watched as the tractor works the field and temporarily picked up until the area has been worked.

By monitoring the breeding success of stone curlews nesting on arable land we have shown that the average annual production of fledged young per pair is improved by about 40% by nest and chick protection measures. Without protection the breeding success of stone curlews on arable land tended to be less good than for those on semi-natural grassland, but protection made birds in the two habitats equally successful. Our initial estimates of survival rates of colour-ringed birds indicated that this improvement in breeding success may be critical in reversing the downward trend of the stone curlew population.

Even if conservation measures are successful in producing more young stone curlews this will not increase the breeding population unless there is suitable breeding habitat available for them. The importance of sparsely vegetated ground for nesting has already been discussed. However, the birds also require areas in which they can feed. It is impossible to gain a proper impression of the feeding habits of the stone curlew by visual observation. The birds are wary of humans and tend to hide when an observer is visible to them. In any case most of the stone curlew's feeding takes place at night. We therefore studied the birds' diet by microscopic examination of faeces collected from their daytime roosts. It was possible to reconstruct the diet of wild stone curlews by counting prey remains in their faeces. Allowance was made for losses of some fragile remains during passage through the bird by using information gained from trials with a captive-bred stone curlew at London Zoo which was fed on known quantities of a wide range of potential prey.

It was found that the main foods of the stone curlew are earthworms, woodlice, millipedes and beetles. Occasionally small birds, mice, voles and shrews are taken. Most of these prey are common and widespread in many habitats, but studies of the foraging behaviour of stone curlews indicated that the birds can only hunt for them successfully in certain situations. We trapped adult stone curlews and clipped small radio-tags to their central tail feathers. The tags were less than 1% of the bird's weight and could be located from a distance of about a kilometre. They enabled us to track the birds throughout the day and night without disturbing them.

As anticipated, much of the birds' feeding activity took place during the hours of darkness.

During the incubation period the members of the pair took turns to feed while their partner covered the eggs. In most related birds one parent incubated throughout the night, but we found that stone curlews changed over at the nest by night much as they did during the day. This study also revealed that, although much time was spent feeding near the nest, the birds also visited scattered feeding places over two kilometres away. Birds fed further from the breeding territory before laying and during incubation than they did after the chicks had hatched. When the birds were feeding young, single food items were ferried to the chicks in the parent's bill, so long flights to and from distant feeding places would probably have been too demanding in time and energy.

Stone curlews are highly territorial around their nests, but certain feeding areas were used by birds from several different pairs. Favoured feeding habitats were short-grazed breck grassland, ley grass grazed by sheep or outdoor pigs and open areas of spring-tilled crops like those used for nesting. On arable fields the birds often fed near the field edge, probably taking invertebrates from the grassy margins. Heaps of manure, dumped in preparation for spreading on arable fields, also attracted stone curlews which fed on insect larvae living in them. Stone curlews probably detect their prey by sight. The prominent lemon-yellow irides of their huge owl-like eyes virtually disappear by night as their pupils open to gather as much light as possible. The birds' ability to see prey on the surface of the soil in dim light is probably critical for their foraging success and sparsely vegetated ground or a closely grazed sward is therefore required for hunting. Hence grazing by livestock and rabbits influences the feeding habitat of the stone curlew in two ways. Dung from these animals acts as food for some of the soil invertebrates that stone curlews eat and grazing keeps the vegetation short enough for the birds to be able to detect their prey.

This detailed information on the habitat requirements of stone curlews for nesting and feeding helps to explain why the birds are much more abundant in some areas with apparently suitable soils than in others. Short-grazed breck grassland is the preferred habitat because it remains suitable for nesting throughout the summer and because it holds large numbers of accessible prey. It also acts as a feeding ground for birds nesting on arable land nearby. On arable farmland away from breck grassland stone curlews occur at much lower population densities; at best one tenth of those on continuous areas of breck heath. The highest population densities on arable farmland occur where there is a high proportion of row crops like sugar beet and carrots, that act as nesting sites throughout the spring and early summer, mixed with ley pastures grazed by sheep or pigs. The presence of livestock is beneficial in providing the birds nesting on tilled fields with rich feeding grounds. Inclusion of grass in the crop rotation probably also increases the abundance of soil invertebrates when the fields are growing crops.

The stone curlew has declined for several reasons. Conversion of its best habitats, breck grassland and chalk downland, to arable farmland and commercial forests has resulted in substantial losses. In addition, many of the remaining areas of these habitats have become unsuitable for stone curlews because they are used less for grazing livestock than formerly and because their rabbit populations were decimated by myxomatosis and have not recovered. Most of these areas have been colonised by rank grass, gorse, scrub or self-set pine trees. Even the large expanse of breck grassland in the Stanford military training area is now almost entirely unsuitable for stone curlews because of undergrazing and lack of rabbits. As a result there has been a substantial decline in the proportion of stone curlews nesting on semi-natural grassland. At present only about one quarter of pairs nest in this prime habitat.

Stone curlews breeding on arable farmland have also declined because of changes in cropping and agricultural practice. In some areas stone curlews formerly nested in fields of spring-sown roots or kale grown as winter feed for livestock and they foraged on the ley grassland and permanent pasture on which the stock grazed in summer. Much smaller

areas of these crops are grown today and many farms in the south and east of England have specialised in growing cereal crops which do not provide good nesting or foraging habitat for stone curlews. Modern tractors and machinery carry out cultivations rapidly and provide less opportunity for chicks to escape being damaged by them.

What can be done to save the stone curlew from extinction as a breeding bird in Britain? Increased levels of grazing of breckland heaths and downland are required to recreate the stone curlew's prime habitat. The designation of Breckland by the Ministry of Agriculture as an Environmentally Sensitive Area has the potential to achieve this. Under this scheme farmers are receiving financial encouragement to graze heaths with sheep and cattle. More reserves grazed by enclosed populations of rabbits like that at Weeting Heath would also be of great value. In recent years rabbits have been intensively controlled throughout the Stanford military training area, even in parts that are remote from arable farmland where the rabbits pose a threat to crops. There may be a change in this practice which would help to regenerate suitable habitat in this former stronghold of the species in Norfolk.

At present most of Britain's stone curlews breed on arable farmland where they are vulnerable to changes in cropping patterns and farming practice. Increased growing of spring-sown row crops rather than cereals would increase the amount of farmland habitat for stone curlews as would an increase in the keeping of livestock on farms that were formerly entirely arable. The recently introduced set-aside scheme to reduce cereal surpluses by fallowing cropland could be used to provide new nesting areas for stone curlews, but the fallow land would need to be managed to reduce its vegetation cover if it was to be suitable for the bird. The management to produce such habitat is not permitted by present regulations, but as the scheme is still being refined they could be modified to aid this rare species. Long-term fallowing of the same piece of ground would increase the chances of the birds adopting such sites as traditional nesting places. However, stone curlews breeding on arable farmland are liable to poor breeding success unless their eggs and chicks are protected from damage during farming operations.

Habitat restoration measures to increase the proportion of the stone curlew population in semi-natural habitats seems to offer the best long-term prospects, but continued protection of the farmland nesting birds to maintain their production of young is likely to be necessary for some time to come. The survival of a viable population of stone curlews in Norfolk, as elsewhere in Britain, will depend on strenuous efforts to restore and create habitat for them and maintain their breeding success. The stone curlew attracts much good will from the Ministry of Defence authorities and farmers as well as from bird conservationists. It will need all of its friends if it is to have a secure future as a breeding bird in Britain.

I am grateful to many farmers and landowners and to the Ministry of Defence for permission to work on their land and for their enthusiasm in helping stone curlews. My colleagues Michael Austin, Chris Bowden, Paul Holness, Mark O'Brien, Glen Tyler and Roger Taylor carried out much of the fieldwork on which this article is based. The work was aided by generous contributions from the Bexley, Lowestoft, Norwich and Vale of White Horse RSPB Members' Groups, H. J. Heinz 'Guardians of the Countryside' Programme via the World Wide Fund for Nature and the Nature Conservancy Council.

Great Yarmouth Little Tern Colony



1989 marks the Centenary of the foundation of the Royal Society for the Protection of Birds, an organisation which has taken an increasingly significant role in the field of conservation in recent years. We offer our congratulations on achieving this milestone and wish them every success for the next hundred years.

We are fortunate in Norfolk that the RSPB owns or manages a number of important Bird reserves from Snettisham in the West, Titchwell on the North Coast, Strumpshaw, Rockland and Surlingham in the Yare Valley, to the new reserve on Berney Marshes at the head of Breydon.

A less well-known success story, which has national as well as local importance is a colony of Little Terns on Yarmouth North Beach. Despite being adjacent to a busy holiday camp a thriving breeding colony of these delightful summer visitors has developed over the last few years.

Peter Allard has summarised the numbers of Little Terns at Yarmouth, showing that from 1950 to 1983 a maximum of 9 pairs have bred, with none at all on 18 occasions. The situation changed during the 1983 and 1984 seasons when part of the north beach was fenced off while a sewer pipe was laid, permitting the terns to nest in the fenced area. The RSPB became involved in wardening the colony in 1986 when 55 pairs raised 95 young. By 1988, following improvements in both fencing and wardening, the colony has grown to 140 pairs raising 244 young.

In 1988 the first Little Terns were displaying on 1st May, with 9 birds present, building up to 50 by 14th May. Two days later fencing and notices were erected and wardening began with an information hut strategically placed on the higher dunes. The first eggs were laid 20th May with the first chicks hatching 12th June. By the month-end there were up to 280 adult birds within half-mile of the beach. The first chick flew 1st July and the last on 8th August. The fence was dismantled 13th August. Only one pair successfully reared young outside the enclosure, although one which nested only a metre inside managed to hatch young despite continued disturbance.

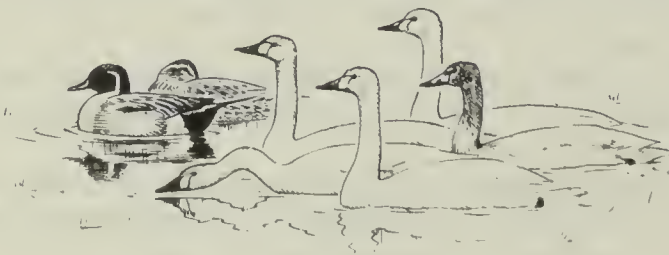
An interesting observation made 2nd July at the height of a hailstorm was when a large number of Little Terns took to the air and flew into the wind with heads thrown back and bills pointing upwards.

The colony represents 25% of the Norfolk breeding population of Little Terns, rearing 63% of known fledged young in the county, and 43% of those fledging in the whole of East Anglia.

Thanks are due to Peter Allard and the Yarmouth Group of RSPB, Mr & Mrs Street and other local RSPB workers for their efforts in achieving this success and for their permission to summarise the Warden's Annual Report as the basis of this note.

Birds of Estuaries Enquiry, 1988 Complete Wash Counts
(organised by BTO Estuaries programme staff)

	24 JAN	21 FEB	20 MAR	17 APR	15 MAY	31 JUL	28 AUG	11 SEP	16 OCT	13 NOV	11 DEC
Great Crested Grebe	19	66	19	52	3	26	42	49	96	61	37
Cormorant	148	198	152	80	33	96	132	294	218	206	281
Mute Swan	7	26	23	17	5	—	15	10	9	13	12
Bewick's Swan	70	106	20	—	—	—	—	—	—	4	—
Pink-footed Goose	2658	5029	910	—	—	—	—	—	60	562	6596
Brent Goose	22283	23166	12590	10207	7166	8	6	509	5908	16736	27612
Shelduck	16332	14176	8876	4380	1141	4213	3921	3805	10470	13928	9042
Wigeon	1429	773	555	2	3	1	15	123	1108	1765	2575
Gadwall	54	57	21	1	5	—	2	14	11	13	41
Teal	1117	399	361	1	—	—	322	639	306	498	269
Mallard	5448	5233	?	327	273	202	689	1442	2355	2759	2656
Pintail	6291	7715	369	—	—	—	124	86	1011	3149	4067
Pochard	34	43	24	—	—	3	14	5	70	74	42
Tufted Duck	32	38	15	18	14	18	22	21	47	37	49
Scaup	17	20	23	—	—	—	—	—	—	3	31
Eider	31	28	2	6	3	30	—	41	33	47	162
Long-tailed Duck	37	18	50	—	—	—	—	—	4	52	35
Common Scoter	327	85	89	16	—	—	16	—	—	1	6
Goldeneye	151	150	146	17	—	1	—	—	33	111	88
Red-b. Merganser	41	138	57	52	—	1	—	—	69	95	62
Oystercatcher	24966	35421	26919	6857	4006	16687	44371	29878	31122	45289	37287
Avocet	1	2	9	1	—	9	3	21	1	1	1
Ringed Plover	46	190	198	148	1217	689	2686	901	421	177	96
Golden Plover	1058	2124	2026	291	2	931	3218	4996	1063	2338	2257
Grey Plover	7170	8385	6955	7844	8662	588	8918	7215	9711	6644	4616
Lapwing	1484	5013	663	66	47	223	988	739	1119	2964	2755
Knot	72352	93666	41390	27970	654	38302	38925	39359	69701	75921	68112
Sanderling	572	477	236	345	253	1652	1024	664	310	298	222
Purple Sandpiper	19	28	—	—	—	—	1	—	—	1	21
Dunlin	29200	46239	43231	36198	21267	42120	21366	19994	39232	65679	35092
Snipe	23	162	56	6	4	14	67	12	31	36	25
Black-tailed Godwit	85	16	76	11	—	719	127	53	34	86	132
Bar-tailed Godwit	7988	10691	2105	151	726	4260	4787	5388	4402	8403	6662
Whimbrel	—	—	—	20	91	572	415	121	—	—	—
Curlew	1933	4814	4183	3242	630	6188	4967	4789	1894	3156	1593
Spotted Redshank	—	—	—	3	—	59	105	111	9	—	—
Greenshank	—	—	—	5	16	241	116	223	22	1	—
Turnstone	608	1995	973	975	342	2596	1850	1377	900	833	1050
Redshank	2661	7501	6434	3587	788	5641	9431	7526	4892	3460	2320



1987/88 Norfolk Wildfowl Counts

National wildfowl counts are organised by the Wildfowl Trust under contract to the Nature Conservancy Council. Swans, geese and ducks are covered, together with certain additional wetland species, at as many wetlands (coastal and inland) as possible from Sept to March. Up to 40 sites are covered in Norfolk: Antingham Pond, Blakeney harbour, Blickling Lake, Breydon Water, Cantley to Surlingham Marshes, Cley, Cockshoot, Fakenham to Gt. Ryburgh (Wensum Valley), Filby, Gunton Park, Hardley Flood, Heacham to Hunstanton, Heacham to Snettisham, Hickling, Holkham Lake, Holkham NNR, Holme, Horsey, Hoveton Little, How Hill, Martham, Mautby, Ormesby, Ouse Mouth, Ouse Washes (Welney), Pensthorpe, Pentney GP, Ranworth, Rollesby, St. Benet's Level, Salhouse, Scolt Head, Sea Mere, South Walsham, Stanford Training area, Terrington East, Thornham, University Broad, The Wash (East shore), Wells and Wroxham.

(The Ouse Washes are administered as a single unit; although Welney is excluded for the 1987/88 winter it will feature in future).

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Sites Counted	26	30	30	32	35	36	32
Little Grebe	21	24	39	16	15	19	11
Great Crested Grebe	96	118	102	38	81	140	125
Cormorant	156	567	559	605	610	726	700
Mute Swan	226	318	334	310	292	404	322
Bewick's Swan	2	45	1108	680	1971	597	21
Whooper Swan	2	45	105	517	589	578	361
White-Fronted Goose	1	10	2	244	817	550	82
Greylag Goose	2500	1886	1450	2165	1957	1653	1598
Canada Goose	779	1148	464	728	952	666	544
Brent Goose	2	4583	9881	11123	10325	13413	3906
Shelduck	1194	2016	8268	9290	12149	10301	5773
Wigeon	1509	7157	12532	18521	20528	13120	9505
Gadwall	579	615	459	462	429	558	387
Teal	2625	2196	2587	2958	4008	3115	1947
Mallard	4943	7005	5843	9148	10452	8287	2827
Pintail	87	1092	1370	3978	5790	5526	261
Shoveler	386	416	531	403	606	624	427
Pochard	163	530	824	1420	1198	1489	806
Tufted Duck	289	337	493	699	1162	1151	946
Scaup	0	0	5	4	20	20	0
Eider	3	28	17	49	26	34	11
Long-Tailed Duck	0	0	4	0	37	18	50
Common Scoter	1	1	264	556	325	85	37
Goldeneye	0	5	104	177	240	264	157
Red-breasted Merganser	4	54	182	65	26	76	44
Coot	1100	1267	1395	2569	2267	1966	1335



Predicting Autumn Highlights on the North Norfolk Coast

S. C. Joyner



One of the highlights of any year, for the regular Norfolk birdwatcher is a visit to the north coast on the day of a large fall of continental migrants. Occasionally, these arrivals involve spectacular numbers of birds and there is always the exciting prospect of seeing one or more rarities. Most observers are aware that falls occur under particular weather conditions and they appreciate that an understanding of weather patterns can help them to predict the likelihood of a fall. Of course, there are weather patterns that indicate a large arrival is highly probable. However, moderate and small falls are less predictable. Forecasting these smaller movements and relating them to weather conditions presents the birdwatcher with a fascinating and challenging exercise. In this article I have attempted to review the factors influencing autumn migration across the North Sea and to illustrate some of the weather patterns favouring the arrival of continental passerine migrants on the north Norfolk coast.

Radar evidence (Lack 1960, Lack and Eastwood 1962) shows that autumn falls on the east coast mainly involve birds which have left the continent via southern Scandinavia. These birds can be divided broadly into two groups. The first are small night migrants, mainly warblers, flycatchers and chats (Whinchats and Wheatears), which have left their breeding grounds in northern and central Europe to migrate, via the Iberian peninsular, to wintering areas in Africa and the Mediterranean. This movement occurs mainly during late summer and early autumn, with a peak at the end of August and beginning of September. The second group consists of wintering passerines, (Thrushes, Goldcrests and Robins) which travel from Scandinavian breeding grounds during October and early November to winter in Britain and southern Europe. Both groups normally start their migratory flight from Scandinavia during the evening and given favourable conditions can fly the approximate 400 miles across the North Sea to arrive at the Norfolk coast the next morning; a journey time of about 14 hours for a Warbler flying in still air.

During October and November an additional movement of passerines occurs along the

North Norfolk coast. This is an east to west passage of winter visitors, typically Chaffinches, Starlings and Skylarks. These arrive in East Norfolk after the short sea crossing from the Low Countries and continue their westward flight parallel to the north Norfolk coast. As these east-west movements originate from central Europe they are not always associated with falls of Scandinavian migrants. This passage of wintering birds rarely results in large numbers landing on the north Norfolk coast. However, when conditions are favourable for migration across the whole of the North Sea these coasting movements may coincide with Scandinavian falls.

Autumn Migration across the North Sea

Before discussing the relationship between migrant arrivals and prevailing weather conditions, it is clearly helpful to have some understanding of the circumstances influencing the migration of birds across the North Sea. The size of migrant falls on the north Norfolk Coast will largely depend on three factors:

Firstly, the number of birds leaving the Continent on a given night. Secondly, the extent to which birds are drifted westwards across the North Sea towards the British Isles, and finally, the circumstances inducing migrants to land on reaching the coast.

Numbers of Migrants Departing

Autumn migration across the North Sea was extensively investigated by Lack (1960). His studies showed that continental night-migrants occur in eastern England primarily in settled weather associated with anticyclones centred over Scandinavia, which on their southern margin produce easterly winds in the North Sea. Moreover, he found that when easterly winds occurred with transitional or disturbed weather, (e.g. on the northern edge of a low pressure system centred just to the south of Scandinavia) the resulting arrivals were not as large, indicating that the number of birds leaving Scandinavia is related to the amount of cloud cover and the strength of the wind. The effect of cloud cover has been studied by Evans (1966). His radar observations indicated that departures of migrants take place almost as often under complete cloud cover as with partly clear skies, but that the total number of birds leaving in complete overcast is fewer.

Lack and Eastwood (1960-1962) found that the strength and direction of the wind does influence the number of migrants departing. They observed that movements occur primarily, though not exclusively, with a following wind within 45° of the heading of the birds, i.e. wind direction N.N.W. to E.N.E. for autumn migrants leaving Scandinavia. Accordingly, with west or south-westerly winds at night in the north-east North Sea arrivals rarely occur the following day — possibly because west and south-westerly winds produce warm nights not favourable for migrants departing. Strong winds in the north-east North Sea and Scandinavia appear not to favour large falls, migrants preferring to leave in light wind conditions.

Also, Lack found that large movements did not necessarily occur in the first fine day after a disturbed spell. This may be related to the ability of birds to detect changes in barometric pressure. Emlen (1975) has shown there is convincing evidence that birds about to initiate migratory flights are aware of the meteorological conditions, and accordingly may be able to predict a prolonged settled spell.

Wind direction in the North Sea

Radar evidence has confirmed that rather than avoiding the long sea crossing, migrants regularly leave Scandinavia on a broad front heading S.S.W. across the North Sea, and their final flight path is the resultant between their heading and the wind direction.

Analysis of the influence of wind direction shows that settled weather with easterly winds throughout the North Sea are the most favourable conditions for large arrivals, but these conditions did not automatically result in moderate or large falls. Factors, such as strength and direction of wind in the southern North Sea are found to influence the size of arrivals; strong cross winds, (i.e. E.S.E. and S.S.E.) causing extensive drift and favouring larger falls. Settled easterly conditions are predictably the most favourable for arrivals (Fig 6), but reasonable falls can occur under other circumstances. For example, moderate arrivals have been recorded with an easterly wind in the northern North Sea and light south-westerly winds in the southern North Sea. Also, of particular relevance for Norfolk with its north-facing coast, are the arrivals associated with a depression moving east across the North Sea during the night giving an easterly wind to the north and north-westerly winds behind it the next morning (Fig 3).

Studies (Lack 1960) on the effect of fog and complete overcast on birds during migration has not shown a strong correlation between foggy conditions and large arrivals. Moreover, radar tracking (Keeton 1979) has indicated that nocturnal migrants can orientate when the stars are not visible using alternative navigational mechanisms, such as the alignment of the magnetic vector of the earth's magnetic field.

Proportion of Migrants alighting at the Coast

The size of any fall will, of course, be a reflection of the number of birds which actually settle on reaching the coast rather than the number passing over and continuing inland. Radar monitoring (Lack 1960) has shown that with light easterly and north-easterly winds throughout the North Sea, night migrants regularly reach the Norfolk coast and continue inland without stopping. Conditions which encourage migrants to land include rain and adverse winds. Frontal rain has often been associated with the very large falls (e.g. September 1956, September 1965, and August 1987), but these spectacular falls are infrequent, primarily because settled anticyclonic conditions favouring large movements rarely coincide with rain at the coast. Head winds probably lengthen journey times and may encourage an immediate landfall, but it is unclear if a higher proportion of birds arriving in the afternoon do, in fact, land on reaching the coast. Experience at Blakeney Point suggest that on occasions migrants continue to land well into the afternoon, but for moderate and small falls there are rarely significantly greater numbers of birds seen in the afternoon compared with mid-morning.

Large Falls

To illustrate the conditions suitable for a large fall, I have looked at the spectacular movements of September 1956 and 1965, and also August 1987. These demonstrate the classic situation of an anticyclone centred over or near Scandinavia and a low pressure system, with associated weather fronts, moving north into the southern North Sea (Fig 2a & 2b). Under these circumstances migrants leave the Continent in settled weather with clear skies and large numbers are drifted into the North Sea on strong easterly winds. As they continue south over the sea they fly into a belt of heavy rain which causes them to make the first possible landfall.

During the last two decades there have been very few large falls in September, mainly due to a persistent flow of Atlantic depressions becoming established across Britain. Frustratingly these depressions usually track to the north of East Anglia giving predominantly westerly or south-westerly winds over Norfolk throughout September.

Rare and Scarce Migrants

It has been known for a long time that falls of continental migrants often include a sprinkling of scarce or rare species. Indeed, this is one of the main reasons why falls are so eagerly

anticipated and keenly observed. The north Norfolk coast is accepted as one of the best areas in Britain for finding these rarer species.

Icterine Warbler, Wryneck, Red-breasted Flycatcher, Barred Warbler and Yellow-browed Warbler all occur regularly in small numbers. Icterine Warblers and Wrynecks are usually found in falls of Scandinavian migrants and occur in correspondingly suitable conditions (Fig 2). Similarly, Bluethroats, which normally migrate south-west during September, are seen in circumstances favouring larger falls. The current paucity of Bluethroats is probably linked to the lack of easterly conditions in recent Septembers.

By contrast, sightings of Barred Warblers, Red-Breasted Flycatchers and Yellow-browed Warblers are not always linked to arrivals of commoner Continental migrants. The normal autumn migration route for these species is away from the British Isles, either south-easterly or easterly. Clearly for these birds to occur in Britain a proportion of the population must migrate in a direction away from their normal standard orientation. These movements in the 'wrong' direction have attracted speculation concerning their cause and mechanism. The debate has centred primarily on two theories, a) random post-juvenile dispersal, and b) active reversed migration. The final explanation may well involve a combination of both.

Lack (1960) analysed autumn records of Barred Warbler and Red-breasted Flycatcher and found that arrivals not infrequently occurred on north-westerly winds and he suggested this was possibly due to post-juvenile dispersal. A further study by Nisbet (1962) linked the arrivals of Barred Warblers and Red-breasted Flycatchers to the prevailing weather conditions in their breeding areas in Germany. He found that arrivals were associated with high temperatures and light south-west and south-east winds on the western edge of central European anticyclones. Nisbet suggested that warm weather in central Europe induced juveniles to reverse their orientation from south-east to north-west. This reversed migration, with favourable southerly winds, overshoots the birds into areas north-west of their normal breeding range, i.e. Scandinavia and the North Sea. Juvenile Barred Warblers and Red-breasted Flycatchers finding themselves over the North Sea may then arrive on the British east coast in light wind conditions not necessarily favourable for arrivals of commoner Continental migrants (Fig 5). Barred Warblers and Red-breasted Flycatchers which arrive in Scandinavia on reversed migration may subsequently become caught up with movements of Scandinavian migrants.

Davis (1966) in his study of the great immigration of September 1965 found that falls of commoner migrants included many Barred Warblers and a few Red-breasted Flycatchers, despite the weather in Germany being most unsettled at the time. He suggested there had been an earlier dispersal or reversed migration bringing these species into Scandinavia prior to the main movement in September 1965. Nisbet (1962), similarly found that the distribution and timing of British records indicates that some Barred Warblers must resume movements in directions other than north-west or south-east after their pre-migratory flight.

Two Siberian species, Yellow-browed Warbler and Pallas's Warbler, regularly exhibit reversed movements in autumn and ringing has shown that the majority of birds involved are juveniles. A study of recent records by Harvey and Bell (1985) and Baker and Catley (1987) indicated that westward movements are associated with easterly winds on the southern edge of anticyclones centred over or near the breeding areas of these species. Baker and Catley have suggested that Yellow-browed Warblers initially in post-juvenile dispersal become drifted on the prevailing wind. The number of birds which occur in western Europe is then a reflection of the size and persistence of anticyclones over their breeding area and the strength of the associated easterly airstream.

It appears that one of the key features, in promising years for Siberian migrants is a large persistent area of high pressure centred over Siberia and Eastern Europe at the end

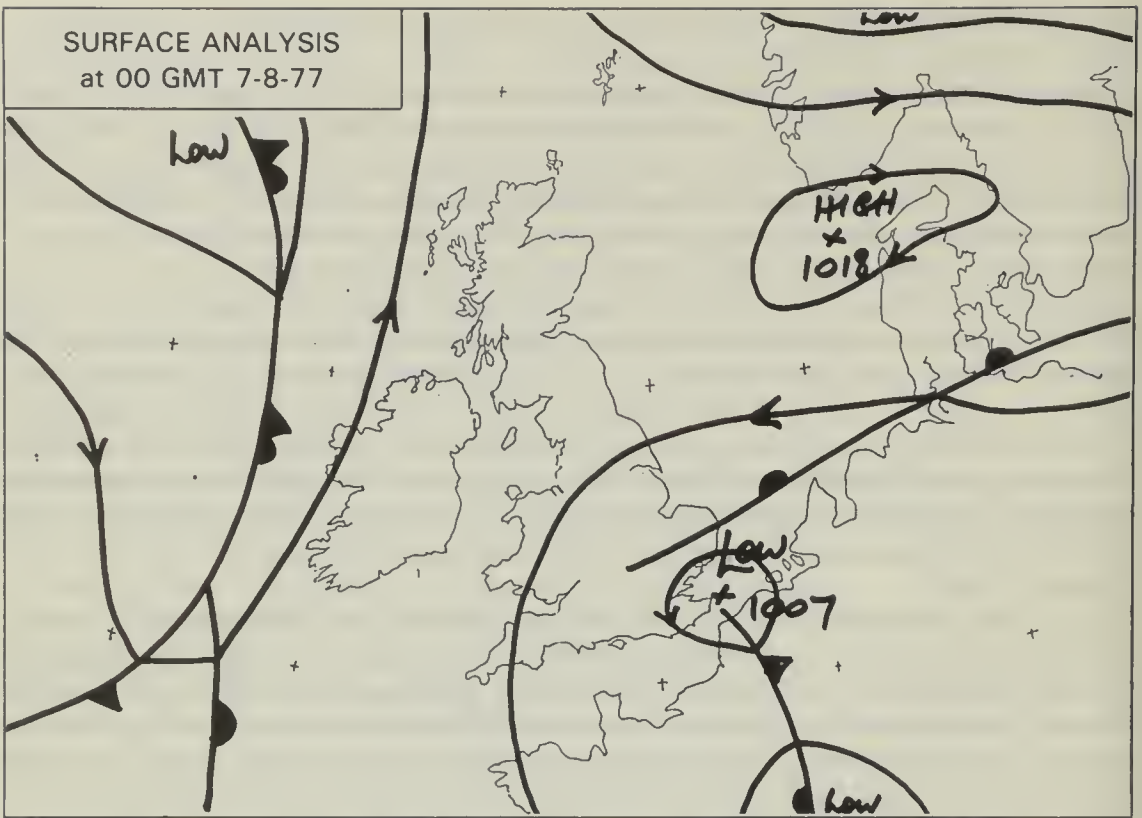


Fig 1. Chart for 7th August 1977. Not an ideal weather pattern with a high centred further south than normal, giving westerly winds over Norway and Sweden. However, with easterlies off Denmark and light north-easterly winds accompanied by rain over the Norfolk Coast there was a small arrival of commoner migrants (predominantly Willow Warblers), together with Wryneck and 8 Icterine Warblers. Fall conditions in early August can produce small numbers of the last-named.

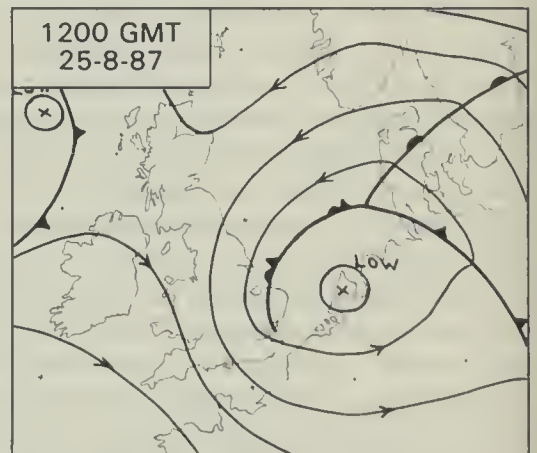
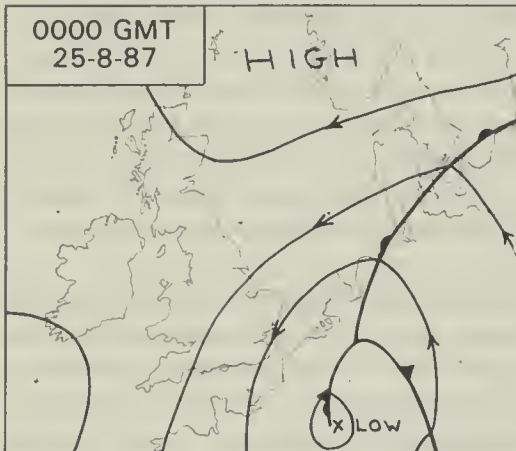


Fig 2(a) and 2(b). Charts for 25th August 1987 showing classic conditions for a spectacular fall with a large high over Scandinavia, strong N.E. winds in the North Sea and low cloud with rain reaching the north Norfolk Coast in the early morning. Species observed included several Wrynecks, 4 Icterine Warblers, Barred Warbler and 2 Greenish Warblers. The second half of August is the best period for Greenish Warblers, and falls accompanied by easterly winds along the southern Baltic region appear to be the most favourable. Before the recent decline in records, Aquatic Warblers occurred in similar circumstances.

of September and first half of October. The number of vagrants occurring in Britain then depends on favourable easterly winds becoming established across the North Sea. The distribution and timing of Pallas's Warbler and Yellow-browed Warbler records across Europe indicates a rather leisurely staged movement occupying several days. On the Norfolk coast Yellow-browed Warblers occur mainly at the end of September or early October, chiefly with arrivals of Continental migrants (e.g. Redstarts and Chiffchaffs), but occasionally they can arrive in westerly conditions unsuitable for commoner migrants. Pallas's Warblers usually occur later, from the second week of October onwards, normally in easterly conditions and often co-inciding with arrivals of Goldcrests.

Examples of Weather Patterns

In this section I have selected seven days to illustrate weather patterns associated with particular species. I trust they are representative examples demonstrating the diversity of conditions producing falls on the north Norfolk Coast. The maps show the weather pattern at 00.00 G.M.T. (except for Fig. 2b). Below each map follows a brief commentary giving details of wind direction and listing some of the birds observed on the north Norfolk Coast that day.

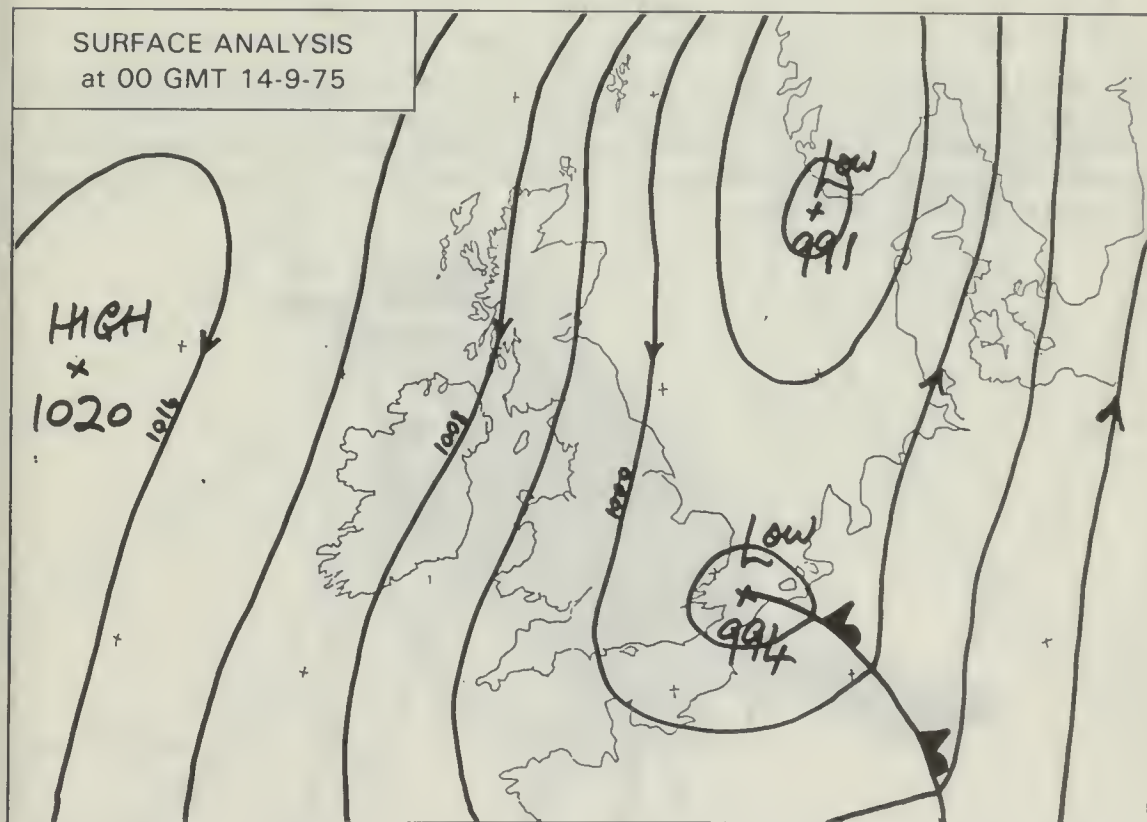


Fig 3. Chart for 14th September 1975 when a very disturbed pattern with a low crossing the southern North Sea giving overnight east winds off the Low Countries and northern Germany, followed the next morning by strong northerly winds down the North Sea. Good conditions for sea watching in mid-September but can result in small arrivals of migrants. At Blakeney Point 14th September, 1975 with a strong N.E. wind backing N.N.W. only a small number of migrants seen, but these included 2 Bluethroats, 2 Barred Warblers, 3 Red-breasted Flycatchers, Wryneck and Red-backed Shrike.

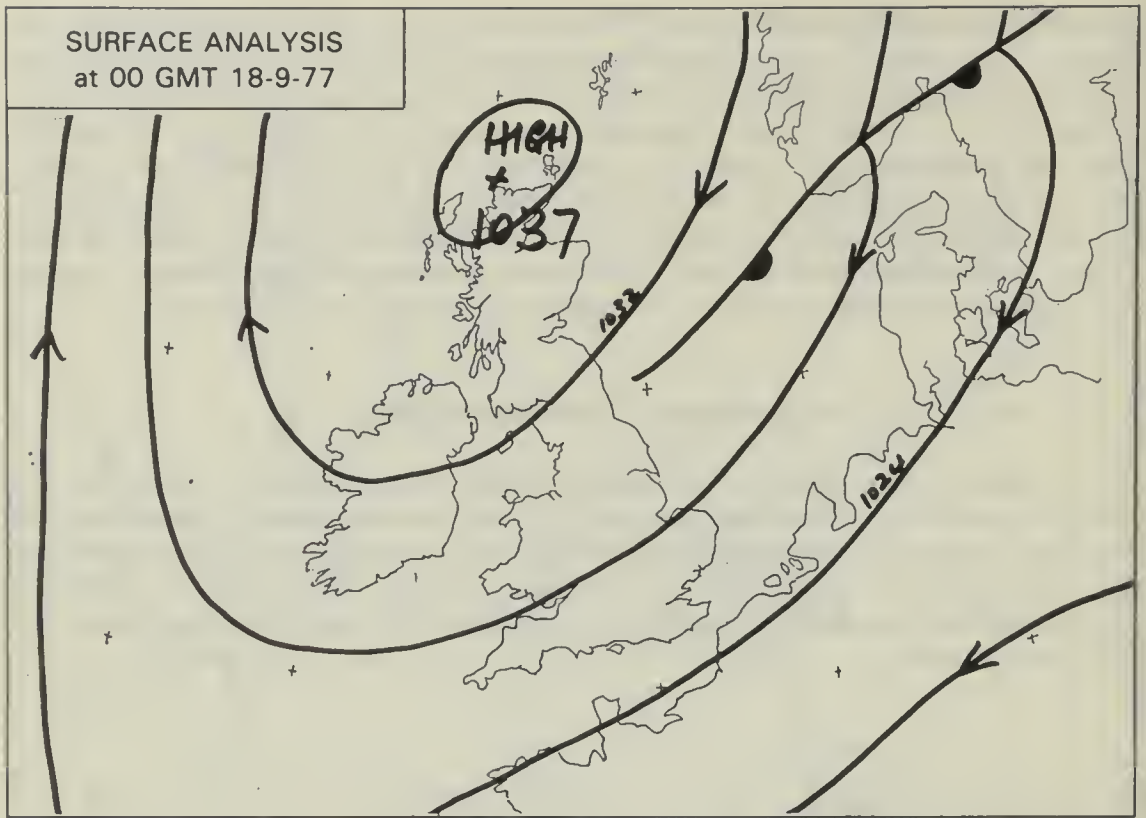
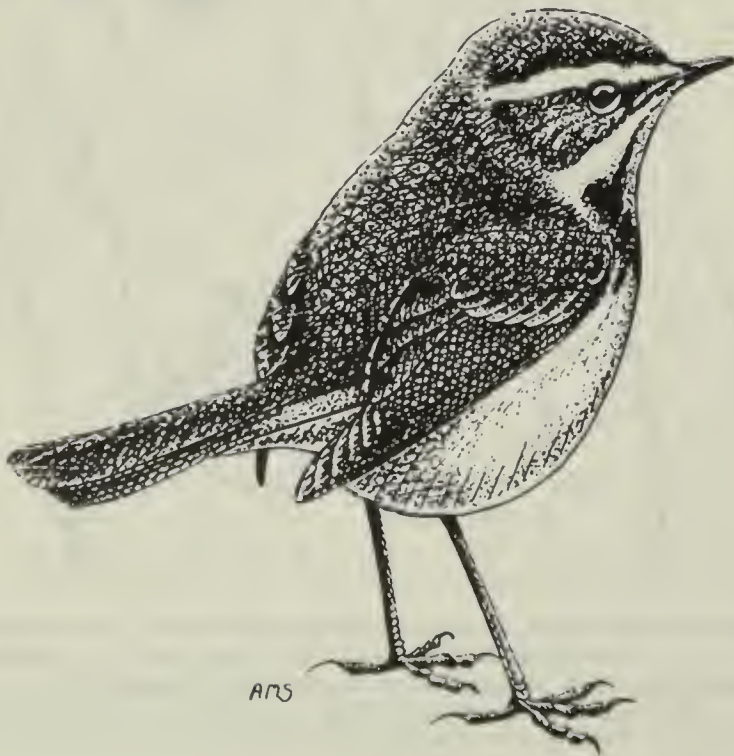


Fig 4. Chart for 18th September 1977. Regrettably an unusual situation in recent Septembers: a large high centred to the north of Britain giving N.E. winds down the whole of the North Sea.

On the 18th September, 1977 an Arctic Warbler was found at Holkham and given similar conditions in mid-September the traditional Fair Isle specialities, such as Yellow-breasted Bunting and Lanceolated Warbler, could well occur on the north Norfolk Coast.



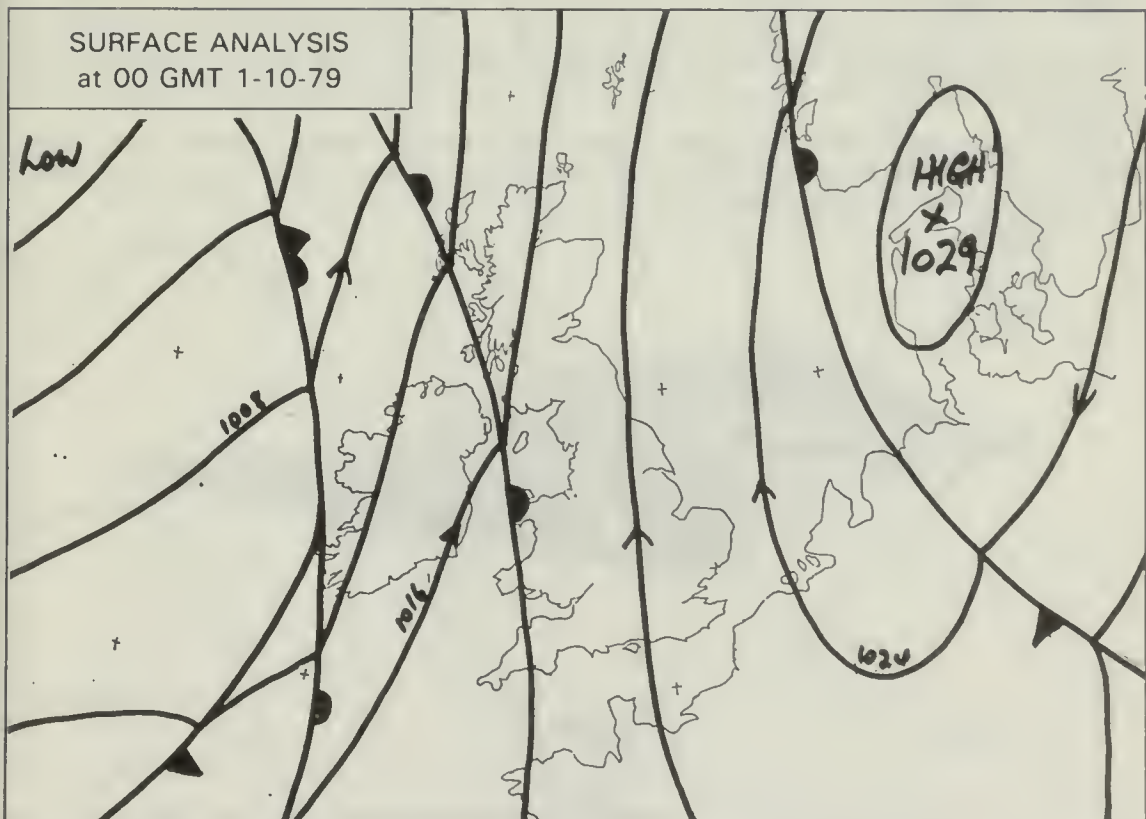
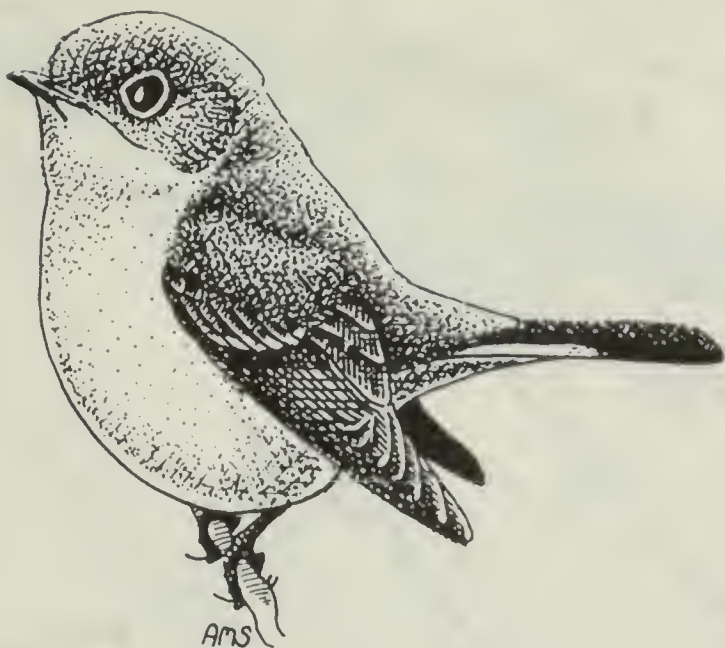


Fig 5. Chart for 1st October 1979 when light S.E. winds across the southern North Sea resulted in a good selection of migrants including 2 Red-breasted Flycatchers, 2 Yellow-browed Warblers and Icterine Warbler on the north Norfolk Coast. At the end of September and beginning of October settled weather over the Low Countries and Germany with light S.E. winds regularly brings Red-breasted Flycatchers and Yellow-browed Warblers — both species often arriving the same day.

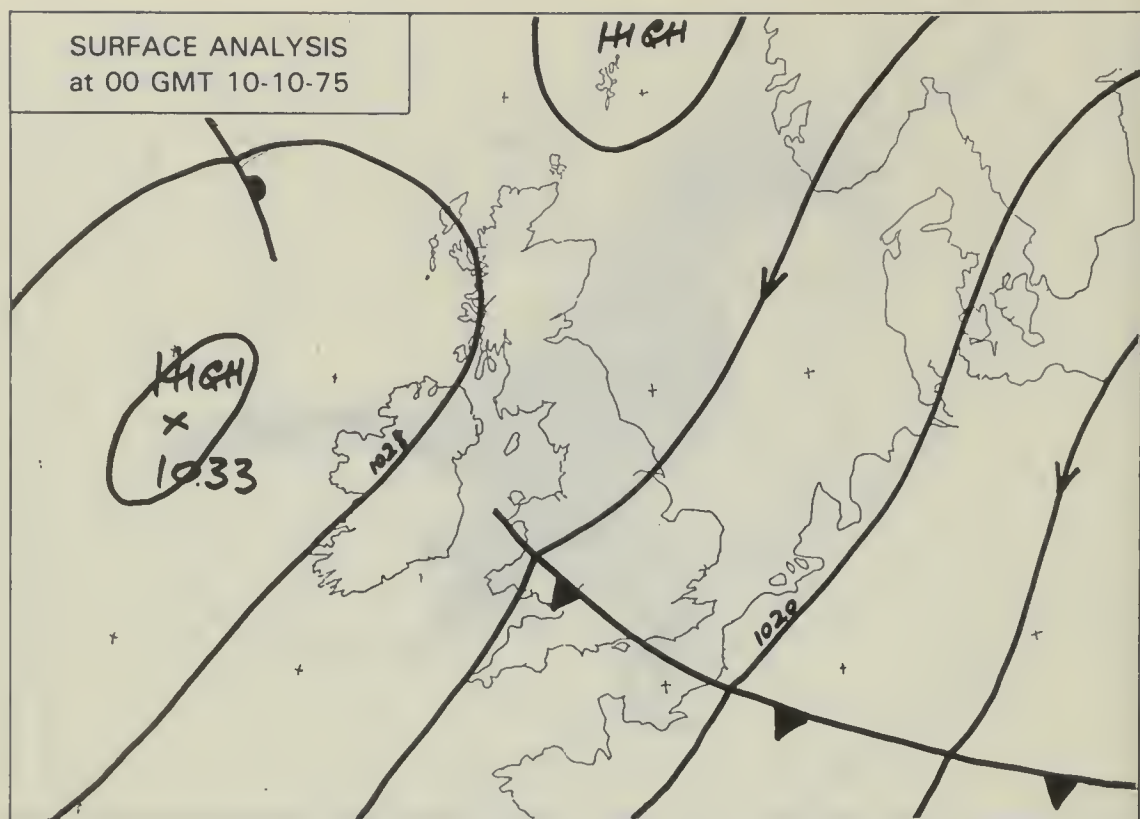
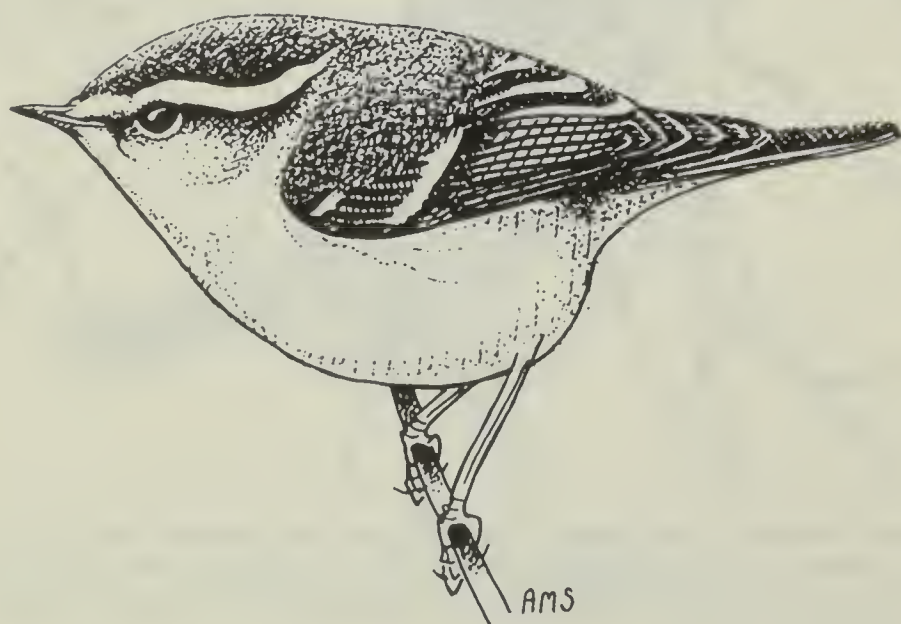


Fig 6. Chart for 10th October 1975 when perfect conditions produced one of the largest ever October arrivals on the north Norfolk Coast. The rarer species included Yellow-browed Warbler, Red-breasted Flycatcher and Olive-backed Pipit.

Easterly winds predominated for the remainder of the month and at times a continuous easterly airstream extended from central Siberia to Britain. In these ideal circumstances unprecedented numbers of Siberian vagrants were seen on the Norfolk coast during October 1975.



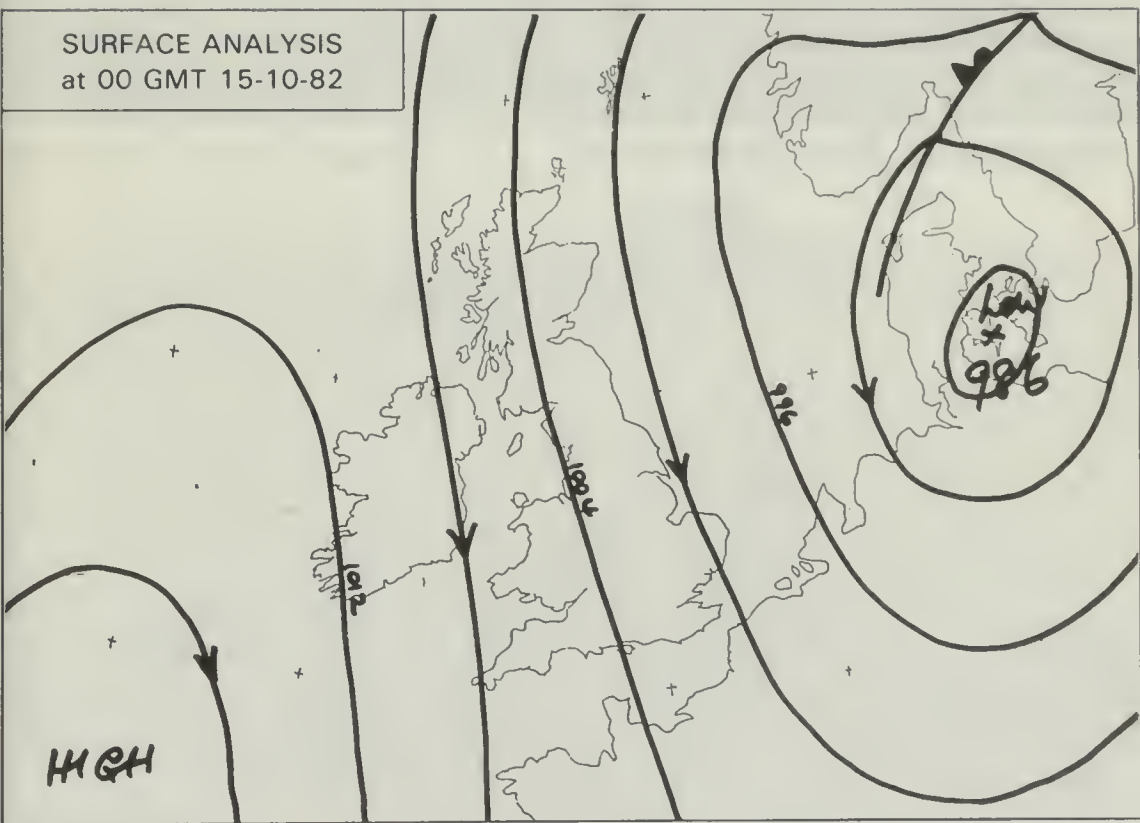
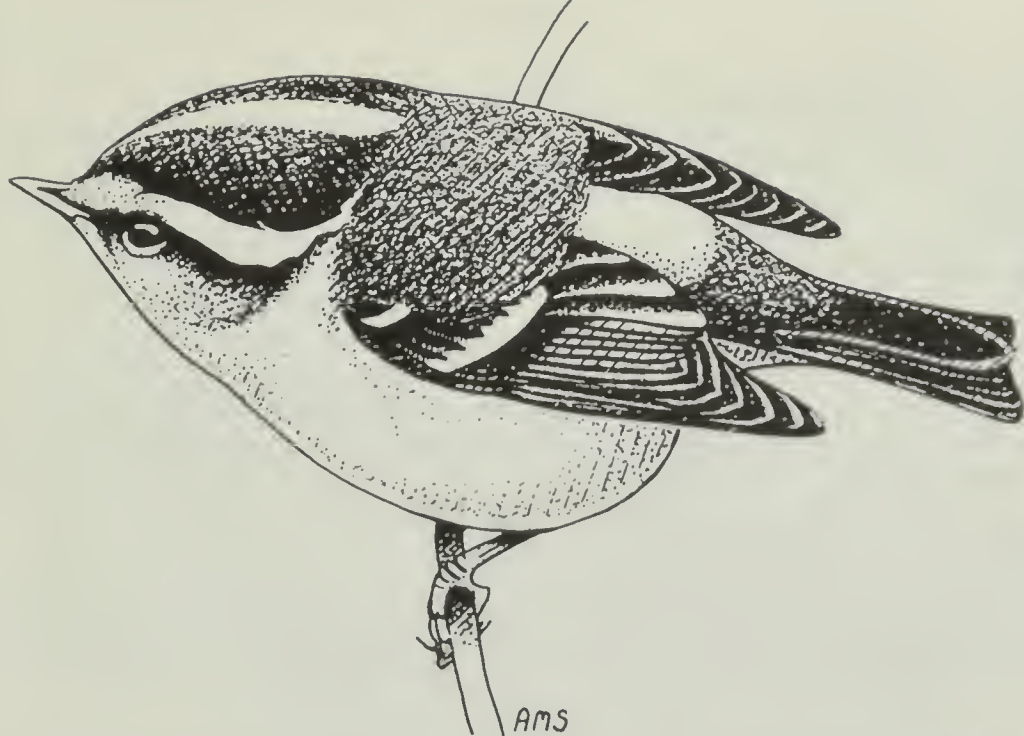


Fig 7. Chart for 15th October 1982. An example of an October fall in disturbed conditions, with a depression centred over Denmark giving easterly winds in the northern North Sea, circumstances which regularly initiate movements of wintering thrushes.

Interestingly the record 12 Pallas's Warblers found on the 15th October, 1982 arrived at the north Norfolk coast on light W.N.W. winds, having probably flown overnight from Scandinavia where they arrived some days earlier on a reversed movement. In early October 1982 record numbers of Pallas's Warblers were seen in Sweden and Finland.

Summary

Radar evidence has shown there is a regular autumn passage of night migrants from southern Scandinavia, heading S.S.W. across the North Sea. In light wind conditions the western flank of this movement passes over the Norfolk Coast. With adverse weather at the coast, such as rain, many of these birds settle rather than continuing inland. With easterly and south-easterly winds which occur with settled anticyclonic conditions, larger numbers of migrants leave Scandinavia and in addition to those crossing England on their normal S.S.W. heading, others that normally pass further east over the eastern North Sea or over the near Continent are drifted to eastern England. The stronger the easterly wind in the southern North Sea the higher the probability of a large fall. During periods of strong westerly winds throughout the North Sea large falls rarely occur, primarily because warm westerly and south-westerly winds are not conducive to migrants leaving Scandinavia.

A number of scarce and rare species are regularly seen in falls of Continental migrants. Some of these rarer species: Wryneck and Icterine Warbler, probably originate from breeding grounds around the Baltic region. Others, such as Barred Warbler, Red-breasted Flycatcher and Yellow-browed Warbler become involved in the main S.-S.W. movement of Fenno-Scandian migrants after an initial flight away from their normal autumn migration route. These reversed movements appear to be linked to southerly or easterly winds associated with anticyclones centred over their east European and Siberian breeding area.

Clearly the number of variable factors influencing migration across the North Sea ensures that it will never be possible to predict the precise occurrence of every arrival of migrants. There will always be days when you visit the coast full of anticipation only to be disappointed. However on other occasions, with marginal conditions, you may be pleasantly surprised by an unexpected fall. But there is no doubt that studying weather maps does narrow the odds in your favour.



References

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Black Brants and a Red-breasted Goose provided dual attractions for wildfowl enthusiasts at Cley. Both rarities remained with the wintering Brent Geese until early March.





Waxwings descended on Norfolk from the last week in October. Ever delightful, these wanderers from northern taiga forests gave pleasure to a wide audience.





Large assemblies of Bewick's and Whooper Swans provide splendid winter scenes at Welney.



Shorelarks at Thornham Point, but will they return? At high water fearless Purple Sandpipers have become a regular feature at Walcott.





Newly arrived Fieldfares find sea buckthorn berries irresistible. Up to 25 ever-shy Hawfinches were regular visitors at Holkham Park during the opening months of the year.



Ringling Report

Allan Hale



During 1988 over 16,000 birds were ringed in Norfolk. There was a significant increase in the number of species handled from less than 100 in 1987 to over 120 in 1988. All of these figures are independent of the work done by the Wash Wader Ringing Group. Notable amongst the species were Hawfinch and Subalpine, Pallas's, Yellow-browed and Wood Warblers, reflecting the particularly good autumn passage experienced on the coast. Additionally, over 560 wildfowl were ringed at Pensthorpe, outstanding amongst these being 222 Tufted Duck.

Reports such as this naturally tend towards the unusual — the vagrants of the ornithological world. This year within the recoveries selected for publication are a selection of movements reflecting known migratory routes, reminding us that birds need not be off course for their journeys to be remarkable. It is however interesting to note that the recoveries include no less than 6 from Ireland. Whilst for a few species this may be expected, recoveries in Ireland for the passerine ringer are few and far between, especially during mild winters.

Thanks are extended to all Norfolk ringers from whose data this report has been extracted. Thanks also to Dr. N. Branson for the W.W.R.G. recoveries and their interpretation.

Readers are requested to refer to the 1987 Ringing Report for an explanation of all the abbreviations used in the recovery section.

NORFOLK RECOVERIES NOTIFIED IN 1988

Fulmar: Not only an interesting movement, but also within a year or so of the Fulmar longevity record.

1	6.8.63	Auskerry, Orkney
x	12.6.88	Sheringham 715km SSE

Shelduck: Note the age of this bird, found at the traditional German moulting area.

1	16.7.72	Cantley
x	30.9.88	Heide, Schleswig-Holstein, F.R. Germany 517km ENE

Wigeon: Pensthorpe continues to shed knowledge on Wigeon movements through Norfolk.

6F	11.3.86	Pensthorpe
x	26.12.86	Thurles, Tipperary 533km

5M	1.1.86	Pensthorpe
x	9.5.87	Kuusamo, Oulu, Finland 2,151km
6M	1.1.86	Pensthorpe
x	15.9.86	Altay, Kazakhstan, U.S.S.R. 4,203km
6F	2.2.86	Pensthorpe
x	18.12.87	Couderque, Nord France, France 228km

Gadwall: This represents a normal movement, over 130 British-ringed birds having been found in France.

3M	30.12.84	Pensthorpe
x	13.1.87	Lion-sur-Mer, Calvados, France 399km

Mallard: It is tempting to think of Mallard feeding on artificially supplied grain as being of local origin. Russian recoveries of this species are however not unusual.

3M	20.12.84	Welney
x	9.5.86	Loukhsky, Karelia, U.S.S.R. 2,367km NE

Pochard:

3M	24.9.83	Pensthorpe
x	23.10.86	Meza Rivermouth, Kostroma, U.S.S.R. 2,584km

Montagu's Harrier: The second British recovery (both concerning Norfolk) in as many years and, it would seem from the report, also not shot!

1	5.8.87	Norfolk
xL	23.9.87	Rocheserviere, Vendee, France 677km SSW

Hobby: This would suggest that the bird was of Continental origin and on passage when ringed.

5M	1.8.87	Hardley
x	7.5.88	Zaandam, Noord-Holland, Netherlands 223km E

Oystercatcher: These are examples of the very small proportion of Oystercatchers at the Wash which are not of Norwegian origin.

6	17.9.82	Thornham
x	12.8.88	Gufunes, Reykjavik, Iceland
8	26.8.80	Terrington
v	4.6.88	Toftir, Eysteroy, Faeroes
1	26.6.83	Fetlar, Shetland
xF	2.12.88	Snettisham 855km

Stone-Curlew: It is not just the passerines that suffer at the hands of the French hunting fraternity.

1	21.5.87	Bodney
x	25.10.87	Escorneboeuf, Gers, France 99km S

Ringed Plover: An old, but interesting recovery, only just received.

1	27.6.80	Hillington
x	2.11.80	Santa Cristina, Pontevedra, Spain 1,362km SSW

Knot: This represents the seventh Knot from the Wash to NE Canada. It must have been at least 19 years old when caught there.

4	7.3.70	Heacham
v	30.6.88	Esayoo Bay, Ellesmere Island, NW Territory, Canada

Curlew Sandpiper:

2F	19.9.85	Terrington
v	22.7.88	Ottenby, Oland, Sweden

Dunlin: The first two birds illustrate the considerable movement of winter Dunlin between estuaries. The latter two were juvenile birds ringed together and re-caught a month later, still together, at the Wash.

3	1.12.85	The Burrow, Portlane, Dublin, Eire
v	26.11.88	Snettisham
4	11.12.85	Rogerstown, Dublin, Eire
v	17.4.88	Terrington
v	15.8.88	Spieka, Oxstedter Bach, Luneburg, F.R. Germany
3	30.7.88	Cairnbulg, Banff & Buchan, Grampian, Scotland
v	28.8.88	Terrington
3	30.7.88	Cairnbulg, Banff & Bucham, Grampian, Scotland
v	28.8.88	Terrington

Bar-tailed Godwit: This represents the first British movement to, or from, Poland for this species.

4M	14.8.83	Reda Mouth, Gdansk, Poland
xF	23.3.87	Scolt Head 1,180km

Curlew:

4	12.8.87	Terrington
x	2.8.88	Arpet Charlie Gas Platform, North Sea
2	27.10.84	Wolferton
x	11.5.88	Jarventausta, Hollola, Hame, Finland

Greenshank:

4	22.8.82	Wolferton
v	10.8.88	Ribe Marsh, Julland, Denmark

Turnstone: This bird was presumably on spring passage to its breeding area in Greenland/NE Canada.

6	8.5.77	Heacham
x	15.5.88	Moskogar, Fljot, Skagafjardar, Iceland

Great Skua: Although a perfectly normal movement, this represents only the 4th recovery in Norfolk.

1	3.7.75	Hoy, Orkney
x	18.10.88	Walcott 730km SSE

Black-headed Gull: An interesting series of 6 juvenile dispersal records from Cantley demonstrating the expected westerly bias. Winter birds in Norfolk were recovered in, or from, Denmark (4), Federal Republic of Germany (3), Belgium (2), Sweden and Finland. Interestingly no less than three of these birds were over 12 years old.

1	22.6.86	Cantley
?	6.1.88	Manchester 272km WNW
1	24.5.87	Cantley
?	20.2.88	Gloucester 269km WSW
1	14.6.87	Cantley
?	24.1.88	Bodmin, Cornwall 488km WSW
1	6.6.88	Cantley
?	18.6.88	Beccles, Suffolk 14km SSE
1	6.6.88	Cantley
?	21.6.88	Eaton Socon, Cambridgeshire 128km WSW
1	6.6.88	Cantley
?	30.7.88	Solway Firth, Cumbria 405km NW

Common Gull: The recovery made no mention of whether the bird was in a breeding colony when the ring was read.

5	12.1.85	Norwich
vv	21.5.88	Copenhagen, Sjaelland, Denmark 808km ENE

Great Black-backed Gull: There are few recoveries of this species concerning Norfolk. This was a colour-ringed bird, and another marked on the same day was reported from Humberside at around the same date as the Weybourne bird.

8	6.12.87	Godmanchester, Huntingdon
vv	23.1.88	Weybourne

Common Tern: The first is a classic example of a bird in its second summer remaining in its wintering area off Western Africa. The second supports the theory that birds from inland sites return to inland sites to breed.

1	18.6.87	Hardley
x	30.6.88	Golf Tefess, Mbour, Senegal 4,549km SSW
1	22.6.85	Hardley
x	28.7.88	Buckhurst Hill, Essex 145km SW

Guillemot:

1	24.6.88	Ceann Ousdale, Helmsdale, Highland, Scotland
x	18.11.88	Bacton 667km SSE

Barn Owl: This species is much more sedentary than this recovery would suggest

1	15.5.87	North Norfolk
xF	23.7.87	Colne, Cambridgeshire 78km SW

Sand Martin: The northerly movement of the bird from Virginia Water to Cantley is atypical for an adult.

3J	16.7.88	Blackborough End
v	6.8.88	Icklesham, Sussex, 199km S
4M	4.7.87	Virginia Water, Surrey
v	19.8.87	Cantley 192km NE
4	12.7.87	Loddon
v	27.8.88	Isle of Grain, Kent 128km SSW

Swallow: Note the rapid movement of the birds to Landguard, clearly showing departure dates from the Norfolk roost.

2	16.9.87	Cantley
?	22.5.88	Guernsey, C.I. 445km SW
3	19.9.87	Cantley
v	20.9.87	Landguard, Suffolk 71km S
3	16.9.87	Cantley
v	17.9.87	Landguard, Suffolk 71km S

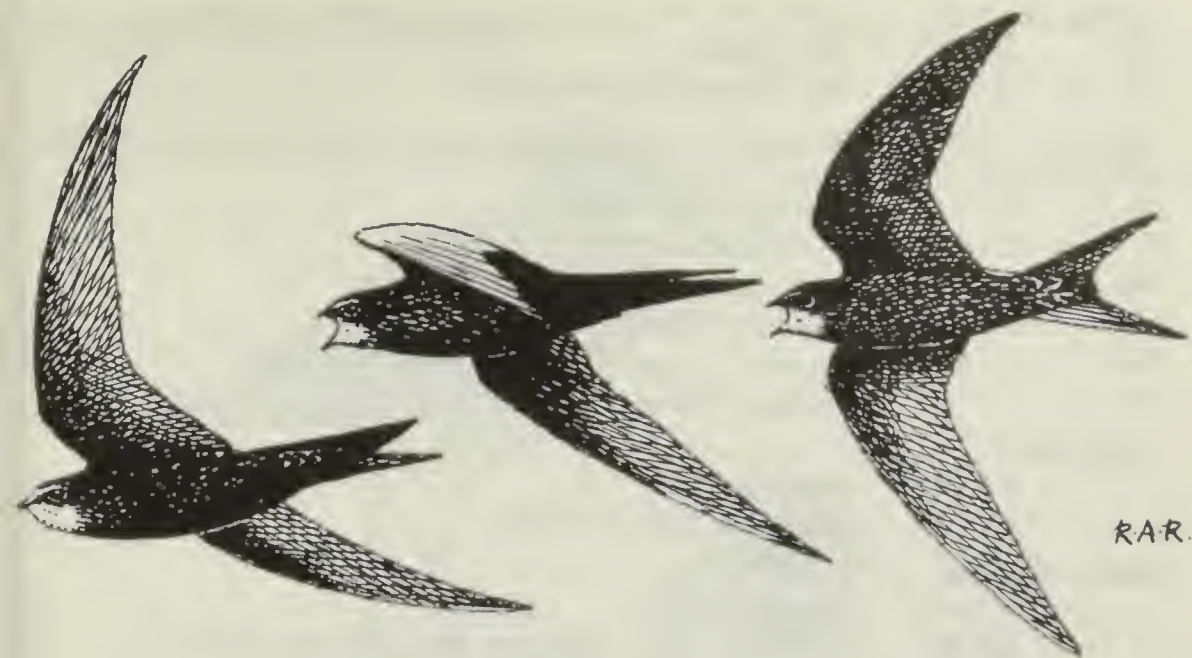
Pied Wagtail: A Suffolk nestling, trapped at roost at Earlham.

1	2.8.88	Eriswell, Suffolk
v	27.10.88	Earlham 52km ENE

Robin: East Coast autumn migrants (mainly from Fenno-Scandinavia) commonly winter in Spain.

3	21.10.88	Ormesby St Margaret
x	16.11.88	Murelaga, Vizcaya, Spain 1,081km SSW

Redstart: It is impossible to establish whether this was a migrant or a locally-bred bird. Note its speed of movement.



3M 11.10.87 Beechamwell
 x 12.10.87 Petts Wood, Greater London 139km SSW

Blackbird: The Finnish population (which is of relatively recent origin) has been shown to regularly winter in Britain. The Danish bird is remarkable in that it represents the third Scandinavian recovery from the same Sheringham garden within a 12 day ringing period. (See N.B.R. for 1987).

4M 21.11.87 West Walton Highway
 xF 9.7.88 Virkkala, Husimaa, Finland 1,678km NE
 5F 16.1.87 Sheringham
 v 20.4.88 Danzigmann, Laeso, Denmark 800km NE

Fieldfare:

4F 9.12.84 Gayton
 x 21.2.88 Carrigart, Donegal, Eire 596km WNW

Sedge Warbler: More than two-thirds of the foreign recoveries of Sedge Warbler are from France.

3 8.8.87 Cantley
 v 24.8.87 Treogat, Finistere, France 661km SW

Reed Warbler:

2 26.7.87 Cantley
 ? 11.9.88 Huelva, Spain 1,811km SSW
 4 18.6.84 Ardennes, France
 v 14.6.87 Cantley 379km NNW
 3 6.9.86 Litlington, Sussex
 v 3.8.88 Redgrove Fen
 3J 2.8.88 Weybourne
 v 7.9.88 Villeton, Lot-et-Garonne, France 958km S

Lesser Whitethroat: This bird is the national record holder for longevity concerning its species.

5F 21.5.83 Kettlestone
 v 22.8.88 Kettlestone

Garden Warbler: This is the first Norfolk bird to be recovered in Africa.

6M	10.9.85	Sheringham
x	20.1.88	Safi, Morocco 2,441km SSW

Blackcap: Wintering Blackcaps are currently being colour ringed to confirm (or otherwise) that they originate from Central Europe.

4F	12.2.87	Bexhill-on-Sea, Sussex
v	17.1.88	West Walton Highway 204km N
3M	17.9.87	Southampton Docks
v	2.5.88	Burnham Market 272km NNE
2M	27.9.86	Hamme St Anna, Oost-Vlaanderen, Belgium
v	15.7.87	Earlham 259km NW

Chiffchaff:

3	4.8.88	Shimpling
v	19.9.88	Icklesham, Sussex 168km S

Willow Warbler:

4	25.4.87	Weybourne
x	7.5.88	Aghanloo, Londonderry, N. Ireland 578km WNW
3	30.8.85	Horsey
v	27.8.87	Queen Mary Reservoir, Surrey 208km SW

Starling: In addition to the recovery published in full, Norfolk winter birds were recovered in the Netherlands, East Germany and the U.S.S.R. reflecting established migratory patterns.

6F	15.1.85	Stoke Holy Cross
x	3.3.88	Rathangan, Kildare, Eire 560km W

Brambling: A typical movement.

5M	19.1.87	Sheringham
x	1.7.87	Storsteinnes, Troms, Norway 2,040km NNE

Greenfinch: All movements outside Norfolk and Suffolk are shown, the Bardsey bird being particularly distant.

5M	18.1.87	East Winch
xF	23.4.88	Girton, Cambridge 61km SSW
4F	28.11.87	East Winch
v	1.4.88	Belmsthorpe, Rutland, Leicestershire 65km W
3M	1.11.87	Bardsey Island, Gwynedd, Wales
v	1.4.88	East Winch 357km E
5M	23.1.88	Swaffham
xF	31.5.88	Upwell, Wisbech, Cambridgeshire 35km WSW
3F	28.12.86	Enfield, Greater London
v	5.4.88	Weybourne 166km NNE
6M	25.4.87	Sheringham
v	26.2.88	Tylers Green, High Wycombe, Buckinghamshire 194km SW
5M	29.3.88	Brooke
x	15.7.88	Kettering, Northamptonshire 144km W

Twite: This record demonstrates the benefits of colour-ringing.

2	? .11.87	Holbeach Marsh, Lincolnshire
vv	9.12.88	Morston

Classified Notes



These notes are based on *Birds of Norfolk* (1977 revised edition) where information regarding status, distribution, migration and ringing recoveries may be found. Attention is drawn to migration observations appearing in the quarterly bulletins of Cley Bird Club and also featuring in NOAs 1988 Annual Report. In addition NARVOS Report for 1988 contains considerable detail regarding distribution in west Norfolk.

The order used is that of K. H. Voous (1977) List of Recent Holarctic Bird Species. Observations refer to 1988, unless otherwise stated. To save space, all but the most essential initials have been omitted. Records are of single birds unless otherwise stated.

Red-throated Diver: Peak counts lowest since 1984: 90 Overstrand Feb 7th, 22 Cley Feb 14th and 22 Paston Nov 20th.

Inland only 2 singles: Heigham Sounds Jan 10th and Thetford GP April 4th-May 4th.

Black-throated Diver: Offshore 12+ records (all singles apart from 2 twice) until March 20th and all between Hunstanton and Weybourne apart from singles off Paston Feb 20th and Caister Feb 25th.

In latter half of year minimum of 25 records with similar distribution commencing with a summer-plumaged bird off Blakeney Point Aug 24th; 3 off Weybourne Dec 3rd. Only 2 East Coast records: Paston Sept 9th and Yarmouth on 14th. In addition Snettisham Pits March 12th-16th.

Great Northern Diver: A minimum of 17 records up to May 25th (Weybourne) and from Aug 4th (Horsey). Two-thirds were from the latter period including 2 off Hunstanton Dec 28th. Distribution much the same as that for Black-throated Diver and all between Heacham and Weybourne except a breeding-plumaged bird off Horsey Aug 4th.

Little Grebe: Breeding records from Breydon (4 pairs in dykes), Berney, Cantley BF, Crimplasham, Devils Punch-bowl, East Tuddenham, Holkham fresh-marshes (8 pairs where breeding first recorded only last year), Pentney, Surlingham Church Marsh and Tottenhill.

Best post-breeding counts: 32 Holkham Park Aug, up to 22 Snettisham Sept-Nov, 19 Wells Boating Pond Nov and 17 Burnham Overy Staithe Dec.

Paston 7 Oct 2nd were the only ones recorded at sea.

Great Crested Grebe: Cley 25+ flying west in a movement which also involved Red-necked and Slavonian Grebes Oct 8th.

Red-necked Grebe: A great many coastal records of ones, twos and threes, vast majority at the mouth of Wash and off north coast, but also up to 3 off Paston on 5 dates in autumn and off Waxham Sept 20th. Last of spring Hunstanton April 5th and first of autumn Weybourne Aug 5th.

Westerly passage also noted with best counts off Cley where 6 west Sept 13th (strong northerlies) and 15 west together with 5 Slavonian Grebes 0645-0900 Oct 8th (strong SW winds). These movements also observable at other points along the north coast — especially Salthouse and Weybourne.

Inland at Alderfen Broad Nov 13th-20th; Berney Feb 13th-17th (photographed); Blickling Sept 18th-26th (photographed); Heigham Sounds Jan 10th; Hickling Sept 14th/15th; Horsey Dec 7th; Pentney GP Oct 23rd-Nov 4th and Snettisham Pits Jan 22nd.

Slavonian Grebe: Well over a hundred observations, two-thirds during Nov. Distribution strikingly similar to Red-necked Grebe, but with a higher proportion between Hunstanton and Holkham Bay. Peaks of 6 Titchwell Nov 16th, 7 Brancaster next day and 8 there Nov 26th and 7 Holme Dec 31st.



Away from most favoured area singles at Walcott Feb 24th, Paston Oct 30th and Lynn Point Nov 18th.

Inland singles at Holkham fresh-marsh March 9th-20th, Ranworth March 19th/20th and Hardley Flood Oct 16th.

Black-necked Grebe: Despite ever-increasing observation remains very scarce: Pentney GP 2 displaying May 13th/14th and 2 (perhaps the same) at Thetford GP on latter date.

Albatross species: 1986: Happisburgh Nov 9th (JDG). The second county record of an Albatross.

Fulmar: Hunstanton 100 pairs Jan 20th; 55 young on ledges Aug 9th, 5 birds back on cliffs by Oct 17th and 20 pairs by Christmas. In addition a record 40 chicks between Weybourne and Sheringham.

Largest movements offshore: 250 Hunstanton Aug 21st, 168 west Paston Sept 14th when 350 west and 40 east off Weybourne where a first-winter dark bird found freshly dead Sept 24th. Inland: Norwich one east June 4th and East Wretham one south-west following day.



Sooty Shearwater: Salthouse July 29th followed by a typical series of records Aug 21st (Hunstanton) during strong NW winds to Sept 29th (Gorleston) with notes received from 14 dates during this period. No particularly high counts but 7 north Yarmouth Sept 13th, 30 Cley the same day and 7 west there following day when 12 off Weybourne.

An interlude of a month was followed by an interesting flurry of late birds: 5 Waxham and one Winterton Oct 29th; 2 Hunstanton and one Cley Nov 18th and one Waxham and 2 Titchwell Nov 20th.

Manx Shearwater: Only spring records: 5 Waxham May 28th and 5 Cley June 5th.

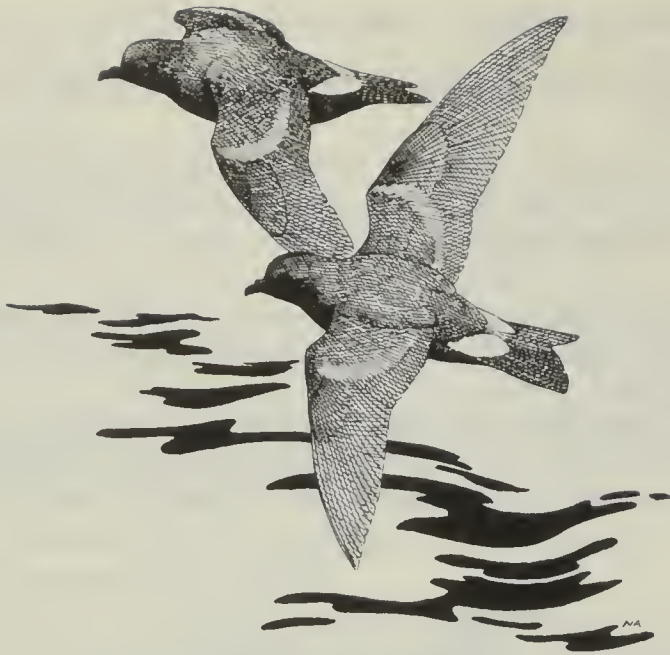
Between July 15th and Oct 7th impressive totals during strong northerlies. The counts included 128 Cley, 592 Hunstanton (0800-1200), 600 Holme and 560 north and 12 south Gore Point all July 15th; 207 Hunstanton and 90 Holme Aug 21st; 50 Cley Sept 9th; 60 Cley Sept 13th and 300+ Holme Sept 14th.

Inland: Wolferton Common Sept 3rd and a road casualty at Beechamwell on 8th.

Yelkouan Shearwater: Single *mauretanicus* off Cley Aug 29th (DJH), Blakeney Point Sept 3rd (SCJ) and Winterton Oct 11th (BWJ PJH).

Leach's Petrel: A remarkably good autumn: Paston Sept 4th; Cley Sept 9th; Cley 11 and Weybourne 13th; Weybourne 6, Cley 12, Holme and Lynn Point where 2 moving down Ouse 14th; Weybourne, Holme and Cley 15th; Cley 3 16th and another there Oct 11th when 5 off Winterton; Cley Oct 19th and Titchwell Nov 20th.

Gannet: Strong easterly autumn movements visible from many points between Hunstanton and Paston. Best counts 220+ Hunstanton Aug 21st; 511 Weybourne Sept 9th; 1,000 Holme 14th; several hundreds in SW gale Cley 21st and 570 Weybourne and 675 Paston Sept 24th.



Inland 3 NE over Flitcham Sept 7th after dense fog in area of the Wash; another in the Ouse King's Lynn Sept 13th.

Cormorant: Peak roost counts: Ranworth 250 Jan, 354 Feb, 340 March, 358 Oct, 368 Nov and 305 Dec. Welney 132 Jan, 147 Feb, 136 March, 133 Nov and 130 Dec. Holkham 150+ Aug.

Large numbers elsewhere included 122 Breydon Jan and 148 Narford Sept.

Breeding attempted at Narford with 2 nests under construction and 2 birds sitting May 8th but no young reared.

Shag: An amazing year especially for inland records which involved occurrences from Jan to April and in Sept/Oct. Vast majority were apparently wrecked in the west of the county by strong northerlies between late Feb and early April. Mostly ones, twos and threes totalling at least 60 birds Feb 10th to April 11th, but including a phenomenal 22 Tottenham GP March 5th; 6 Wells Boating lake April 4th and 5 Thetford GP next day. Two of the 3 birds which arrived at Oxborough Hall moat March 5th died (the survivor lingered till 29th). Other casualties found at Thornham, Ringstead and East Rudham March 7th-9th. At Dersingham an immature alighted on the school roof March 25th.

Other records from all parts of the coast and in all months with largest numbers as follows: 19 Hunstanton March 3rd; 10 SW there March 8th; 10 west Cley and 10 Paston Sept 12th and 10+ Cromer Pier 13th; up to 5 roosted on Sheringham cliffs in early Oct.

Bittern: Ten regular boomers, divided equally between the reedbeds of the Broads and those of the north coast.

Winter records from Alderfen Broad; Barnham Broom Fen; Filby, Hickling and Rollesby Broads and Thompson in early part of year and in Oct/Nov/Dec at Barnham Broom Fen, Berney, Burnham Deepdale, Catfield, Hickling, Horsey, How Hill, Rockland, Strumpshaw, Sturston and Tottington. One was released from a Coypu trap at Welney.

Cattle Egret: Tunstall, an adult in breeding plumage following the plough Aug 9th (KC) appeared at Minsmere later in the day. The seventh county record.

Additional 1986: Heigham Sounds 2 photographed Sept 27th (SEL).

Little Egret: A breeding plumage bird first at Cley 0500 May 14th (RJE KJ DCO-E *et al*), later at Holkham (SB CHD *et al*) and then flying west over Burnham Deepdale (SWH) and Holme (NOA).

Grey Heron: Heronry numbers as follows: Barton 6, Buckenham Carrs 11, Didlington 2, Fleggburgh Common 3, Hickling (Hundred Acre wood one and Whiteslea Wood one), Hilgay 39, Islington 89, Narford 6, North Elmham 9, Old Hunstanton 11, Potter Heigham (Heigham Sounds 8), Quidenham 3, Ranworth 2, Shadwell one, Snettisham 2, Sparham 18, Sturston 10, Surlingham Broad 3, Upton one and Wheatfen one.

A full county survey of heronries is planned for 1990.

Four flew in off the sea at Blakeney Point Oct 1st.

Purple Heron: Weybourne April 19th (MPT JW), Burnham Deepdale an adult May 4th (DWH) and Burnham Norton a juvenile Aug 21st then daily at Holkham fresh-marsh until 30th (JRMCC *et al*).

White Stork: Blakeney (TA), Stiffkey (RM) and Snettisham (PF) April 1st. Next day at Snettisham again (PF RAI), Hunstanton (CHD) and Titchwell (CBC).

Spoonbill: Ones and twos from April 21st (with 4 east at Salthouse May 14th) at Breydon, Cley, Gimingham Mill (briefly), Hickling, Holkham, Holme, Salthouse, Snettisham, Titchwell, Woodbastwick and Yarmouth. Regular movements between Holkham and Cley fresh-marshes confirmed by presence of a group of 3 including a colour-ringed immature.

A late series of records probably all refer to the same immature from Oct 21st until year-end at Brancaster, Cley, Holme, Snettisham, Titchwell, Wells and Wolferton.

Bewick's Swan: Recorded to March 31st and from Oct 19th. As usual largest concentration on Ouse Washes (Cambs/Norfolk): 3,787 Jan, but only 222 Feb 22nd due to mild weather causing early departure. In addition high flooding on Ouse Washes caused many to move to Nene Washes where lower flooding levels. Six injured birds summered at Welney. In autumn (complete Ouse Washes) 640 Oct, 1,300 Nov and 3,700 Dec 19th (when 2,200 roosting at Welney). At this time 13% young birds.

Wintering birds in Broads/SE Norfolk peaked at 220 Jan, 360 early Feb, 480 Nov and 300 Dec. Newly flooded Berney Marshes attracted 691 Feb 21st, 700 Feb 22nd and 495 March 1st.

Whooper Swan: Recorded at Welney to April 15th and from Sept 30th when 16 arrived. Largest numbers there included 505 Jan (when 582 on complete washes), 423 Feb, 339 March, 200 Oct, 365 Nov and 494 Dec; only 9.7% young. Two injured birds summered.

Broads (Hickling/Horsey/Waxham): Up to 72 Jan, 32 Feb, 45 Nov and 50 Dec.

Bean Goose: 1987/8 winter: Yare Valley. Last 7 departed Feb 15th. 1988/9 winter: Autumn return to Yare Valley from Nov 19th when 138 arrived increasing to 178 by Dec 7th with peak of 350 by Dec 14th. Total of 17 birds again present out of 22 carrying neck collars and identified here in previous winter.

Elsewhere: Hickling/Horsey/Waxham up to 16 till Feb 28th; Cley 3 Jan 26th and Holkham up to 12 Jan 2nd to April 2nd.

Pink-footed Goose: As in recent winters co-ordinated dawn counts on The Wash and on the north Norfolk coast indicated the following figures for the combined wintering population in NW Norfolk: 1987/8 winter: Peak of 18,800 Jan 9th declining to 8,800 Feb 6th. Last 150 at Snettisham April 1st.

1988/9 winter: Early arrival (15) Sept 17th increasing to 67 by 26th, 9,150 Nov 6th, 13,100 Dec 4th, peak of 13,500 Jan 8th and 7,600 Feb 5th.

Possible extensions of range: 100 feeding on Salthouse marshes till fog cleared Jan 17th; also 200 over Northrepps Dec 16th where 22 in winter wheat and 30 in beet next day.

One at Holkham Feb 29th 1988 had been ringed at Martin Mere (Lancs) April 3rd 1987 and was re-sighted there Dec 9th 1987. Elsewhere 60 Cantley briefly Dec 17th.

White-fronted Goose: Holkham/Wells monthly maxima: 265 Jan, 275 Feb, last March 19th, first returning Oct 3rd, 115 Nov and 166 Dec. Breydon/Berney: 14 Jan, 95 Feb

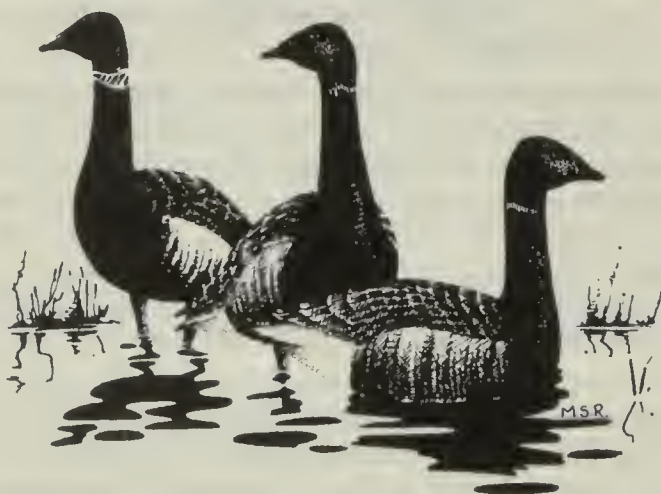
and 23 Dec; elsewhere in Yare Valley 252 Jan, 130 Feb, 80 Nov and 125 Dec. Martham 23 Jan, 150 Feb and 45 March. Welney: 80 Jan 1st-3rd, only 41 by 8th and 8 by 18th.

Lesser White-fronted Goose: The Yare Valley bird reported Jan 26th 1984 (and published in 1985 NBR) now rejected by British Birds Rarities Committee.

Barnacle Goose: Small influx reached north coast Oct 21st when 32 Weybourne flying in thick fog before settling at Cley where 9 remained in area till Nov 6th; 3 at Holkham followed shortly by 4-6 at Titchwell/Thornham. Earlier, 5 in Holme/Thornham/Scolt area from Oct 4th included one ringed bird. Reading the ring number through a telescope indicated it had been marked in Denmark in a previous winter.

Brent Goose: A co-ordinated count on north coast (Holme to Salthouse) in Jan 1989 produced a total of 12,711 birds. Proportion of young in flocks nationally: 34.4%, but in north Norfolk 39.6%. Twelve colour-ringed birds recorded of which 9 present in previous winter. A bird ringed at Salthouse 1974 was sighted in Dec making it at least 15 years old. A leucistic bird returned to Scolt Oct 24th for its seventh winter.

Wash: Ouse Mouth 1,200 Jan 9th; Lynn Point 1,200 March 5th and 1,500 Nov 27th.
Pale-bellied *hrota*: 1-4 at usual localities.



Black Brant *nigricans*: 1/2 remained in Blakeney/Cley, Salthouse/Weybourne area till March 12th with another at Stiffkey and Wells from Oct 27th. In addition single Titchwell Oct 18th. At Lynn Point Jan 1st to April 19th and Nov 20th-27th.

Red-breasted Goose: The bird arriving Dec 7th 1987 remained largely in Salthouse/Cley/Blakeney area till March 2nd. Also traced to Stiffkey and Saxlingham.

Egyptian Goose: The following summary has been extracted from a paper by WJS and GA: Distribution in Britain is now practically limited to Norfolk. 144 pairs were located during the 1988 breeding season the majority in north and western parts of the county. Of this total over two-thirds were in parkland. The population is estimated between 350 and 400 birds. Breeding success is poor. Close observation of the 59 pairs at 23 sites revealed a total of 63 young by July. This low productivity may be partly due to the spread of birds with small goslings extending from Feb to Sept. There is a moult-migration to Holkham lake which has a moulting flock of some 150 birds. Breeders from the Wensum and upper Bure moult at Sennowe and Blickling.

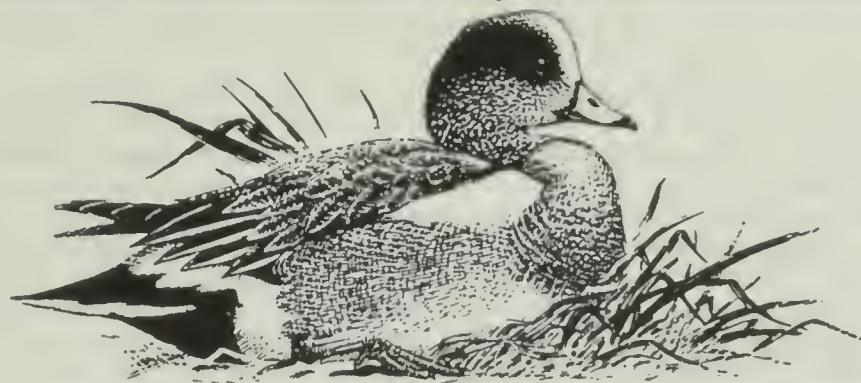
Shelduck: Wash counts at Snettisham included 3,450 Jan, 2,244 Feb, 2,171 March, 870 June, 555 Sept and 830 Oct, moulting flocks included 4,000 in Peter Black Sand/Bulldog Sand area Aug 10th.

Inland breeding at Baconsthorpe Castle, Berney, Bittering GP, Blickling, Cockley Cley, Fritcham, Fleggburgh, Hardley, Hickling, King's Lynn BF, Pentney GP, Rockland Broad,

Shammer, Stanford Water, Strumpshaw, Surlingham Church Marsh, Thompson Water, Tottenhill, Welney and West Acre.

Mandarin: 1-2 at Anmer, Fritcham, Hickling and Norwich; also 9 Guist.

Wigeon: For many years the Ouse Washes have been the most important inland site for wintering Wigeon in Britain. Since the rapid drop in numbers wintering at Lindisfarne in recent years it has now become the premier Wigeon site in Britain. Highest Welney estimates include 7,140 Jan, 7,650 Feb, 5,430 March, 1,770 Sept, 5,380 Oct, 10,850 Nov and 10,980 Dec. Peaks elsewhere: Berney 1,625 and Buckenham 8,460 both Jan.



American Wigeon: A duck shot in error near Holkham Feb 2nd (skin held by NVMcC). Single drakes at Berney May 23rd-24th (PRA KRD LCS) and at Welney Dec 10th-27th (PC CD JBK RN *et al*).

Gadwall: Most impressive counts at Narford (525 Sept 18th) and at Gunton Park (461 Sept 18th and 165 Oct). Elsewhere: Belaugh 57 Nov, Berney 79 Dec, Stanford Water 81 Nov, Strumpshaw 90 Nov, Snettisham 57 Feb, Thompson Water 54 Feb, Tottenhill GP 60 Oct and Welney 113 March.

Teal: Highest counts included 1,245 Welney Jan and 993 there Feb; 800 Titchwell Oct and 500 Tottenhill Nov.

Green-winged Teal: Single drakes at Hickling April 28th-May 1st (AS *et al*), Berney May 7th (PRA LCS), Titchwell Nov 19th-23rd (CHD *et al*) and Tottenhill GP Nov 27th-Dec 12th (MSR DWH *et al*).

A drake at Wells Nov 24th 1985 has been deleted from the county records as stated in 1987 NBR. It formed part of a local waterfowl collection, but we have been asked to point out that Wells Wildfowling Club was not involved in the release programme.

Pintail: Highest totals: Breydon 189 Feb, Lynn Point 236 Feb and 240 March, Narford 866 Sept, Snettisham 640 Jan and 2,230 Feb, Tottenhill GP 70 Nov and Welney 300 Jan and March, 1,000 Oct and 1,200 Nov.

Garganey: Spring arrival from March 27th (Snettisham) followed by observations at Berney, Cantley, Cley (10 July 31st), Gillingham, Hardley Flood, Heckingham, Hickling, Holkham (5 May 30th), Holme, Lakenheath Washes, Ouse Washes, Pentney GP, Reedham, Salhouse, Snettisham, Strumpshaw, Surlingham Church Marsh, Titchwell, and Tottenhill GP.

Single pairs bred successfully at Cley and Ouse Washes (county boundary). Latest Welney Oct 14th.

Shoveler: Largest totals: Berney 123 March, 122 April and 90 Dec; Cantley BF 115 July; Narford 1,280 Oct and Welney 219 Jan and 256 Feb.

Red-crested Pochard: Blickling 3 Nov 20th-24th; Cley July 21st-29th and another Sept 4th; Guist Oct 30th; Lyng GP 2 Oct 8th; Narford Jan 3rd and Strumpshaw Nov 27th-Dec 31st. Local status confused by escapes from collections.

Pochard: Largest counts: Colney GP 187 March, Narford 125 Jan, Pentney 236 Oct and 242 Nov, Strumpshaw 170 Feb, Tottenhill GP 294 Feb and Welney 820 Jan, 1,082 Feb and 746 Dec.

A Pochard × Tufted hybrid drake Tottenhill GP Jan 19th-March 2nd and again from Dec 4th.

Breeding summary: Pochard are known to have bred in the county since 1815 — at Scoulton Mere while Stanford was referred to as long ago as 1836.

Breckland remains a stronghold. Since publication of the revised edition of *Birds of Norfolk* (1977) Breck breeding localities have included Bagmore, Buckenham, Cockley Cley, East Wretham, Fowl Mere, Lynford, Mickle Mere, Smoker's Hole, Stanford, Sturston, Thompson Water and Common, Tottington, Weeting, West Mere and West Tofts.

In Broadland, spasmodic nesting was first recorded in 1928, but it was not until 1956 that breeding became an annual event. Since 1977 Broads breeding localities have included Barton, Berney, Buckenham, Cantley BF, Filby, Haddiscoe Island, Hardley Flood, Heigham Sounds, Hickling, Horsey, Hoveton, How Hill, Muck Fleet, Neatishead, Ormesby, Ranworth, Rockland, Rollesby, Strumpshaw, Surlingham and Wroxham. It is worth mentioning that in early summer 1984 the remarkable total of 49 pairs was recorded on the Flegg Broads (Filby, Rollesby, Lady and Ormesby) alone.

Riviere's *History of the Birds of Norfolk* (1930) records Pochard nesting at Cley in 1923/4 and probably 1929. More recently one/two pairs bred at Holkham Lake in 1984/5 and the recently flooded Holkham fresh-marsh attracted 2 breeding pairs 1988. Elsewhere in the county the only known breeding localities are Swanton Morley GP (1983/4/5), Colney/Bawburgh GP (1984/5), Sparham, Pensthorpe and Snettisham.

Annual breeding details are unfortunately lacking at some sites and traditional localities are abandoned from time to time. However, the distribution remains substantially as shown in *The Norfolk Bird Atlas* (1986) with no further expansion of consequence. The county breeding population at the present time is approaching 100 pairs. Unlike Tufted Duck, Pochard have hardly begun to colonise and breed regularly on flooded gravel pit complexes. Quite why is a mystery.

Tufted Duck: Maximum counts: Bawburgh/Colney GP 195 Feb, Narford 135 Jan, Pentney GP 222 Nov, Stow Bardolph 182 Feb and 500 Nov, Tottenhill GP 380 Nov and Welney 405 Jan. A leucistic individual Stow Bardolph Dec 1st-5th.

Breeding summary: Tufted Ducks have bred regularly in Breckland since 1873 when the first Norfolk nest was found at Merton. The meres and lakes remain a stronghold in the county including 7 regular 'Battle Area' sites.

At the time of publication of *Birds of Norfolk* (1967) the only appreciable extension of range which had taken place was to the Fenland borders at Stow Bardolph, Hilgay and Runcton Holme in 1958.

In north Norfolk, pioneer pairs bred at Blickling and Ingworth in 1957 followed by a pair at High Kelling from 1959, 3 broods at Marsham Bolwick from 1965 and the first brood on the Glaven at Cley in 1966. However, it was not until 1968 when 5 pairs bred in the vicinity of Holt that numbers really began increasing. Salthouse was colonised by 1978; Melton Constable Park, Holme and Titchwell (5 pairs) all in 1980; followed by Brancaster (4 pairs) 1982, Scolt Head Island 1985 and Holkham fresh-marsh 1987 (6 pairs in 1988).

Sporadic breeding had been recorded in Broadland between 1912 and 1928. Then followed a remarkable gap of almost 40 years before Hickling recorded a single brood in 1967 increasing to 10 broods within 2 years. A decade later nesting was first recorded at Coltishall 1979, Filby from 1980 (3 years later 15 pairs were nesting on the Flegg Broads) and also Hoveton; Strumpshaw from 1981 (6 pairs 1987), Rockland from 1983; Cantley from 1984 and both Ranworth and Surlingham Church Marsh from 1985.

Further colonisation in the Fens included Wisbech SF (part Lincs and part Norfolk) in 1969 followed by 15 broods at Welney on the Ouse Washes in 1974 with 100 ducklings there 1975. Surprisingly none nested successfully at Welney 1988.

In Central Norfolk 1970 saw broods on the flooded pits at Colney, Bawburgh, Sparham and Corpusty. By 1984 Colney/Bawburgh held 8 broods and a total of 54 young the following year. Traditional sites are at times abandoned: Lyng Easthaugh contained 75 young in 1979.

Most recent extension of range has been on the edge of the Wash. At Snettisham 6-8 pairs nested 1985-1987, but none in 1988. As remarked in *The Norfolk Bird Atlas* (1986) the Tufted Duck 'has

exploited nearly all suitable expanses of inland water and has begun to nest along sluggish stretches of rivers, in the Ouse Washes and by coastal lagoons". During the survey (1980-1985) they were recorded in 270 tetrads. Each recording unit measured 2km × 2km. This impressive total included 133 units where breeding was confirmed.

Scaup: Largest numbers: Breydon 25 Oct, Heacham 19 Jan, Holkham 30 Oct and Snettisham 20 Feb.

Inland records from Colney GP April 30th, Gillingham Oct 21st-23rd, Stow Bardolph 7 Dec 30th, Tottenhill GP 1-3 Nov 1st-12th and Welney 11 Dec 9th diving for submerged potatoes.

Eider: Highest counts included Hunstanton/Holme 100 Oct, 104 Nov and 95 Dec; Brancaster Staithe 140 Dec and Blakeney Point 131 west Nov 23rd.

Inland: Strumpshaw found dead Oct 18th and Filby Broad drake Oct 24th.

Long-tailed Duck: Most regular off Hunstanton/Holme where 24 Jan, 25 Feb, 50 March, 40 April, 17 Oct, 30 Nov and 13 Dec.

Periodic records elsewhere included Titchwell 37 Nov and 25 Dec; Brancaster 19 Nov and 29 Dec; Holkham 8/9 Nov/Dec; Blakeney 13 Nov; Cley; Cromer 17 Nov; Paston 11 Nov; Waxham 4 Nov and Winterton 3 Nov.

Wash: Snettisham Pits 1-4 Oct-Dec. Inland; Breydon Nov 29th to year-end and Filby Broad Dec 3rd. At this time 5 Holme Broadwater, single Titchwell Reserve, up to 19 Brancaster harbour, 3 Burnham Overy Staithe and 14 Blakeney harbour.

Common Scoter: Inshore counts: Heacham 800 Dec, Hunstanton/Holme 250 Jan and 150 June, Titchwell 400 west Nov 2nd, Cley 200 west Oct 24th, 660 west Oct 30th and 200 Nov 19th and Paston 426 west Nov 20th.

Inland: Colney GP 2 April 9th and Pentney GP Oct 27th.



Surf Scoter: Holme a drake June 19th-24th (PG *et al*). The ninth county record.

Velvet Scoter: Recorded to May 17th and from Oct 2nd. Largest parties: Cley 20 Oct 30th, Paston 16 Nov 20th and Heacham to Holme 19 Dec 22nd and 24 Dec 24th.

Goldeneye: Peak counts: Morston 64 Nov, Brancaster 59 Feb and 55 Dec and Snettisham 43 Jan and 42 Nov.

Smew: 1-5 up to April 8th at Hickling, Horsey, How Hill, Ranworth, Stowbridge, Tottenhill and Welney. At end of year singles at Welney Nov 19th and Wells Dec 7th.

Red-breasted Merganser: Largest numbers: Blakeney harbour 32 Nov, Scolt/Brancaster 47 Nov, Snettisham 84 Feb, 90 Nov and 88 Dec and Heacham 35 Feb and Dec. In Fens singles and 2-4 at Downham Market (Relief Channel), King's Lynn BF, Stowbridge, Ten-mile Bank and Welney till March 5th. Also inland at Blickling (drake) Nov 28th.

Goosander: Winter parties up to 6 (and once 11) at Alderfen Broad, Blickling, Breydon, Downham Market (Relief Channel), Magdalen, Ranworth, Stanford, Stowbridge, Tottenhill and Wighenhall St. Peters.

Ruddy Duck: A pair at Stanford with brood of 5 ducklings constitutes the county's first breeding record.

Elsewhere 1-3 at Alderfen, Barton, Breydon, Blickling, Broome, Cley, East Wretham, Filby, Heacham, Hillington, How Hill, Langmere, Martham, Ormesby, Overstrand (at sea), Pentney, Ranworth, Rollesby, Snettisham, Thompson Water, Tottenhill and Welney.

Honey Buzzard: In West Norfolk where present May 17th to Sept 5th, a male in display throughout this period, but no female observed until mid-Aug. A third bird considered a juvenile in early Sept but uncertain if local breeding successful.

Elsewhere singles Holme April 27th, Norwich May 6th and Holkham Park May 30th.



Red Kite: A spectacular movement of continental migrants moving from winter quarters began March 18th. A summary of sightings is given in date order; doubtless some individuals observed at more than one locality. All records of singles apart from party of 4 on first date:

March 18th: 4 Ringstead/Holme. Singles Alderford, Binham, Brandon Parva, Holkham and Swannington. March 19th: Carbrooke, Cockley Cley, Downham Market, Drymere near Beechamwell, Holkham, Gayton, Grimston, Overstrand, South Runcton and Thetford Warren. March 20th: Frettenham, Gressenhall, Saxthorpe and Wicklewood. March 24th: Hempnall.

April 4th: Buxton and Snettisham. April 6th: Dersingham, Roydon Common and Snettisham. April 10th: Horsey and Shipdham. April 11th: Ringstead. April 12th: Weybourne. April 14th: Hickling. April 16th: Knight's Hill. April 17th Holme and King's Lynn.

In addition Bodney Jan 4th, Wayford Bridge Jan 19th, Hickling May 6th, Norwich Nov 12th and Burnham Norton-Holkham Dec 7th.

Marsh Harrier: County summer total of 34 males and 35 females. 82 young reached the flying stage.

At principal Broads winter roost (shared with Merlins and Hen Harriers) 4 in Jan, 3 in Feb/March and 3 Dec.

At Welney Sept 10th a melanistic type male, very dark but with grey tail and pale patches under primaries — as described in *British Birds* 80: 61-72.

Hen Harrier: Recorded to May 19th (immature male Lynn point) and from Sept 4th (Burnham Norton).

Details available from 9 roost-sites gave peak totals in Jan (25) and Dec (29 birds). At largest Broads roost up to 11 present Jan/Feb and 7 Nov/Dec.

Montagu's Harrier: Recorded April 15th to Sept 9th. A pair (both colour-ringed and both fledged previously from arable crop nests) raised 5 young. In addition 2 females shared

a male; one reared a single young, but the other failed. In the same area 3 (one male, 2 females) non-breeders summered.

Elsewhere total of 22 coastal/Broads migrants with a male in Brecks at Brettenham Heath May 4th.

Goshawk: An increase in records, but due to the possibility of breeding at more than one locality it seems desirable not to publish any details.

Sparrowhawk: Widely reported from numerous localities. In Fritcham/Hillington area prey items included Blackbird, Snipe and Collard Dove. At Northrepps a male took a Great Spotted Woodpecker from the observer's garden bird-table.

Successful breeding reported at 15 sites. Migrants at Winterton totalled 5 March 19th and 7 April 16th.

Buzzard: Occasional singles at Cley, Cockley Cley, Docking, Holme, Hunstanton, Kelling Quags, King's Lynn, Massingham Heath, Mautby, Ormesby, Salthouse Heath, Thornham, Watlington and Winterton. Recorded monthly except Jan and July.

Rough-legged Buzzard: Between Jan and April singles at Catfield, Dersingham, Edgefield, Fritcham, Holme, Horsey/Winterton/Marham (Jan 20th to March 14th), Massingham Heath, Pentney, Snettisham and Wolferton together with Winterton May 13th and Hickling May 27th.

In autumn from Oct 29th onwards at Burnham Deepdale, Burnham Market, Catfield, Heacham, Weybourne to Thornham Point (including Blakeney Point and Holkham), Scolt Head, Sheringham and Winterton.

Osprey: Extreme dates March 18th (West Acre) and Oct 21st (Shereford). Recorded at Blakeney Point, Brancaster, Cley, Cockshoot, Dersingham Fen, Felbrigg, Glandford, Heacham, Hickling (2 May 30th), Holkham, Holme, Horsey, Lyng, Pentney, Ranworth, Roydon, Shereford, Snettisham, Southery, Stanford (2 July 31st), Thompson, Titchwell, Wayford Bridge, Wells, West Acre, Winterton and Wolferton.

Red-footed Falcon: Hickling female May 26th to June 3rd (JSH FR *et al*) was seen once to rob a Barn Owl of its prey.

Merlin: Recorded at well over 40 localities up to May 17th (Weybourne) and from Sept 16th (Salthouse).

Roosting information from 3 sites: Broads (7 Jan, 6 Feb, 3 March and 7 Dec); West (4 Jan, 3 Feb, 2 March and 3 Dec) and Fens (singles up to March and from Sept 25th onwards).

Hobby: Recorded at 55 localities between April 29th (Holme) and Oct 14th (Snettisham). At least 2 pairs bred in Brecks.

Peregrine: Blakeney/Morston Jan 9th, March 1st, March 7th and Oct 24th; Brancaster Staithe Sept 11th; Cley Jan 13th and Jan 26th; Dersingham Fen Jan 9th and 25th, Feb 6th, 15th, 21st and 25th and March 1st; Holme Oct 30th; Sandringham Warren Jan 30th, Feb 6th and March 2nd; Snettisham Jan 24th, Sept 3rd, Nov 19th and 27th; Titchwell Oct 2nd and 7th and Nov 27th; Wells Dec 31st and Wolferton Jan 26th, Feb 6th, Aug 28th and Sept 3rd.

Quail: Calling birds at Burnham Deepdale, Burnham Market (4), Choseley, Holme, New Holkham, Santon, Thornham (2+) and Weybourne.

A migrant on Yankee Ridge, Blakeney Point, May 16th.

Golden Pheasant: Records from Drymere (near Beechamwell), East Wretham, Hockham Fen, Lynford Hall, Merton, Mundford, Narford, Sandringham, Santon Downham, Thetford Warren, Thompson, Wayland Wood, West Harling and Wolferton. No group exceeded 8.



Water Rail: The only summer records: At least 3 nests How Hill; 2 territories Surlingham Church Marsh, 3 territories Strumpshaw and pair with 3 young East Walton.

Spotted Crake: Cley calling April 29th/30th. In autumn: Strumpshaw freshly dead Aug 1st; Titchwell 10th; Welney a tame bird 17th/18th; Cley Aug 30th/31st; Welney Sept 1st; Sheringham killed by cat Sept 8th and Cley Oct 1st/2nd.

Crane: The Broadland population numbered 6 at the start of the year increasing to 7 by the end of the summer and to 9 from late Sept to end of year.

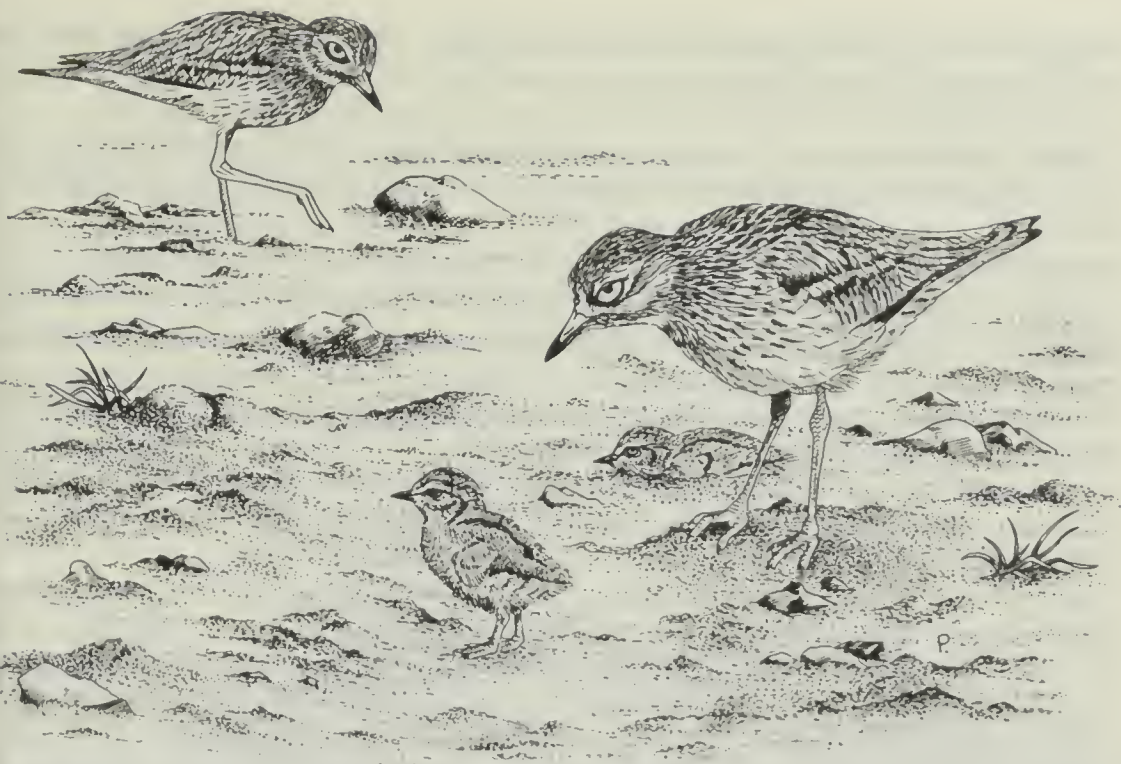
The local population presumably provided the following scatter of mainly spring occurrences: Strumpshaw March 20th; Titchwell and Brancaster 2 April 1st/2nd; Cley, Holkham, Burnham Overy, Titchwell and Holme on various dates between 15th and 21st; Mundford 3 25th; Holkham 2 April 26th-29th and then at Cley May 5th-9th; Cley, Holkham, Snettisham and Wolferton May 6th; Strumpshaw May 7th; Terrington St. Clement 8th; Thornham 9th; Weybourne 13th; Snettisham and Wolferton 17th and Salthouse, Cley and Holme May 29th; Holme and Breydon June 1st; Holme 2 in off sea Aug 16th and Gillingham 2 same day; Breydon and later Haddiscoe Island 2 Oct 10th.

Oystercatcher: Wash (Snettisham) counts included 14,455 Feb 19th, 14,500 Aug 29th and 16,300 Nov 12th; a pure white bird and 2 partial albino all winter.

180 pairs bred Blakeney Point and 83 nests Scolt Head. Inland pairs at 16 sites.

Avocet: Bred at Cley: 85+ pairs with a further 4 pairs rearing 6 young nearby, Titchwell: 42 pairs fledging 50-60 young and Hickling: rearing 2 young.

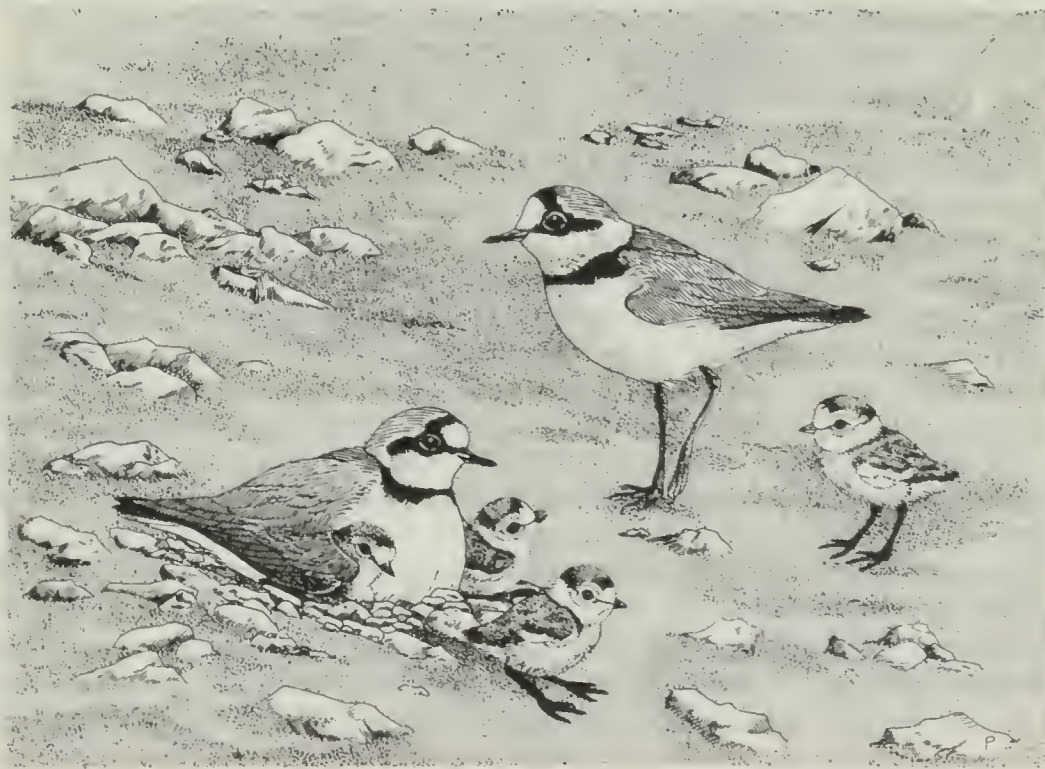
Feb sightings from Cley 16th, Breydon 21st and Titchwell 24th. Tidal Ousemouth again favoured by post-breeding birds with 60-70 present July-Aug and still 9 Oct 1st. At Titchwell peak of 102 Aug 16th. Otherwise a wide scattering of small numbers elsewhere.



Stone Curlew: Reported between March 21st (Weeting) and Oct 13th (Hockwold). County total of 34 nests fledged 23 young (RSPB). Two post-breeding concentrations of 21 and 9 birds in Brecks during Sept. Blakeney Point June 9th.

Little Ringed Plover: Recorded between March 31st (West Acre) and Oct 2nd (Welney) with a minimum of 31 pairs on territory, nearly half of these reported as breeding.

Autumn flocks of 13 Wissington BF and 8 King's Lynn BF both July 11th and 11 Cantley BF July 24th.



Ringed Plover: Breeding season reports of 10-12 pairs Snettisham, 119 nests Scolt but heavy predation by Fox, Stoats and Kestrels and 55 pairs Burnham Overy-Wells Channel. Ten inland pairs.

Coastal concentrations of passage migrant *tundreae* included 250 Lynn Point May 19th followed by 500 Aug 29th. Snettisham counts of 300 July 31st, 305 Aug 28th and 414 Sept 12th.

Kentish Plover: Singles at Breydon male May 1st, Cley/Salthouse male May 1st/2nd, Holkham female May 3rd, Titchwell male May 10th, Berney May 25th and July 10th.

Dotterel: A wintering bird at Holkham Feb 26th to March 6th associated with Golden Plovers.

A light spring passage with 6 Weybourne May 1st/2nd, Cley May 2nd, Blakeney Point May 27th/28th and Docking/Brancaster May 7th.

Autumn migrants at Weybourne juvenile Aug 20th and 2 west Aug 23rd, Salthouse Aug 27th, Cley Aug 23rd/24th and 27th, Blakeney Point Aug 24th and Sept 6th to 12th and Holme 2 Sept 8th.

Golden Plover: Larger flocks than usual in several areas during both winter periods and spring pre-migration assemblies. Largest flocks: Fleggburgh Common 2,000 flew over Oct 16th, Halvergate 1,200 Jan 11th, Coston 1,000 April 13th, Cley 1,600 March 8th, Boughton 1,000 Dec 10th, West Raynham airfield 1,900 Feb 5th and 1,100 Dec 22nd, Newton-by-Castleacre 1,400 April 8th and Welney 2,000 March 30th and April 24th.

Lesser Golden Plover: The Wisbech SF bird of 10th August 1974 remains only as American or Pacific Golden Plover, but the Breydon Lesser Golden of June 8th-17th 1976 now accepted as American Golden Plover following the 'splitting' by BOU Records Committee of the former two races of Lesser Golden Plover.

Grey Plover: Impressive concentrations on The Wash off Snettisham/Wootton where 980 Jan 24th, 950 March 20th, 3,100 May 15th and 1,130 Oct 28th. Smaller flocks 150 at Thornham Point May 19th, 200 Brancaster Dec 26th and 120 May 20th and 131 Breydon Oct 15th.

More birds inland than normal: Fritcham Nov 18th; Pentney GP May 23rd, Sept 17th and Nov 4th and Welney in Jan, March, Sept (max 4), Oct (11 days) and Dec.

Sociable Plover: A juvenile at Titchwell, then later at Holme Sept 25th (AG *et al*) was the second county record.

Lapwing: Two very large concentrations reported of 9,900 Halvergate/Berney Jan 10th and 3,000-4,000 Necton Dec 16th-30th.

Knot: Largest flocks on The Wash (Snettisham) where 30,500 Feb 21st and still 1,000 summering in mid-June; 5,900 July 30th increasing to 22,210 next day; 28,000 Sept 11th and 35,000 Dec 12th. Also a count of 6,000 Wells Dec 20th.

Inland sightings from Welney where 43 in misty conditions March 19th and Gillingham Marshes Aug 21st to 29th.

Sanderling: Counts from The Wash (Snettisham) of 145 Jan 24th, 150 May 15th, 1,130 July 30th, 1,350 July 31st, 720 Aug 28th and 270 Sept 12th.

Elsewhere 87 Holkham Sept 17th and 105 Hunstanton March 8th followed by 111 there May 22nd.

Inland at Hardley Flood (2) May 9th, Wissington BF May 16th and Aug 14th and Pentney GP May 7th and 15th.

Little Stint: A light May passage observed at Hickling (max 5 on 16th), Berney, Salthouse, Cley (max 4 on 14th), Holkham (max 3) and Titchwell (max 4 on 22nd).

A more widespread autumn movement commencing mid-July with birds reported at 15 sites, passage peaking during first half Sept. Maximum counts included 15 Cantley BF

Sept 3rd, 26 Cley Sept 11th, 13 Holkham Sept 7th, 22 Titchwell Sept 11th, Holme max 12 and 15 Welney Sept 9th.

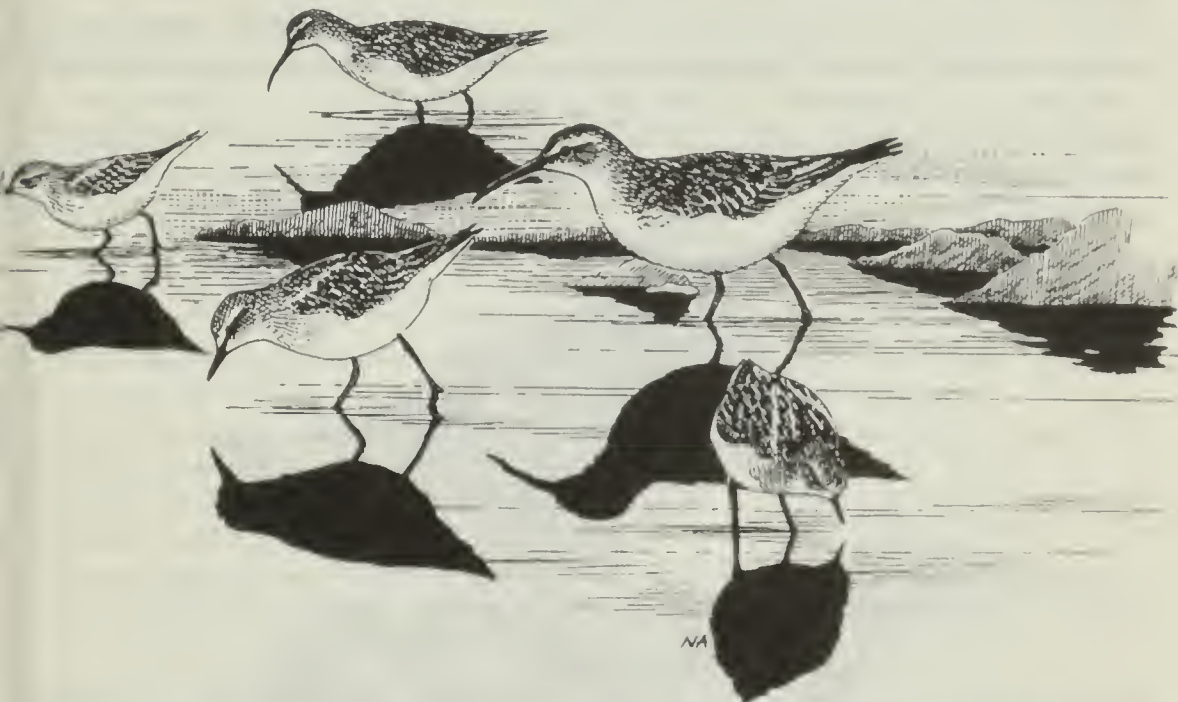
Late individuals at Gillingham Nov-Dec 31st and Cley Nov 27th-Dec 5th.

Temminck's Stint: Spring passage observed at Berney May 2nd-18th (max 4), Hickling April 30th-May 28th (max 2), Cley May 5th-26th (max 3), Lyng Eastaugh May 23rd-26th (max 2) and Welney May 17th/18th. Minimum of 15 birds.

In autumn at Cley July 6th-10th and Aug 19th-28th, Titchwell Aug 22nd-29th, King's Lynn BF July 10th and Wissington BF Aug 1st. Minimum of 5 individuals.

White-rumped Sandpiper: A juvenile at Cley Sept 29th/30th (CRK ETM *et al*).

Pectoral Sandpiper: A good year with birds observed at Cley Aug 28th (PG SJMG) and Sept 27th (HM), Holkham July 12th/13th, July 29th-Aug 6th, 2 Oct 1st and one Oct 3rd (AJ DAH *et al*). Titchwell July 25th/26th (NS) and Welney Aug 7th-15th (JBK *et al*).



Curlew Sandpiper: Spring birds from April 30th at Cley (2) followed by singles at Berney, Breydon and Pentney GP in May and Holkham in June.

A strong autumn passage commencing with a few July adults and peaking with a heavy movement of juveniles from late Aug to early Sept. Recorded at 20 sites with the largest gatherings being 83 Breydon Sept 3rd, 42 Cantley Aug 29th, 67 flying west at Weybourne between Aug 15th-29th, 38 Salthouse Aug 28th, 57 Cley Aug 27th, 43 Holkham Sept 2nd, and 17th, 24 Burnham Overy Aug 28th, 200 Titchwell early Sept, 30 Holme Aug 29th and 250 Ousemouth Sept 6th.

Last bird at Gillingham Oct 24th.

Purple Sandpiper: Extreme dates May 14th (Blakeney Point) and July 20th (Thornham). Counts from main wintering areas: Heacham/Hunstanton 24 Jan, 28 Feb, 25 March, 21 April and 26 Dec; Paston/Walcott 24 Jan, 28 Feb, 21 March, 21 April, 17 Nov and 13 Dec.

A movement of 13 west at Cley Sept 13th. Small numbers widely elsewhere.

Dunlin: Wash (Snettisham) counts of 9,500 Feb 21st, 4,770 mid-April, 5,500 mid-May, 13,880 July 31st, 2,000-3,000 until late Oct increasing to 17,100 Oct 28th and to 20,540 Nov 13th.

An albino at Cley April 1st and Lynn Point April 18th.

Buff-breasted Sandpiper: Singles at Welney July 21st (JBK KW) and Burnham Norton July 31st then Holkham until Aug 16th (DAH *et al*).

Ruff: Wintering birds at Berney 34 in Jan/Feb and 44 in Dec; Cley 20 Jan 2nd; Stiffkey 10 Jan 1st and Welney 45 in Jan and 40 in Dec.

A rather poor spring movement with maximum counts of 24 Welney March 17th, 17 Lakenheath Washes March 19th and 10 Holkham April 13th. No evidence of breeding though lek of 17 Ruffs and 2 Reeves near Welney.

Widespread autumn passage as usual, largest counts being 39 Berney July; 60 Cley Aug 1st, 26 Holkham July 12th, 25 Titchwell Aug 22nd; 40 Welney Aug 20th, 73 Sept 9th, 107 Oct 16th and 99 Nov 5th; 40 Lynn Sept 13th with 28 Oct 31st.

Jack Snipe: Noted up to April 21st (Wissington BF), but not reported in autumn until Oct 19th (Pentney GP). Observed at 22 sites during the year, mostly singles but 3 Surlingham Feb 14th.

Snipe: A county total of 216 drumming birds, the largest concentration being on the Ouse Washes at Welney where 139 displaying in May. Significant numbers of drummers also at Holkham (18), Strumpshaw (18) and Hickling (10).

Highest winter flocks were of 290 Berney (Dec), 100 Martham (Jan), 100 Strumpshaw (Nov), 300 Cley (March), 100 Holkham (April) and 342 Welney (Nov).



Woodcock: 39 roding birds at 22 sites — mostly Brecks and Broads and only giving a hint of true breeding status.

Winter concentrations of 20 (9 shot) Honingham Dec 3rd and 50-60 Cley local woodlands on same date.

Black-tailed Godwit: Spring passage very prominent at Cley peaking at 214 April 19th; presumably Icelandic birds. At Welney a maximum of 100 March 18th. Other smaller parties at several sites including Breydon/Berney, Hickling, How Hill, Holkham, Wissington BF and Lakenheath Flashes.

Peak counts during autumn passage: 76 Cley July 15th, 43 Holkham Aug, 104 Titchwell Aug 8th, 40 Holme July 21st, 200 Wootton July/Aug and 65 Lynn Point Aug 1st.

A few unseasonal reports including 24 Cley Feb 20th, 9 Brancaster/Titchwell Feb 20th and 11 Dec 19th and up to 18 Welney Feb.

Total of 9 pairs on territory in Welney area but only 2 nests of which one successful. Further information has been supplied by RSPB for the Norfolk section of Ouse Washes. These figures are in addition to the totals at Welney Wash already published in NBR:

	<i>Pairs on Territory</i>	<i>No of nests</i>
1985	3	2
1986	9	5
1987	4	3

Spring flooding in both 1986 and 1987 caused considerable disruption.

Bar-tailed Godwit: Largest counts from Snettisham of 5,400 Feb 21st, 1,260 July 31st increasing to an autumn peak of 4,200.

Other counts included 93 Breydon April 30th, 160 Cley (North Scrape) April 17th, 230 Brancaster mid-Feb and 480 Titchwell Aug 30th.

Noted inland with 20-28 Hickling April 30th-May 1st and at Pentney GP 1-2 on 5 dates April-May and 8 Aug 28th.

Whimbrel: Spring passage from March 21st (Cley) while last bird Oct 25th (Brancaster). An unseasonal, lame, individual at Welney Jan 27th.

A substantial spring passage saw flocks of 67 Breydon May 6th and 69 May 11th plus 76 Thornham Point May 8th. Widespread in autumn when main groups included 150 west Cley Sept 1st, 40 Blakeney Point July 16th, 55 Wells Aug 11th, 40 Titchwell Aug 16th, 60 Holme Aug 1st and 300 Ousemouth July 29th flying south inland.

A number of inland records especially on autumn passage: 9 Welney July 26th, 10 Flitcham Aug 4th, 13 Pentney GP Aug 18th followed by 11 there Sept 1st.

Curlew: Maximum Wash (Snettisham) counts 470 March 20th and 1,232 Sept 11th. Birds on territory at Roydon Common as well as breeding at 3 Brecks sites.

Spotted Redshank: A few winter reports: Berney (Jan), Breydon (Jan/Feb and Dec), Wells (Jan-March) and Brancaster (Jan/Dec).

Highest spring passage counts of 7 Berney (June), 11 Cley May 13th, 7 Holkham May/June and 28 Snettisham May 5th.

Largest autumn counts of 8 Gillingham (Aug/Sept), 20 Cley (July/Aug), 54 Snettisham July 31st followed by a peak of 83 Aug 29th and 19 Sept 11th and 8 Welney Oct 20th.

Also reported at Cantley BF, How Hill, Titchwell, Holme and Lynn Point.

Redshank: Largest flocks on The Wash (Snettisham) of 2,678 Feb 21st, 2,671 March 20th, 2,200 July 30th, 3,210 Aug 28th, 3,155 Sept 11th, 3,100 Oct 29th and 750 Nov/Dec.

Marsh Sandpiper: The tenth county record when an adult in summer plumage at Snettisham Pits May 14th/15th (PF RAI). The first county record was as recent as 1979.

Note: The Cley bird July 22nd 1987 was found by M. R. Flack.

Greenshank: Light spring passage from April 14th (Welney), but 22 at Breydon May 7th and up to 10 at Holkham May 24th.

An obvious return movement with substantial counts of 13 Cley Sept 29th, 25 Wells East Hills Aug 3rd, 26 Holkham July 21st and 49 Aug 1st, 30 Brancaster Sept 6th, 16 Scolt Sept 13th, 26 Titchwell Aug 29th, and 20 Sept 26th, 18 Thornham Point Aug 1st, 39 Holme Aug 1st, 11 Snettisham Aug 26th and 12 Cantley BF Aug 26th/29th. Last at Berney Nov 6th.

Green Sandpiper: Wintering birds (Jan-March and Nov-Dec) from 22 sites, mostly singles but 3 Rockland Broad Jan and 5 East Winch and 5 Pentney both Nov.

Spring passage (April/May) more widely reported than normal and involved from 1-4 birds at 12 sites.

As usual widely distributed in autumn, the highest counts being 17 Surlingham Aug 11th, 27 Cantley BF July 24th and 45 Aug 26th, 10 Horsey, 18 Holkham July 23rd and

13 there Sept 5th, 11 Holme July 9th-31st, 11 King's Lynn BF July/Aug and 20 Wissington BF Aug 9th and 25 Sept 22nd.

Wood Sandpiper: Spring passage commenced on the early date of April 16th (Burnham Overy) with 1-4 at a further 10 sites April 28th to June 15th.

A relatively light autumn passage from 12 localities, maximum numbers being 10 Hickling Aug 22nd and 6 Holme Aug 20th. Last at Wissington BF and Gillingham Sept 28th.



Terek Sandpiper: One Holkham fresh-marshes June 18th (JRMCC BRS *et al*) was the sixth county record of a species first recorded during 1975.

Common Sandpiper: Winter records from Cley (Jan-March), Rollesby Broad Feb 27th and King's Lynn BF all Dec and into 1989. Otherwise extreme dates April 17th (Pentney GP) and Nov 3rd (Cley).

Two sizeable spring gatherings: 21 Breydon May 11th and 10 Lakenheath Washes May 13th.

A fairly typical autumn passage, largest concentrations being of 21 Breydon July 25th and 23 Sept 6th, 21 Berney Aug, 23 Cantley BF July 24th and 26 Aug 26th, 15 Hickling Aug 1st, 31 Paston Sept 14th, 14 Holme July 15th-31st, 14 Snettisham Aug 22nd, 21 Lynn Point July 27th, 21 King's Lynn BF July 22nd and 26 Wissington BF Aug 15th.

Turnstone: Largest counts at Snettisham during the autumn: 654 July 31st, 867 Aug 28th, 645 Sept 12th and 200-250 to end of year.

Inland migrants at Gillingham Marshes 2 Aug 6th; Pentney GP April 14th and 3 May 8th and one May 9th; Wissington BF 3 May 6th and Lakenheath Washes May 13th.

Red-necked Phalarope: A female at Holkham April 25th to May 2nd (MSR CHD *et al*) followed by one at Cley July 15th (PG).

Grey Phalarope: An unusual winter record from Horsey Mere Feb 14th (DJH) followed by 4 autumn birds: Cley Sept 13th and 14th, Holkham Sept 17th/18th and Snettisham Pits Oct 10th.

Pomarine Skua: An atypical record of 2 Holme Jan 7th. Also 2 rather late observations of singles from Holme Dec 5th and Heacham Dec 24th.

Autumn passage commenced Aug 22nd and higher than average numbers were seen from many locations around the coast, peak days being Sept 24th (43), Nov 18th (57) and Nov 20th (86) — bracketed figures show county total for each date. Monthly totals: Aug 2, Sept 107, Oct 62, Nov 179 and Dec 2. During the Nov 20th influx 12 off Lynn Point most of whom followed the Ouse inland. An unusual inland record of an immature Chedgrave Oct 1st (photographed by JCE).

Arctic Skua: A few June records: Blakeney Point on 9th, Weybourne on 25th and Holme on 26th.

Autumn passage observed between July 15th and Nov 20th from many coastal sites. Selected peak counts: Paston 52 Sept 12th and 100 Sept 24th, Sheringham 100 Aug 19th,

Weybourne/Cley 70 Aug 21st, 76 Sept 12th with 60 next day, Holme 100 Sept 14th and a late movement of 18 Nov 18th, Hunstanton 150 Aug 21st, 60 Sept 13th, 45 Oct 7th and a late movement of 30 Nov 18th and Ousemouth 300 Aug 21st of which 200 flew inland and 58 on a similar course Sept 12th.

A juvenile inland over centre of Norwich Sept 16th.

Long-tailed Skua: A total of 28 individuals from 8 coastal localities Aug 26th to Oct 8th, passage peaking in Sept. At Ousemouth 6 (including 4 adults) headed inland Sept 12th as very strong northerly winds developed (GMSE). Equally unusual a total of 6 west off Cley during SW gale Sept 24th (GED).

Great Skua: Two winter records: Holme Jan 10th and Hunstanton Feb 29th. Autumn passage first noted July 15th when 6 off Cley, followed by a peak of 30 Sept 13th. Other larger movements included 25 Waxham Sept 13th, 31 Weybourne Sept 24th, 30 Holme Sept 30th, 43 Hunstanton Sept 14th followed by a late movement of 16 Nov 18th though several other Nov reports elsewhere of 1-8. At Ousemouth 7 flew inland Sept 12th.



Mediterranean Gull: An abundance of records again especially from the east of the county. Yarmouth: 2 adults Jan/Feb, an adult March, adult July 12th, 2 adults Aug/Sept, 4 adults + a second winter during Oct and an adult Nov/Dec. Breydon had a 1st summer May 12th-29th, juvenile Aug 24th, adult Aug 25th and 1st winter Oct 13th/16th. Nearby a juvenile at Berney Aug 16th.

Cley/Salthouse/Blakeney Point: 2 adults March 24th, 1st summer May 2nd, May 12th/13th, adult July 22nd and most of Aug as well as Sept 4th, 9th, 12th and Oct 21st, 1st winter Sept 26th and Oct 20th.

Other records included Hickling adult April 30th; Martham 2nd winter Oct 13th; Overstrand 2nd winter Jan 1st-March 10th, 3rd summer July 10th, adult winter Oct 2nd-Dec 31st; Weybourne 1st summer May 11th and June 29th, juvenile Aug 28th, 1st winter Sept 18th and adult Oct 4th; Cromer adult Nov 5th-20th (the Overstrand bird); Sheringham 2 March 24th; Holkham 1st summer July 17th; Brancaster adult Oct 12th; Docking adult Oct 23rd; Titchwell adult March 3rd; Holme May 9th; Hunstanton adult March 3rd/4th and Dec 20th; Heacham Aug 16th, adult Oct 19th and Nov 5th, 2 (adult + 2nd winter) Dec 20th; King's Lynn-Lynn Point 1st winter Feb 7th-28th, 2 (adult + 1st winter) Sept 12th-15th and 1st winter Sept 24th; Snettisham adult March 5th, 2nd summer May 7th/8th, juvenile Aug 19th, 1st winter April 29th, May 6th/8th and 22nd, adult Sept 7th, 1st winter

Oct 8th and 2 different 1st winter at Ashill on Breck border following ploughs Nov 10th and 17th.

Additional inland 1985: Denver Sluice juvenile Aug 3rd.

Little Gull: Several offshore in opening months of year when reported from Paston Feb 23rd, Weybourne 2 Feb 15th, Titchwell Feb 27th and Hunstanton 12 Jan 21st, 6 Feb 13th, 9 Feb 23rd and a single March 1st. Late in the year noted off Brancaster 8 Dec 29th and Scolt 14 Dec 28th.

Small spring passage of 1-6 birds at several sites (mid-April-mid-May) including inland waters: Breydon, Berney, Filby, Hickling, Hardley, Elsing GP, Thetford GP, Salthouse, Cley, Titchwell and Welney.

First juvenile of the autumn at Yarmouth Aug 14th. Autumn passage most evident Oct/Nov with particularly large concentrations off NW Norfolk; some overlapping of counts no doubt: Brancaster 74 Oct 17th and 54 Oct 30th; Titchwell 170 Oct 31st and 130 Nov 2nd; Holme 85 Oct 15th, 101 Oct 29th and 100 Nov 4th; Hunstanton 60 Oct 17th, 100 Oct 29th and 240 Nov 2nd and Heacham 76 Oct 19th.

Sabine's Gull: 14 individuals reported, mostly along the north coast commencing with a second-summer bird off Hunstanton July 15th and ending with a juvenile Snettisham Oct 29th. Monthly sightings: July 1, Aug 2, Sept 9 and Oct 2.

Additional 1987: Holme adult Oct 18th (KJ MR SW).

Black-headed Gull: Breeding pairs included 350 Scolt, 2,250 nests late May Warham saltings, 1,500 Blakeney Point and 644 Snettisham.

Common Gull: One pair at Scolt made a scrape, but no eggs laid.

Lesser Black-backed Gull: 6 pairs bred Blakeney Point and 4 nests Warham saltings. Concentrations of 145 flying to roost East Tuddenham Sept 1st and 100 Little Melton Sept 8th following plough.

Herring Gull: Breeding records from Blakeney Point (27 pairs) and Warham saltmarsh (9 nests).

Northern race *argentatus* (breeding between Scandinavia and the White Sea) recorded Weybourne, Blakeney Point and Heacham. Yellow-legged birds at Strumpshaw 2 adults July 31st, Tunstead 2 adults Aug 30th and Cley Dec 10th.

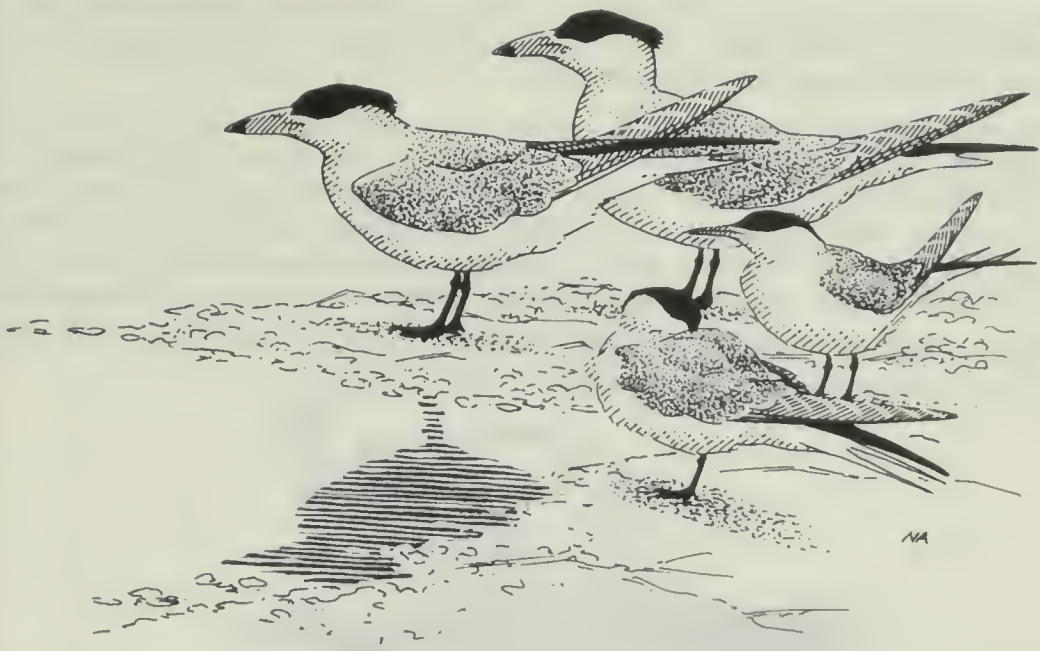
Iceland Gull: Typical small selection of records from Winterton 1st winter Dec 4th, Paston 1st winter Feb 7th, Cley 1st winter Nov 20th, Holme 3rd summer May 29th, Hunstanton 2nd winter March 5th/6th and Heacham adult Dec 20th.

Glaucous Gull: Scattered records from Breydon 2nd summer May 2nd, 1st summer June 3rd and July 30th and an adult Oct 30th; Winterton/Horsey 1st winter Nov 20th; Heigham Holmes Dec 10th; Happisburgh immature Dec 26th; Mundesley 1st winter Jan 31st; Overstrand-Paston 2nd winter Feb 20th; Cley-Blakeney Point-Weybourne adult until March 6th and from Sept 18th, 2nd winter Jan 24th and March 1st, first winter Feb 20th and Nov 19th/20th and 2nd summer May 8th/23rd; Wells adult March 17th; Holkham second winter March 6th; Scolt adult Dec 17th; Brancaster adult Dec 10th/11th; Hunstanton-Holme adult Feb 1st-3rd, first winter March 2nd, Feb 5th and other sightings on Nov 19th, 27th and 28th and Dec 11th; Heacham adult Dec 24th and Ousemouth March 1st.

Hybrid Glaucous Gull × Herring Gulls at King's Lynn docks 1st winter Jan 30th and again at Blackborough End Tip Feb 24th. A 2nd winter hybrid at Heacham Dec 24th into 1989.

Kittiwake: 1,300 Lynn Point during NW gale and sleet Feb 29th, over 1,000 spiralling up and flying inland. Largest autumn movement: 3,000 west Titchwell Nov 20th during single hour.

Inland sightings of 4 Welney Feb 29th and one ENE Weeting Heath March 12th.



Caspian Tern: An early bird at Breydon April 29th (INS) followed by 2 at Hickling June 18th (ADB JSH FR KS *et al*).

Lesser Crested Tern: Arnold's Marsh Cley Aug 26th (AJ RLM CI) and Titchwell Sept 3rd (MB AL MS MLW). A Lesser Crested Tern summered on the Farnes also visiting coasts of Northumberland and Tyne and Wear. Presumably the Norfolk sightings relate to this bird.

Sandwich Tern: Extreme dates March 20th (Cley) and Nov 19th (Titchwell). Bred at Blakeney Point 1,000 pairs. At Scolt 2,775 pairs produced 1,200 young — similar number of young lost by Fox predation along with 60 adult birds.

Roseate Tern: Noted at Cley/Blakeney Point Aug 28th (PG) where 4 Sept 3rd/4th (SCJ RQS) including a juvenile. This party found in a mixed flock of Terns comprising 60 Sandwich, 20 Common, 1 Arctic and 2 Black Terns.

Common Tern: Observed between April 3rd (Thornham) and Nov 4th (Cley). A total of 718 pairs bred in the county, the colony at Breydon on platforms again having good success with 82 pairs. Other major sites included Blakeney Point 200 pairs, Scolt 208 and Snettisham 90.

Arctic Tern: Extreme dates April 19th (Thornham) and Oct 22nd (Snettisham). Only a handful of spring migrants noted at Hardley Flood, Cley, Thornham Point, Holme (14) April 30th, Snettisham and Lakenheath Washes.

Autumn numbers small (89 individuals), maximum parties being 6 Weybourne Aug 28th: 12 Blakeney Point Aug 18th, 12 Oct 15th and 8 Oct 16th together with 12 Thornham Point Aug 29th.

A few mid-summer birds (1-3) in June/July at Breydon, Cromer and Wells. Breeding occurred at Blakeney Point (4-6 pairs) and Scolt (2 pairs) — one successful.

Little Tern: An extremely early record at Yarmouth of 2 March 24th, but main arrival not until April 16th (Scolt) and 17th (Brancaster). Very late birds at Ousemouth Oct 7th, Wells Oct 8th and Blakeney Point until Nov 13th.

A minimum county total of 561 breeding pairs rearing at least 380 young.

Inland sightings: Welney May 8th, Pentney GP May 11th, May 16th/17th and June 8th; also 2 Flicham May 16th.

Whiskered Tern: A juvenile at Welney Oct 17th and 21st-23rd (JBK RN LB *et al*). The fifteenth county record. Additional 1987: Yarmouth June 27th (MRF AR) and Titchwell on 28th (WAD); perhaps the Pentney bird.

Black Tern: Extreme dates April 23rd (Holme, Titchwell) and Oct 19th (Holme). Widespread spring passage when recorded at 28 sites, the main movement commencing around May 7th/8th when largest parties were of 21 Breydon, 26 Hickling, 20 Hardley Flood, 12 Weybourne, 26 Cley/Salthouse, 12 Holkham, 21 Holme, 10 Lynn Point, 10 Welney and 10 Lyng GP. A further late influx (1-5 birds) occurred at 6 sites in mid-June.

Very few in autumn apart from Sept 7th/8th when up to 22 at Cley/Blakeney Point.

White-winged Black Tern: A juvenile at Gillingham Aug 19th-22nd (AR RW *et al*) followed by one perhaps the same at Breydon Aug 24th (PRA).



Guillemot: Inland: Welney March 2nd.

Black Guillemot: Weybourne one in summer plumage May 7th; Paston and then Cley Nov 13th.

Little Auk: A notable wreck following gales of the early year with 8 dead and 2 inland between Jan 10th and April 4th, but only 4 singles offshore Feb 28th-March 6th.

In autumn birds offshore 27 dates from Oct 13th. Double-figure counts as follows; Cley 17 Oct 24th; Paston 39 on 30th and same day Cley 80, Weybourne 12 and Blakeney Point 10; Cley 14 Nov 2nd and 40 east/2 west off Weybourne the next day; Yarmouth 26 north 19th; Cromer Pier 20 on 20th when the same number off Titchwell and 19 at both Cley and Paston; Holme 21 Nov 21st and Cley 25 Dec 3rd. Last coastal bird oiled and stranded at Morston Dec 20th.

Singles on fresh-water at Cley Oct 29th; Buckenham Ferry Oct 31st and Horsey Mere Nov 2nd-11th. Corpses at Overstrand Nov 2nd and inland at Wreningham on 18th.

Puffin: Eighteen coastal records of 1-3 Feb/March and Sept to Dec including 5 dead ones in March.

Collared Dove: Good numbers at Hoveton grain depot: 100 June 27th, 120 in Oct and 160 by mid-Dec. Shouldham 280 Dec 12th.

Turtle Dove: Very unusual record from Tatterset Feb 26th (AB). First of spring Filby April 9th followed by a more general arrival from 17th. Last Stiffkey Oct 25th. No large counts received, neither of spring passage nor of post-breeding gatherings.

Ring-necked Parakeet: 1-2 at Cley, Holkham Park, North Walsham, Salthouse, Wells, Weybourne and Winterton.

Barn Owl: Recorded at over 150 localities.

Little Owl: Recorded at over 70 localities.

Long-eared Owl: Breeding records from 10 sites and winter records from another 10 with largest roosts of 4 at North Barsham Feb/March, 7 at Egmere Nov and 6 at a Fenland site and also Old Buckenham both Dec.

Coastal migrants: Winterton 2 March 10th; Yarmouth one and Winterton 2 April 10th; Blakeney Point May 14th; Holme Oct 12th; Weybourne 18th; Blakeney Point one and Holme 2 on 25th and single at Holme Oct 28th/29th; also singles at latter site Nov 11th and 15th.

Short-eared Owl: Two pairs bred at Wolferton. Numbers relatively low at beginning of year, but an excellent autumn with total of 21 birds seen arriving off sea between Oct 11th and Nov 5th (9 of these Oct 24th when 4 in 45 mins at Blakeney Point).

Autumn passage reflected high wintering population especially in Halvergate Marshes where up to 20 by the year-end. Elsewhere widespread observations with peaks of 8 Snettisham Nov 5th and 6 Burnham Deepdale/Scolt area Oct 21st.



Nightjar: A breckland survey (to be completed 1989) produced a total of 187-211 churring birds of which 87-97 in Norfolk (RSPB). A substantial increase since 1981 BTO survey.

Elsewhere churring birds at Buxton Heath, Cawston Heath, Leziat, Roydon Common (6 — first recorded on the early date of April 28th), Salthouse (6), Winterton (3) and Wolferton (5). One hawking insects under illuminated Dun Cow Inn sign in Salthouse village July 12th. An autumn migrant Little Eye Salthouse Sept 5th.

Swift: Earliest records Holme April 22nd and Winterton April 25th. A partial albino with white rump and underparts Yarmouth May 15th/16th, presumably same bird as seen there May 1985 and possibly same bird Cley May 18th. A Paston 1,000 moving west July 31st. Very late stragglers Paston Nov 12th and Little Plumstead and Cromer GC Nov 13th.

Alpine Swift: A very early migrant Brancaster Staithe March 19th (DWH).

Additional 1987: Old Hunstanton and Holme April 30th (MLW).

Kingfisher: Recorded at 84 localities.

Bee-eater: Paston an adult Aug 14th (MF) and Holme Aug 16th (DAP). A juvenile at Salthouse, Cley and Blakeney Point Sept 3rd and then, remarkably, single juveniles next day at Waxham, Paston, West Runton, Cley, Titchwell, Holme, Snettisham, Wolferton and West Winch — probably two individuals involved.

Hoopoe: An above average number of records: Northrepps (in observer's garden) April 10th, Burnham Overy Staithe April 15th-18th, West Bilney April 18th, Holme April 21st-23rd, Titchwell May 5th, Martham Broad May 9th, Holme Aug 28th, Aldby Oct 2nd, Winterton Oct 13th and Beeston Common Oct 22nd-29th.



Wryneck; A similar number of spring and autumn records. *Spring:* Holkham Meals April 17th, Burnham Overy Dunes and Winterton April 20th, Saxlingham Nethergate April 22nd/23rd, Hickling May 1st/2nd, Burnham Deepdale May 2nd-5th (calling frequently), Caister May 5th, How Hill May 9th and Salthouse May 14th/15th.

Autumn: Cockthorpe Sept 9th, Cley Sept 12th, Paston Sept 13th/14th, Tottenhill Sept 15th-21st, Beeston Sept 20th, Hunstanton GC Sept 26th, Wickmere Sept (no date but photograph produced) and Waxham Oct 26th.

Great Spotted Woodpecker: A continental migrant in off the sea landed exhausted on Yarmouth beach Oct 11th.

Short-toed Lark: Blakeney Point one briefly Oct 1st (GED SCJ *et al*). The twelfth county record.

Woodlark: At Sandringham Warren 2 (one singing) March 2nd. Two migrants Burnham Overy dunes March 20th, one also in song. In whole of Brecks total of 43 singing males including 20 in Norfolk. The results of a two-year Brecks study will appear in the 1989 NBR.

Autumn migrants Holkham Meals Oct 23rd and Cley Nov 5th.

Shorelark: The major national decline in numbers is reflected in Norfolk. At Thornham



Point 5 from beginning of year until March 28th, then decreased to 4; 3 still present May 1st. Elsewhere 5 Blakeney Point Jan 13th-20th, 3 there April 15th-17th and one April 23rd. At Holme 4 Jan 26th and one Snettisham April 1st-7th.

Only 5 records of singles in second winter period. Cley Oct 12th, Holme Oct 16th, Blakeney Point Oct 21st and Nov 13th, and Titchwell Nov 23rd.



Sand Martin: Earliest record Weybourne March 22nd. Fortunately appears to be increasing in numbers. Breeding pairs included the following: Lyng Eastaugh 300, Swanton Morley 250, Tottenhill 250, Strumpshaw 240 and Colney 120 (an increase from 17 in three years). In the Nar Valley ringing activities showed only a poor breeding season with a low ratio of juveniles to adults.

Swallow: Extreme dates March 20th (Holme) and Nov 12th (Waxham).

House Martin: Recorded between March 29th (Yarmouth) and Nov 20th (Stalham).

Richard's Pipit: A notable October influx: Waxham 27th/28th, Weybourne 2 2nd, 3 3rd, 7 4th and then singles 5th-9th, 15th and 18th, Salthouse 3 11th and 15th, 4 18th, 3 19th, 2 20th and one 21st, Blakeney Point 1st and 20th, Wells (East Hills) 15th, Burnham Norton 2 19th, Holme 1st and 12th/13th and Snettisham 2 18th and Welney 5th-9th.

Tawny Pipit: Singles Blakeney Point June 12th (JR *et al*) and Weybourne Oct 23rd (KBS).

Olive-backed Pipit: Stiffkey, one in typically wooded habitat Oct 13th (GDE MJE *et al*). The sixth county record.

Tree Pipit: Blakeney Point 2 late migrants Oct 16th.

Red-throated Pipit: Blakeney Point one May 15th, 2 the next day and one on 17th. Possibly 3 birds in total. One in song flight on 15th/16th (NMB GED MF TK *et al*).

Rock Pipit: Birds of Scandinavian race *littoralis* recorded Salthouse March 19th, 5 at Cley also March 19th, 4 20th and one 26th; also one Breydon April 9th.

Water Pipit: No records received in first 2 months of year. Spring passage: Lyng Eastaugh April 12th, Strumpshaw March 5th-17th, 3 March 19th and April 16th. Weybourne 2 March 6th-8th and 2 March 19th, Cley March 19th and Snettisham March 25th.

In second winter period Surlingham Church marsh singles 8 dates Dec with 2 on 25th/30th, Strumpshaw Nov 23rd/24th, Cantley 4+ Dec 4th, Horsey Oct 27th, Brancaster Dec 8th and Titchwell Oct 29th.

Yellow Wagtail: Earliest Cley April 1st. Flocks of 100 each at Cley April 17th, Holme and Snettisham April 29th; also 80 Waxham April 18th.

Latest: Hardley Flood Oct 25th and 2 Heacham Nov 6th.

Blue-headed Wagtail: Total of at least 30 on spring passage April 17th-May 17th including 3 Waxham April 18th and 3 Salthouse May 1st/2nd. Near Feltwell a male observed several dates late June apparently paired with a normal female Yellow Wagtail. Also singles Wissington BF July 30th and Burgh Castle Aug 14th.

Grey-headed Wagtail: A total of 10 males of this distinctive race: Cley on the early date of April 17th/18th, then following May occurrences: Breydon 11th, Caister 18th, Weybourne 2 13th and one 24th, Salthouse 14th-16th, Blakeney Point 7th and another 15th and Thornham 15th/16th.

Grey Wagtail: Bred at minimum of 10 sites: Brandon Bridge, Buckenham Mill, Ebridge, Foulden, Lyng Bridge, Marlingford, Narborough, St. Helen's Well, Thetford and West Acre, also present in breeding season at Briggate Mill, Keswick Mill and Norwich (New Mills).

Pied Wagtail: At Whitlingham Marsh roost 60 Sept 6th increasing to 690 Oct 5th, 500 Oct 12th and then rapid decrease to 150.

White Wagtail: Notable spring passage April 1st-May 5th including 9 Brancaster April 20th, a highly unusual concentration of 26 on Cley Eye field next day and 8 Thornham Point April 22nd. One also at latter locality June 14th.



Waxwing: Towards the end of Oct parties began arriving all down the east coast of Scotland and England from Shetland to Kent. The vanguard reached Burnham Market Oct 22nd followed by 20 at Hunstanton 23rd, Wells 24th, Gorleston and Morston 25th and Holme 26th. At the month-end up to 45 were watched at Cley and Wiveton, 21 Salthouse Heath, 30 at Warham, 42 at Wells and 46 at Burnham Deepdale.

Daily observations at Holme included 32 short-stayers Oct 30th followed by 100 next day (including 80 hurrying westwards above the dunes), 65 Nov 3rd increasing to 150 to 200 near the church on 4th but reducing to 80 on 5th. The majority then departed, but 25 lingered on roadside hawthorns; 2 met an untimely end striking house windows.

At nearby Hunstanton 20 arrived Oct 30th and the following day 23 sped south-west along the cliff edge followed by 25 more in the town Nov 3rd briefly taking rose-hips and cotoneaster berries before heading eastward. Twenty arrived Nov 4th when 80 were at Snettisham. Warham Green attracted 26 Oct 31st when 42 at Wells.

King's Lynn (Gaywood) held up to 18 between Nov 1st and 23rd. But in the Fens at this time only a single recorded: at Downham Market. Likewise the only Breck report was of 2 in Thetford. In East Norfolk many observers headed for Sutton where up to 30 could be watched gorging on berries and drinking at the adjacent village pond between Nov 4th and 10th. All apparently moved to Catfield where up to 55 present until Nov 26th. In addition 120 noted at Burgh Castle and 40 at Bradwell Nov 10th and 24 visited



Stone Curlews in the Norfolk Brecks have declined to little more than 30 pairs. This Little Ringed Plover's nest in Breckland was in a carrot field.





Norfolk's main Red Deer herd is maintained in Thetford Forest. The tiny Muntjac, a recent addition to the county mammal list, continues to thrive.



Cantley on 20th. Elsewhere 20 at Attleborough Nov 10th.

Observations received from Acle Bridge, Attleborough, Aylsham, Blakeney, Blakeney Point, Bradwell, Brancaster, Brancaster Staithe, Brundall, Burgh Castle, Burnham Deepdale, Burnham Market, Burnham Overy, Caister, Cantley, Catfield, Cley, Corpusty, Cromer, Docking, Downham Market, East Runton, Eaton, Ebridge Mill, Egmere, Elsing, Felbrigg, Field Dalling, Foulton, Gaywood, Gorleston, Hales, Heacham, Hellesdon, Hickling, Holkham Meals, Holme, Horning, Hunstanton, King's Lynn, Little Ryburgh, Martham, Mill Street, Morston, Mousehold Heath, Neatishead, North Creake, Northrepps, Norwich, Old Costessey, Salthouse Heath, Salthouse, Sheringham, Snettisham, Strumpshaw, Sutton, Thetford, Thornham, Titchwell, Thorpe St. Andrew, Tunstead, Warham Green, Wells, Welney, Weybourne, Wicklewood, Winterton, Wiveton, Yarmouth and Yelverton.

Although small by comparison with the huge invasion of 1965 (when 1,000 to 2,000 appeared in the county) this irruption was most welcome to birders and photographers alike. In addition it gave pleasure to a much wider audience. Earlier influxes of these delightful visitors were recorded in 1970 and 1974 when Norfolk totals of 870 and 500 respectively were attained. Peak numbers were present between the last week of Oct and late Nov. At the height of the movement county daily totals were as follows:

Oct	30	31	1	2	3	4	5	6	10	11	Nov
	200	315	87	38	120	285	182	96	203	94	

Throughout Dec scattered parties and singles appeared at Blakeney Point (2), Brancaster Staithe, Brundall, Catfield, Cley, Foulton (8), Hales, Holme (the month total of 46 included flock of 31), King's Lynn (3), Snettisham (2), Tunstead, Wells, (10) and Welney. Few remained more than a day.



Black-bellied Dipper: A well-watched individual at Lyng from Nov 21st into 1989, also one at Bure Valley trout lakes Dec 2nd and at Ketteringham Mill Dec 4th.

Robin: Blakeney Point: A notable fall of migrants Oct 16th, birds arriving throughout the day.

Thrush Nightingale: Blakeney Point a male May 15th-18th (GED SCJ *et al*). Fortunately it responded instantly by singing to a tape which simplified identification. The third county record.

Nightingale: Several spring coastal migrants recorded: Waxham April 18th, Weybourne April 17th and May 13th, Burnham Overy (Gun Hill) May 17th and Holme April 23rd and May 22nd.

Bluethroat: A male of the white-spotted form at Waxham April 17th (GMC MR JSH *et al*). Only the fourth identified county record and the first since 1954. More typically birds of the red-spotted Scandinavian form in May: Winterton 15th, Cley 16th and 18th, Blakeney Point 3 16th with one remaining next day, Burnham Overy (Gun Hill) 16th and Holme 14th-16th with another 18th.

Four autumn records, the largest number since 1976: Holkham Meals Sept 14th/15th, Blakeney Point Sept 17th, Weybourne first-winter male (trapped) Oct 20th-25th and Snettisham Oct 21st.

Black Redstart: Single winter record: Paston Feb 6th/7th. Spring passage from March 16th (Heacham) with main movement of over 30 birds April 1st-3rd round whole coast and including 5 Heacham-Hunstanton and one inland at Colney GP. In breeding season 6 singing males at Yarmouth/Gorleston, but only 2 pairs definitely bred; elsewhere pairs bred at King's Lynn BF, Norwich, Thetford and Wissington BF. Autumn passage mainly second half of Oct with maximum of at least 10 Yarmouth 19th/20th.

Redstart: Recorded April 17th (Paston) to Oct 25th (Yarmouth). Reported at 15 localities in Stanford 'Battle Area' in Brecks in breeding season.

Whinchat: Breeding noted in Brecks at Grime's Graves, Smoker's Hole, Tommy's Belt and Tottington. Autumn passage concentrations of 19 at Wells (East Hills) Sept 7th and 15 in small stubble field at Waxham Sept 17th. Last noted Snettisham Oct 27th.

Stonechat: In east Norfolk 6 pairs bred with another pair also present.

Wheatear: First recorded March 17th (Morston). Breeding again proved at Bacton. Latest records included singles Choseley and Ten-mile Bank Nov 5th, Holkham Nov 6th and Snettisham Nov 5th-13th.

Pied Wheatear: Blakeney Point female Oct 16th (APC BEC SAS *et al*). The fourth county record.

Ring Ouzel: Widespread and heavy spring passage March 27th (Weybourne) to May 20th (Holme) with majority of records in second half of April. For example on April 16th at least 35 on north Norfolk coast including 20 at Holme. At Holkham Park maximum of 16 during the month. Inland sightings in April included Saham Hills 8th/9th, Pentney GP 1-2 15th-28th, Sparham 19th, Strumpshaw 3 24th and one 25th, Norwich 3 24th and one 26th/27th, Little Melton 3 27th, How Hill 2 28th, Welney 27th to 29th, Blickling 2 29th and Stowbridge 30th.

In autumn one Holme Sept 9th then again many records Oct 1st to Nov 6th (Weybourne and Sea Palling) with maxima of 8 Holkham Meals Oct 12th and 7-8 Blakeney Point Oct 16th. Singles inland at Welney and Norwich Oct 13th.

Fieldfare: An albino Colney GP March 26th. Records of singles in June at Holkham Meals 2nd, Flitcham 9th (injured), Blakeney Point and St. Helen's Well 11th and Holme 24th. Early autumn arrivals Holme Aug 29th and Weybourne Sept 6th.

Redwing: A leucistic bird Hoe Common March 20th. Late migrants Paston May 17th and Thornham May 24th. First recorded in autumn at Northrepps Sept 13th. Thousands arriving with Song Thrushes and smaller numbers of Fieldfares all day Blakeney Point Oct 16th.

Mistle Thrush: Flock of 40 Taverham Aug 4th and 35 Tunstead Aug 30th. At least 3 migrants arriving off sea with other thrushes Blakeney Point Oct 19th.

Cetti's Warbler: Despite a mild winter a continued decline. Singing birds at Coldham Hall, Hickling, How Hill, Irstead, Ranworth 2, Rockland/Wheatfen 4, Salhouse, Strumpshaw 4 and Surlingham Broad. Elsewhere single males at Brancaster and Titchwell.

Grasshopper Warbler: Earliest Boughton Fen April 17th. Fleggburgh Common held 6

pairs and 10 pairs at Hickling. An autumn migrant at Paston Oct 1st.

Savi's Warbler: Hickling, up to 3 singing from May 21st. Surlingham Church Marsh one singing July 9th to 29th.

Sedge Warbler: Earliest Snettisham April 3rd.

Marsh Warbler: Weybourne, a first-winter bird trapped Aug 28th (MPT JW) and another Cromer GC Sept 17th-25th (SCV *et al*). The seventh and eighth county records.

Reed Warbler: Earliest Hardley Flood April 16th.

Great Reed Warbler: Cley June 5th to 24th (CJJ PL *et al*). The ninth county record.

Icterine Warbler: *Spring:* Blakeney Point May 12th and June 8th-11th. *Autumn:* Holkham Aug 7th and Sept 6th; Weybourne Sept 8th; Holme Sept 17th-19th; Stiffkey Sept 29th and Oct 12th-13th.



Subalpine Warbler: A first-summer female trapped at Weybourne April 30th (MPT JW *et al*) and a male Blakeney Point May 8th-11th (MSC AMS *et al*). The sixth and seventh county records.

Barred Warbler: Only two autumn records: Weybourne (trapped) Sept 6th and Wiveton Sept 17th.

Lesser Whitethroat: Blakeney Point 20 May 11th. Late autumn birds at Winterton Oct 16th, Brancaster Oct 21st and Holme Nov 20th.

Whitethroat: A late bird Weybourne Oct 15th.

Garden Warbler: Earliest Holme April 3rd and Cley next day. Late spring migrants Blakeney Point included 2 June 9th and 4 on 11th. October birds included Cley 20th, Weybourne 22nd, Yarmouth till 25th and Wells till 31st.

Blackcap: Wintering individuals widespread in first three months of year: Cley, Cromer (2), Holkham Meals 3, Holme 3, King's Lynn 2, North Walsham, Norwich 2, Swannington, Thetford, Thorpe St. Andrew and Wells. Ringing information, both in Britain and on the Continent, indicates our wintering birds come from the Central European breeding population, just north of the Alps in Austria and southern Germany.

Impressive October passage included 15 in single tree at Yarmouth Oct 13th. Nov/Dec records from Cley, North Creake, Norwich 2, West Raynham and West Walton 2.

Greenish Warbler: 1987: The Waxham bird still present Aug 28th (JA).

Arctic Warbler: Yarmouth Oct 1st-2nd (PRA *et al*). The eleventh county record.

Pallas's Warbler: Six October records: Scratby 25th (IRH), Weybourne (trapped) 26th (KE KBS), Cley Coastguards 22nd-23rd (NM *et al*), Wells (East Hills) 23rd-24th (SH



et al), Holme 20th with another 22nd-24th (NOA) and Heacham 30th (MW).

Yellow-browed Warbler: Anticyclonic weather in mid-Sept produced the first at Holkham West End Sept 17th joined by another next day. 3 more were in the county before the month-end and from Oct 1st records widespread. All observations are given:

Yarmouth Oct 1st, 2-3 on 2nd, 2 on 3rd with one remaining to 5th; a new one 12th-13th and 2 on 17th. Winterton Oct 5th. Waxham Sept 28th, Oct 2nd-3rd and 13th. Paston Oct 13th and 16th. Cromer Sept 22-23rd.

Weybourne Oct 2nd, 2 on 3rd, one 8th, 3 on 12th with one remaining to 13th and one 16th-18th. Salthouse Oct 9th. Walsey Hills 2 Oct 20th. Cley 2 Oct 12th. Blakeney Point Oct 2nd. Stiffkey 3 Oct 12th, 2 on 13th, one 14th and 3 on 15th. Wells (East Hills) Oct 3rd, 2 on 5th with further singles on 9th, 13th and 21st. Holkham Meals Sept 17th, 2 on 18th, Oct 3rd-4th, 3 on 5th, 4 on 8th-9th, 7 on 11th, a remarkable fall of 18+ on 12th, 10 on 13th, 11 on 15th, 10 on 16th, 3 on 18th-21st and 2 new arrivals 22nd-24th. Thornham Harbour Oct 16th. Titchwell 1-3 Oct 7th-16th. Holme Oct 1st, 3 on 2nd, 4 on 3rd but only one on 4th, another Oct 11th increasing to 2 on 12th/13th and Snettisham Oct 9th.

Inland at Pensthorpe (trapped) Sept 24th and East Winch Common Oct 14th. Considering its former scarcity this delightful species goes from strength to strength to produce the best year yet. Numbers difficult to assess but appear to involve minimum of 69 individuals.



Radde's Warbler: Four October records: Wells East Hills 15th-17th (BRS JRMcC DAH), Blakeney Point 16th (SCJ GED *et al*), Warham Green 23rd (SPH) and Holme 24th-25th

(CJC *et al*). The twelfth to fifteenth county records.

Bonelli's Warbler: Holme April 9th (DTP MJW) and Blakeney Point May 14th (GED PF NW *et al*). The sixth and seventh county records.

Wood Warbler: A good number of spring records with obvious migrants at Horsey May 10th, Waxham 2 May 8th and one on 10th, Paston April 17th, Weybourne April 30th, May 3rd and 14th, Cley (Walsey Hills) April 22nd, Blakeney Point May 7th, Holkham Meals April 19th and 30th, and Holme April 18th with 2 May 3rd.

A large number of singing males from inland sites or breeding habitat: Baconsthorpe Castle, Beacon Hill, Beeston, Cromer, Dersingham, Elsing, Felbrigg, Frog Hill (Stanford Battle Area), Horsey, Horsford, How Hill, Mousehold Heath, Ringstead, Roman Camp, Salthouse Heath, Sandringham Park, Sheringham (Pretty Corner), Snettisham (Ken Hill), Sprowston, Thorpe St. Andrew and Wayland Wood. Many were short-staying migrants; breeding was confirmed only from Sheringham (Pretty Corner) and Mousehold Heath.

Autumn reports unusually late: Holme Oct 12th-14th, Waxham Oct 13th and Weybourne Oct 15th-29th.

Chiffchaff: Recorded in first-winter period at Surlingham Jan 6th and 17th, Rockland Jan 30th, Cley Sewage Works Jan 30th to Feb 13th, Holkham Park Feb 8th and 16th, Holkham Meals up to 4 Jan/Feb, Old Hunstanton Jan 9th, King's Lynn Jan 1st-March 25th, Tottenhill Jan 1st and Wymondham Feb 18th/19th.

Abietinus-type birds reported at Yarmouth till Oct 25th (up to 5) and at Weybourne Nov 2nd till year-end.

Tristis-types at Waxham Oct 16th (trapped) and Wells Nov 22nd.

December birds at Rockland 3, Surlingham Church Marsh, Salthouse Heath, Holkham Meals, New Holkham, Burnham Mill, Brancaster, Titchwell 2, Downham Market and Beetley GP.

Willow Warbler: First West Acre March 27th. October records from Weybourne (trapped) on 12th, and Holkham Meals on 21st and 30th.

Goldcrest: Blakeney Point, a large fall of 200-300 Oct 16th.

Firecrest: All records in spring (March 22nd-May 14th) and autumn (Sept 7th-Nov 5th) passage periods. Spring sightings at Yarmouth, Winterton, Horsey, Waxham (up to 6), Paston, Felbrigg (2), Weybourne (4), Gramborough Hill, Walsey Hills (2), Blakeney Point (2), Wells (3), Holkham Meals, Brancaster, Holme (5), Welney, East Wretham and Norwich.

In autumn at Yarmouth (2), Scratby, Waxham (3), Bacton, Paston, Weybourne, Salthouse, Blakeney Point (2), Stiffkey, Wells (up to 4), Holkham Meals (2), Holme and Norwich (2).

(Figures in brackets represent spring/autumn totals).

Spotted Flycatcher: First Weybourne April 27th. October records at Yarmouth, Blickling and Wells where latest on 13th and 19th.

Red-breasted Flycatcher: Typical autumn records: Weybourne Sept 14th, Blakeney Point 2 Oct 2nd and Yarmouth Oct 17th-21st.

Pied Flycatcher: An interesting year combining a strong spring passage, but a small and noticeably late autumn movement.

In spring at Yarmouth 2 May 10th and one on 14th; Winterton April 16th and May 14th; Horsey May 10th; Waxham May 7th/8th and 12th; Felbrigg April 23rd; Blakeney Point singles April 30th, May 2nd and May 12th with 3 13th, 4 14th, 5 15th, 3 16th and one 17th, also June 9th; Holkham Meals April 30th, May 7th, 2 May 16th and peak of 10 May 17th; Thornham Point May 8th and Holme May 14th.

In autumn one Horsey July 21st; October observations at Yarmouth 3rd-5th and 21st; Stiffkey 14th and 16th; Holkham Meals 4 on 5th, 3 on 12th and one till 13th; Brancaster 13th-24th and Holme 13th.

Bearded Tit: Breeding records included Strumpshaw 6 pairs, Ranworth/Woodbastwick 15 pairs, How Hill 5 pairs, Hickling 20 pairs, Horsey 12 pairs, Cley, and King's Lynn BF 3 pairs. Post-breeding assembly of 62 — great majority juveniles — Cley July 5th.

Autumn dispersal again obvious and included 35 Burgh Castle Oct 10th, up to 15 Berney Oct/Nov, 10 Winterton Oct 5th 4 groups totalling 39 west Cley Oct 29th, 25 Wells Oct 11th, 58 Holme Oct 1st with several other parties of up to 45 during Oct and 25 King's Lynn BF Nov 27th.

Additional autumn records: Weybourne 4 arrived in off sea Oct 24th, Blakeney Point 2 Oct 2nd, Brancaster, Brancaster Staithe, Thornham Point, Snettisham, Tottenhill and Welney.

Golden Oriole: Spring migrants at Ridlington (heard) May 5th, Strumpshaw (heard) May 7th and Glandford June 1st. Summer occurrences included male Welney July 9th/10th and 31st with another there July 26th.

Isabelline Shrike: Horsey Gap Oct 26th (WRB). The third county record.

The Holkham 12th/13th Oct 1975 record has been re-considered by British Birds Rarities Committee as showing characters closest to the race *phoenicuroides*.

Red-backed Shrike: In the Brecks a well-publicised pair raised 3 young at Santon Downham.

In spring single migrants at Caister, Winterton, Hickling, Waxham, Weybourne, Blakeney Point, Thornham Point, Holme and Shereford May 8th-23rd.

In autumn migrants at Hickling, Northrepps, Cromer, Weybourne, Blakeney Point, Morston, Wells, Burnham Overy, Titchwell, Holme (2), Hunstanton GC and Snettisham Sept 4th-Oct 20th.

Great Grey Shrike: Single winter occurrence: Potter Heigham/Hickling Feb 6th/7th. In spring in same area April 1st and 11th and at Horsey/Waxham April 17th.

Noticeable arrival third week Oct with birds at Yarmouth 17th-19th, Winterton 19th and 24th, Waxham 22nd, Salthouse Heath 20th, Blakeney Point 19th, Holkham 12th and 21st/22nd and Heacham 18th; also one Salthouse Nov 24th.

Woodchat Shrike: Waxham female July 25th (RMP SCT).

1986: Titchwell Aug 10th (SRC DRC MPT *et al*).

Magpie: Roosting sites: Hickling 25+ Dec; Buxton Heath 81 Jan 31st, 116 Feb 6th and 150 Feb 20th; Holme 46 Dec; Roydon Common 82 Feb 14th, 71 Dec 10th and 40 Dec 18th and Old Buckenham Common 40 March 10th.

Hooded Crow: During Jan/Feb singles at Happisburgh and Roydon Common. Spring passage noted at 8 sites. Usually singles, but a party of 6 Winterton/Horsey March 20th. In Nov/Dec 1-2 at 10 localities.

Starling: Lynn Point flock of 2,000 July 27th contained a juvenile with striking buff/cinnamon plumage reminiscent of Rose-coloured Starling.

Brambling: In first-winter period only flocks reported were 30 Swaffham and 20 Beechamwell with latest April 28th (Shingham and Ormesby).

Large-scale arrival during October included 600-700 Blakeney Point on 16th followed by 60 Holme Hale and 150 Anmer in Dec.

Siskin: Winter flocks of up to 50 at Dersingham, Filby, Lenwade, Pentney, Ranworth, Santon Downham, Sparham, Strumpshaw, Sutton, Wells and West Acre, with 150 Thetford GC Jan 17th and 100 Stanford Nov 19th.

Passage counts included 60 north at Waxham and 42 north at Paston Sept 18th and 70+ west at Wells Oct 23rd.

Twite: Largest flocks recorded in second-winter period: 200 Wells Lodge Marsh, 300 Holkham Gap, 350 Burnham Norton and 700 in Brancaster harbour/Scolt Head area.

Largest flock in first-winter period 200 Blakeney Quay. Latest in spring Wells March 29th. Eastward passage at Weybourne Oct 3rd to Nov 12th peaked at 80 Oct 22nd.

This species is the only passerine regularly migrating eastwards along the north Norfolk coast in autumn. The Twite's breeding range in Europe is largely restricted to Britain and western Norway. Many of those nesting in the southern Pennines assemble in large over-wintering flocks on The Wash salt-marshes. 17,000 were estimated in Feb 1986, but less than half the number in the following winter when many of the population may have crossed the North Sea to winter in the Low Countries, together with birds from Norway (RSPB).

An inland record at Welney March 14th and at Wereham where 8 Jan 11th and 3 on 12th feeding on seeded sugar-beet.

Mealy Redpoll: Only record in first-winter period: Wells Feb 11th. Autumn/winter records: Weybourne single Nov 6th/8th and 7 Dec 21st; Brancaster Dec 10th; Titchwell 2 Nov 19th and single Dec 14th; Thornham 2 Dec 3rd, Pentney GP Dec and Binham 2 Dec 16th.

Lesser Redpoll: Among flocks reported: Titchwell 40 Nov, Pentney GP 60 Dec, Narford 45 Jan 17th and Binham 100 Dec 16th.



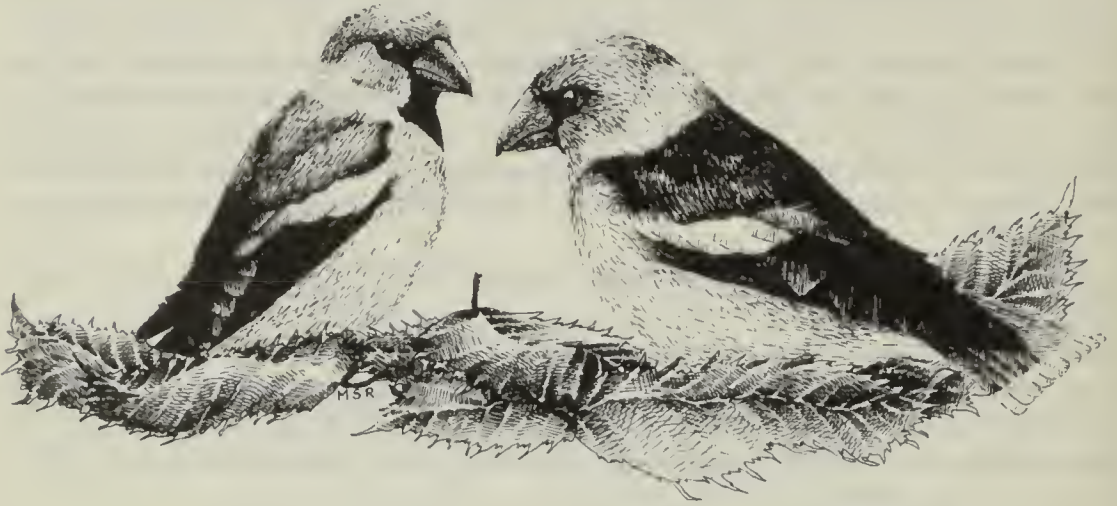
Common Crossbill: Most reports from Brecks (maxima 16 Santon Downham Aug 17th and 16 Thetford GC Sept 18th) and from Holkham Meals June to Oct (peaking at 23 June 23rd).

Elsewhere a scattering of records June to Nov with largest group 25 Kelling Heath June 17th; no other party exceeded 9 birds.

Hawfinch: Up to 16 present Jan at regular site in TF70 with peak of 14 Feb increasing to 40 in March. In April numbers declined to 7 by 17th. In May occasional sightings of a pair at the same locality suggested breeding may have occurred. Poor fruiting of the Hornbeams resulted in only a single bird (Nov 26th in second-winter period).

During first part of year birds continually present at Holkham Park with maximum of 25 March 12th. Other notable flocks included 15 Costessey mid-Jan, 15 Ringland Jan 10th and 32 East Wretham March 19th.

Breeding was only confirmed from single pairs at Kelling and Thorpe St. Andrew. Elsewhere 1-5 at Alderford Common, Beechamwell, Billingford, Cranworth, Elsing, Kelling Quags, Lenwade, Lynford, Narford, North Creake, Norwich, St. Helen's Well, Salthouse Heath, Sandringham, Santon Downham, Sheringham (Pretty Corner), South Wootton, Stiffkey, Swannington, Thetford Warren and Wayland Wood.



Lapland Bunting: Small numbers at regular coastal sites; Paston, Cromer, Weybourne, Salthouse, Cley, Blakeney Point, Stiffkey, Brancaster, Titchwell and Snettisham. Largest numbers as usual at Burnham Norton where peak of 40 Nov 26th. Latest spring bird: male Blakeney Point May 15th-17th.

First autumn return: Cley Sept 8th. Inland: Strumpshaw Jan 5th and Berney up to 7 till mid-March and again present from Oct 13th with maximum of 14 Nov 12th.

Snow Bunting: Largest flocks: In first-winter period: 120 Salthouse Jan 10th, 100 Holkham Gap Feb 1st, 150 Titchwell Feb 12th and 120 Thornham Point Jan 10th.

During second-winter period 350 Paston Nov 16th, 100 Cley Nov 13th, 200 Holkham gap Nov/Dec and 200 Holme Dec. Latest spring bird Holme April 24th; first autumn return 2 Blakeney Point Sept 17th.

Ortolan Bunting: Single record concerns a male Blakeney Point May 15th/16th.

Yellow-browed Bunting: 1975: The Holkham Meals individual observed Oct 19th (DJH JBK MP) has finally been accepted by BOU Records Committee. As such it pre-dates the Fair Isle bird of 1980 and becomes the first British record of this Asian vagrant.

A feature article will appear in the 1989 *NBR*.

Corn Bunting: Largest winter concentration: Marham 25 Feb 15th, Boughton 28 March 23rd and King's Lynn BF 10 Nov 8th. Additional autumn/winter records: Horsey, Weybourne, Stiffkey, Burnham Norton and Hilgay Fen. Observations in spring/summer from suitable breeding habitat many of which refer to singing males: Beechamwell, Berney, Boughton, Cart Gap Eccles, Choseley, Cockthorpe, Fincham, Happisburgh, Lakenheath Washes, Lynn Point, North Wootton, Sheringham/Weybourne, Shingham, Stoke Ferry and Wretton.

Indigo Bunting: Holkham Meals, a male Oct 21st to 30th (MJS JRW *et al*) still subject to official acceptance. Circumstantial evidence points strongly to it being of wild origin as it coincided neatly with British East coast arrivals of Cliff Swallow and Northern Waterthrush and followed hot on the heels of 2 East coast Red-eyed Vireos. This New World species has recently been promoted to Category A of the British List.

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Photographs: Shorelarks (*D. M. Cottridge*); Waxwing lower (*H. Hems*); Purple Sandpipers (*R. Jones*); Black Brant and Red-breasted Goose (*D. J. Kjaer*); Stone Curlews (both plates), Fieldfare and Little Ringed Plover (*C. R. Knights*); Glaucous Gull (*B. J. Madden*); Hawfinch, Great Grey Shrike, Nightjar, Red Deer, Muntjac and Hare (*R. Powley*); Whooper and Bewick's Swans (*M. Rains*); Waxwing upper, Little Auk, Hoopoe and Common Seals (*R. Tidman*).

Line Drawings: Inside Front Cover Marsh Harrier, 249 Marsh Harriers, 261 Wigeon, 282 Leach's Petrels, 288 Red Kite, 293 Little Stints and Curlew Sandpipers, 297 Mediterranean Gulls, 299 Caspian Terns and 300 White-winged Black Tern (*N. Arlott*); 304 Waxwings (*B. Bland*); 302 Hoopoe, (*D. Bryant*); 273 Hawfinch (*C. Donner*); 290 and 313 Hobbies (*R. Farndon*); 259 Little Tern (*P. Haddon*); 315 Roe Deer, 316 Fox, 317 Common Seal, 318 Grey Seal, 319 Fallow Deer, 323 Harvest Mice and 325 Red Squirrel (*J. Last*); 296 and 314 Terek Sandpiper (*J. R. McCallum*); 285 American Wigeon, 302 Bee-eater, 307 Subalpine Warbler, 308 Pallas's Warbler and Yellow-browed Warbler (*R. Millington*); 254 Stone Curlews, 280 Black-necked Grebes, 291 Stone Curlews and Little Ringed Plover, 294 Woodcock and 311 Crossbill (*R. Powley*); 281 Sooty Shearwater, 284 Brent Geese and Brant Goose, 287 Surf Scoter, 301 Nightjar and 312 Hawfinch (*M. Read*); 253 Waxwings, 260 Pintail and Bewick's Swans, 277 Swifts, 279 Black-tailed Godwits and 303 Shorelarks (*the late R. A. Richardson*) and 262 Wheatear, 268 Bluethroat, 269 Red-breasted Flycatcher, 270 Yellow-browed Warbler, 271 Pallas's Warbler, 272 Firecrest and 305 Black-bellied Dipper (*A. Stoddart*).



NORFOLK MAMMAL REPORT 1988

Editorial



The Editor is pleased to present the 33rd Norfolk Mammal Report.

The biggest mammal story of the year, eclipsing in its implications anything that has occurred since these reports began, was the coastal catastrophe which overtook our Common Seals. Coming as it did at the end of the summer it held top news value and neatly slipped into place in the succession of disasters that continue preoccupying our nation. Are we developing a ghoulish delight in picking over the latest tragedy, indignation fuelled by charge and counter-charge, statement and denial, until interest flags and the next horror comes along to take precedence?

Seal news is now stale news and reports even now as we write that mid-summer deaths are being recorded merit minimal mentions. The greater tragedy is that the popular sympathy and genuine desire to help prevailing at the height of the disaster has transferred itself to other causes. Who can say which of the many should have priority? Is any order

seemly or appropriate? Surely, good will has no finite bounds and expands to embrace each cause as it comes along and support it through to some resolution if that is, in fact, possible.

A small band of workers has been warning us of the failing health of the sea and its inhabitants. Their continuing calls for prevention rather than the alleviation of symptoms must not be allowed to fade from the public ear.

Removing the overlays, we remind ourselves that these reports are statements of facts so far as they are known and we are indebted to two authorities for providing us with notes on seals for 1988. Bernie McConnell from the Sea Mammal Research Unit has been involved in seal research along the north coast of Norfolk and his report follows this editorial. Percy Trett has followed the fortunes of the seals of the east coast for many years and his reports are usually summarised in the classified notes. This year he has been invited to submit an extended report to stand in its own right and it seems appropriate for the two to be together.

A gap in our published data we have been hoping to fill for many years is the history of deer in our county and we are delighted to include David Henshilwood's feature article on Norfolk Deer parks.

We also welcome Bill Flynn's expansion on the usually brief item in the classified notes with his comments on the current wild deer situation and Dr. Morris Gosling adds what may be the final paragraph on the rise and fall of the Coypu in this country.

This plethora of specialised comments means that the classified notes must be briefer than usual. Fewer anecdotes and strange tales are told, but all the information submitted is stored on files and is gratefully acknowledged. Apologies for any omissions from the list of contributors are offered. Any such are entirely accidental and wholly the responsibility of the Editor.

Thanks are expressed to all our contributors including John Last whose ever-increasing pictorial skill continues to enliven our pages.

Submission for the 1989 Report should be addressed to Rex Hancy, Ardea, 124 Fakenham Road, Taverham, Norwich NR8 6QH, *if possible by the end of January 1990*. Telephone calls can be made on Norwich (0603) 860042.



The Common Seal Disaster

Bernie McConnell, Sea Mammal Research Unit, Cambridge.



In April 1988 the first signs of what was later to be termed Phocine Distemper Virus epidemic was observed in Common Seals in the Kattegat. Abnormally high numbers of abortions were recorded and adult seals were seen to suffer from respiratory distress and discharge from the nose and mouth. Subsequently, large numbers of Common Seals were washed up dead on beaches.

Over the next few months the disease spread down the German and Dutch seaboard and in July 1988 the first signs of the disease were observed in seals at Blakeney Point and in the Wash. Over the next 6 months over 1,300 Common Seal bodies were reported between Grimsby to Harwich. This figure almost certainly underestimates true mortality since it is unlikely that all the dead seals were washed ashore and recorded.

At Blakeney Point a joint programme with the National Trust and the Sea Mammal Research Unit was established to collect dead seal bodies to establish cause of death and measure the levels of the mercury and Polychlorinated-biphenols (PCBs). Live seals showing symptoms of the disease had small, numbered tags glued to their fur to give an indication of where, and how many, bodies would be subsequently discovered. Also, a radio telemetry programme was established to monitor the haulout behaviour of seals at Blakeney Point. Four, apparently healthy, seals were fitted with small VHF transmitters and automatic receiving stations were established at Morston and Hunstanton.

Aerial and land-based surveys of the Wash and Blakeney Point suggest that mortality in this area may have been as high as 60 percent, bringing the current Common Seal population size for this area down to around 2,500.

The disease spread northwards from the Wash up to Orkney, around the West coast of Scotland and into Strangford Lough, Northern Ireland. At least 17,000 Common seals in northwest European waters have died. The cause of the epidemic is still subject to much speculation. It has been suggested that the source of the virus may have been due to Common Seals coming into contact with Harp Seals in 1987 when an abnormally high number of Harp Seals were recorded in the North Sea. No link with pollution has yet been demonstrated.

Currently (April 1989), the epidemic appears to have halted. However there are fears that there may be a resurgence when Common Seals congregate to breed in June. Anyone seeing a dead or distressed Common Seal is asked to contact the Sea Mammal Research Unit (0223 311354).

East Coast Seals

Percy Trett



Scroby Island lying two and a half miles out in the North Sea off Yarmouth, normally has a resident population of about 120 Common Seals, (*Phoca vitulina*) and a visiting and breeding herd of between 420 and 900 Atlantic Grey Seals, (*Halichoerus grypus*). However, only a proportion of the herds are ever assembled on the bank itself. The number of Greys fluctuates considerably from year to year, a situation caused by the fact that the Island acts as an overspill area for the Farne Island herds. When the number on the Farnes reaches saturation point, late arriving and minor harem bulls and also non-breeding animals are excluded and travel down the North Sea and establish themselves on Scroby. Bulls, in the main, arrive before the cows. About a fortnight after the bulls appear, the cows are seen hauled out among them and normally about two to three days before Christmas the pups are dropped on to the beaches. This pupping continues until mid-January, followed by the weaning, mating and finally dispersal by the end of March.

During 1988 the North Sea herds of Common Seals have been greatly reduced in numbers by, it is thought, phocine distemper. Strangely, the seven dead seals that were removed and examined from Yarmouth area beaches did not die from that cause. One was injured and died from injuries most probably caused by propeller strike, one of pneumonia and the rest from septicaemia. It appears that their natural resistance had been reduced and they had succumbed to illnesses and minor cuts that would normally have proved non-fatal. What reduced their natural immunity is debatable. The fact remains that the resident herd of Common Seals on Scroby has been reduced to some thirty individuals and that the visiting herds of Grey Seals did not come to the Island nor to their alternative hauling-out beach at Horsey at all this year. I can only presume that due to the prevalent offshore winds of last summer, many dead seal bodies were washed out to sea, thus denying the authorities the opportunity of examining more carcasses.

It remains to be seen whether nature will be able to compensate by establishing immunity if the cause is viral. If the cause is chemical pollution, then we may be witnessing the eradication of seals on our coasts. Water and seabed sampling by three independent laboratories continues and so far their interim reports are disturbing.

Norfolk Deer Parks

D A Henshilwood



JOHN LAST

The three remaining deer parks in Norfolk, at Melton Constable, Houghton and Holkham are the last survivors of over forty historical deer parks in the county. Earliest references to deer parks are to be found in Domesday Book. Their development during the Saxon and Norman eras emphasises the importance which was attached to deer hunting. It is the Normans who are credited with the widespread introduction of the Fallow Deer and by the time Domesday Book was written Fallow stocked thirty-one English deer parks. In the ensuing history it was the Fallow Deer which was the species used to stock the newly created parks.

To anyone acquainted with the predominantly open, tree-dotted, landscapes of Norfolk's remaining parks, which form the setting for imposing architectural designs, a visit to Norfolk's earliest deer park at Costessey would reveal some unexpected features. Costessey in 1086 would have been a typical hunting park with large areas of forest enclosed within an encircling boundary wall. Modifying the landscape, or providing the setting for a country house did not enter into the plan. A Norman park was designed to provide an adequate supply of quarry species for the hunt, whilst protecting these species for the sole enjoyment of the landowner. Harsh penalties imposed for attempting to poach game emphasise the importance then attached to hunting.

Although Costessey was the first of Norfolk's deer parks, references to it are few and do not enable us to form a very clear picture of its history. Owned by a Saxon called Guert at the time of Edward the Confessor, the park was in the hands of Alan de Bretagne at the Conquest before passing to the Jerningham family. In common with many other deer parks, Costessey was disparked during the Civil War, but its importance lies in showing that Norfolk's historical deer parks were in existence nine hundred years ago.

Following Domesday Book there are scattered references to other early parks. Cawston and Old Buckenham existed by the late 1250's, while Whinborough and Winfarthing, established at the same time, were still in existence in 1581 and 1604 respectively. Little Ham and West Ham (1277) were in the hands of the Wodehouse family in 1561 and then passed to Sir Thomas Gaudy in 1585. Horsford, Hevingham, Earsham and Kenninghall, the last two established by the Dukes of Norfolk, are other early parks surviving to Elizabethan times.

The Elizabethan period saw a continuing development of the deer park, and a recognition of its value as a landscape feature as well as a hunting preserve. To a prosperous Elizabethan merchant or landowner, a deer park was an important component of his estate. The Pastons of Yarmouth established deer parks at Buxton and Oxnead, followed by the Townshends at Braconash and the Earl of Sussex at Attleborough. The older established park at Hevingham had become a royal park by 1610, together with further royal parks at Dereham and Shipdham. In the north of the county a group of parks at Baconsthorpe, Felbrigg and Thornage was in existence by 1581. The continuing development of deer parks in the county reflected a national trend. The Elizabethan period saw over seven hundred parks in existence throughout the country by 1580. It was a total which subsequent generations proved unable to equal.

What factors contributed to the decline of deer parks in the seventeenth century? Undoubtedly there were some Elizabethan landowners — encouraged by the prosperity of the age — who established parks and then found themselves unable to meet the expenses of running large estates. Much the most important factor, however, was the Civil War. The bitter conflict led to the destruction of deer parks on a large scale. Park walls were destroyed, the deer hunted for food and timber felled for ship building. Norfolk's oldest park at Costessey was a victim of this process and references to other Elizabethan parks either ceased or were interrupted by the Civil War. Not until the reign of Charles II did the creation of new parks repair some of the damage, leading to the resurgence of the deer park as a landscape feature in eighteenth and nineteenth century estates. The destruc-

tion wrought by the Civil War was to provide a foretaste of the problems of maintaining deer parks during national conflicts — problems which re-emerged as the twentieth century's major conflicts reduced further the number of viable parks.

The eighteenth century provides us with two of the best-known Norfolk parks: Houghton, established in 1722 and Holkham completed between 1735 and 1759. In area Holkham was one of the largest enclosures, its 790 acres exceeded only by Gunton where an 825 acre park was established in 1825. The expense involved in constructing deer park walls was often considerable. The nineteenth century wall of the present park at Holkham took over six years to build and is nearly nine miles long. Elmham and Kimberley were other newly created eighteenth century parks, while Blickling disparked some time after 1581 and enjoyed a resurgence in the nineteenth century. The concept of the royal deer park also continued into the nineteenth century when Sandringham was created in 1863. Scattered references reveal the presence of deer at a number of other estates including Weeting St. Mary, Rainham, Shadwell, North Elmham, Rackheath and Bayfield.

Despite this apparent increase in activity, the cumulative total of deer parks in the county was decreasing during the late eighteenth century. North Elmham had been disparked in 1844, followed by Rackheath in 1850 and Shadwell in 1867. By the time that Whitaker wrote his treatise *Deer Parks and Paddocks of England* in 1892 only eight parks were still in existence: the three contemporary surviving parks at Melton Constable, Houghton and Holkham together with Gunton, Blickling, Elmham, Kimberley and Sandringham. Two World Wars presented the owners of deer parks with sometimes intractable problems. In addition to direct destruction or disturbance through timber-felling or breaching park walls, the pressure from food production made the maintenance of large areas of grass increasingly difficult. The royal park at Sandringham was ploughed-up in World War II, as were parts of Holkham Park. Gunton's herd had dwindled to only six animals by 1938 and was extinct soon afterwards; Kimberley was a victim of the first World War and Blickling had ceased to exist after the second, its herd escaping through breaches in the walls. In the period following World War II agricultural self-sufficiency and increased production were the main objectives of many estates, mitigating against the re-establishment of historic deer parks.

We have seen that the establishment of Fallow Deer in Britain owed much to the Normans' enthusiasm for hunting and that Fallow were the principal species stocked in deer parks. At the time of Whitaker's survey, the largest herd of deer — 400 — was recorded at Holkham with 300 at Sandringham and over 200 at Houghton and Blickling. It would however be a mistake to assume that all the county's parks were stocked with Fallow. As long ago as the thirteenth century the park at Melton Constable was stocked with Red Deer and in 1892 herds of Red Deer were maintained at Sandringham (30) and Melton Constable (70) with a smaller group at Blickling. Shadwell maintained about 100 Red Deer until 1867 and although Houghton is now a Fallow Deer park it is clear that Red Deer were present there in the eighteenth century. The Royal huntsman, William Lowen, received the sum of £166.10s.0d for taking 100 Red Deer at Houghton and transferring some to Windsor. Such movements between parks were normal practice. Sandringham was stocked with Fallow from Windsor in 1863 whilst many of the Holkham Fallow Deer are descendants of a series of transfers from North Elmham. This park came into the ownership of the Coke family and the entire stock was moved to Holkham in 1844 following a series of earlier transfers from 1796 onwards. For many years after the disparking of North Elmham the vicar of the parish received a payment from Lord Leicester in lieu of the buck from the Elmham herd to which he was entitled to each year.

Of the three remaining deer parks Melton Constable has much the longest history and is the only deer park in the county to support Sika Deer. Introduced to Britain about 1860, the Sika was imported to Ireland by Viscount Powerscourt of Enniskerry, County Wicklow.

Around 1900 some animals were transferred to Melton Constable, joining the Red and Fallow Deer which Whitaker recorded in 1892. By 1949, Red, Sika and Fallow were all present in the same park. At the present time Melton Constable contains a total of some 300 deer divided almost equally between Red, Sika and the black variety of Fallow. The two herds of Fallow, at Holkham (700) and Houghton (1,000) also offer an instructive contrast. The Holkham herd has bred naturally, the Houghton herd has been selectively managed to promote the white form of the Fallow Deer, a few examples of which were present in 1949. The result of this selective management is the herd of all-white Fallow which forms such a striking feature of the park.

The maintenance of park deer in an enclosed environment has always required a certain amount of active management, aimed at maintaining a healthy breeding stock and a correctly balanced ratio between mature bucks, does and younger animals. Additional management may be required to maintain suitable grazing or to provide lying-up areas for newly-born fawns. At Holkham, for example, there is no tractor mowing of ground vegetation beneath the parkland trees during the summer months. Traditionally, the costs of managing the deer herd have been met by the sale of culled animals. More recently, the development of commercial deer farming and breeding has provided more opportunities for the three remaining deer parks to export live animals to other areas. Accurate counting of herds, checking of body weight and condition, experimental breeding with bucks introduced from other herds, the development of safe methods of capture and handling and improved veterinary care have all featured in the more active recent management of deer parks. With this recent resurgence of interest the future of Norfolk's remaining deer parks looks set to maintain the nine hundred-year tradition dating back to the county's first deer park at Costessey in 1086.

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Classified Notes



INSECTIVORA

Hedgehogs *Erinaceus europaeus* made the most of their opportunities during the autumn and were seen out and about in every month through to the following spring, evoking many an anxious 'phone call from worried householders. Coverage over the county from the distribution point of view was more widespread than in 1987 and contributors reported 'many' sightings. One's own notes in central Norfolk show fewer road casualties which gives concern that it indicates a fall in total numbers, which is yet to be confirmed. There is no fear that the Hedgehog is on the verge of becoming an endangered species. It is just that it could have become back-garden dependent.

No fears for *Talpa europaea*, the Mole! Even without the occasional cat catch and owl pellet evidence, its unseen presence is testified by innumerable heaps. Many in the Snettisham area but only one at home says our relieved correspondent!

Two Moles found in widely separated localities on the road surface showed scabbed, mangled hind-parts, proof indeed that they are not without problems even in their underground retreats. A 'golden' variant from Costessey added a touch of colour to the lists.

Common Shrews *Sorex araneus* were found county-wide on doorsteps, presumably offered by cats, and down in the cellar at Hempnall. Perhaps they were hunting invertebrates there. 'Fewer' reported from Watton which may not reflect the total population, but does sum up the number of references to the Pigmy Shrew *Sorex minutus* which has a very sparse coverage on this year's map. It is represented on only 6 of our 10km. squares.

Strangely, as many squares were marked for the Water Shrew *Neomys fodiens* with the additional cheerful news from Breckland that in spite of the problems of suitable waters the species has been seen in many locations though the sites are not specified. Now Honeypot Wood is an official reserve they should have security of tenure at least. Several have been seen there. One unfortunate found running in a tight circle was examined and found to be wounded on the side of the head. Not surprisingly it died 4 hours later.

LAGOMORPHA

The story of both our lagomorphs is somewhat confused. The rise and fall of the Rabbit *Oryctolagus cuniculus* in different parts of the county reflects both the relative degrees of ability to survive the forms of myxomatosis now with us and the efficiency of other control measures. A significant figure is quoted from Scolt Head where the disease caused a drop in numbers of 80%. The question is, how long will the remaining 20% take to restore the colony to its previous strength?

Hare shoots have been suspended, temporarily or permanently, in some parts of the county, so relieving the pressure on the species in that respect. Large bags from Hare-favoured corners for winter congregation are still reported.

At Holme the Hares *Lepus capensis* were frequently found grazing the salt-marshes. More were seen there than on arable fields. Of the 3 seen by the dunes March 20th, one had clearly been in the water. Bird-watchers at Cley in late September were astonished to see a Hare actually in the water swimming out to sea. It was estimated to have continued for 60 to 70 yards before turning back to shore. A heavy swell was running and the tiring animal took five attempts before it could feel dry land under its feet again.



RODENTIA

Confirmed Red Squirrel *Sciurus vulgaris* reports are all from Thetford Forest. Reports on the Grey Squirrel *Sciurus carolinensis* suggest that while the few pockets of unoccupied suitable territory are being filled, the general population is settling down to its own natural level. "Common but not increasing" says a Sparham correspondent and that seems to sum up the situation. There are so many seen on such a regular basis that they will soon be ignored by recorders! Their destructive tendency has included taking house sparrows from under roof tiles.

It was Voles that nipped leaf and flower buds from the clematis at Thornham. Both Bank voles *Clethrionomys glareolus* and Short-tailed field voles *Microtus agrestis* seemed to be in good numbers in suitable habitat, a proviso so necessary to restate.

Cheerful news of the Water Vole *Arvicola terrestris* which continues to restock suitable waterways. In Old Hunstanton Park two were seen taking underwater food in an ornamental pond and coming up for air through the weed "like soldiers in camouflage." An old colony at Snettisham has gone and few were seen this year on the Sweet Briar Meadows at Norwich, but over the county as a whole more were reported.

Easily the most widely reported small rodent is the Wood Mouse *Apodemus sylvaticus* which in spite of its name is frequently found by habitations, eating garden berries, taking food put out for birds, using bird's nest boxes and generally taking as much advantage as it can, even appearing to thrive on poisoned wheat for several weeks until finally succumbing.

The Yellow-necked Mouse *Apodemus flavicollis* was not quite so elusive this year. An unexpected report from Burnham Deepdale puts the mouse well out of its expected range. Two caught in live traps in Scole were well within their range along the Waveney valley.

Fewer individual records for the Harvest Mouse *Micromys minutus* than in last years abnormally high list. We have returned to the usual level, but have added to the distribution map.

Brown Rats *Rattus norvegicus* were completely out of step with records that came in. Conditions helped them to increase to such a degree that numbers were high enough to cause local alarm.

Notes on the Coypu are contributed by Dr. Morris Gosling.

In last year's report I wrote that the success of the attempt to eradicate Coypus still hung in the balance. Although no Coypus had been recorded since a small group was trapped in April 1987 near St. Neots it was still far from certain that no Coypus remained in the

extensive wetlands of eastern England. This caution proved well founded and two Coypus were detected during 1988, both the victims of road accidents and both unusually old males. One was killed near Barton Bendish in west Norfolk in July and the other near Peterborough in September. Large areas around both sites were carefully checked but no further Coypus were found. There seemed no danger that these animals belonged to breeding groups and it was decided that they should not affect the planned end of the trapping campaign.

In January 1989, 21 months had passed without any evidence of Coypus other than the two elderly males. At this point, as previously agreed, the campaign ended and the Coypu Control organization was disbanded. The vehicles and trapping equipment of the 24 strong trapper force were sold off and the trappers were paid the substantial cash bonuses which had been promised in the event of a successful campaign. But although there is little chance that a viable population of Coypus remains, it will be some years before this is absolutely certain. Field staff from the ADAS Mammal Ecology Group will continue to carry out detailed surveys and follow up reports from members of the public, at least up to March 1990.

CARNIVORA

Yearling Foxes *Vulpes vulpes* at play were seen at Holme where they have become common during the past five years. A less charming side to their nature on Scolt where they took Oystercatcher's eggs, but at least they were thought to have been repaying the birds in kind. Much more seriously, a dog Fox eluded all attempts to despatch it and wreaked havoc in the ternery. It was held responsible over a period for at least 60 Sandwich tern deaths and for taking over a thousand chicks. The number of Foxes along the North Coast gave rise to concern over the year.

Young Foxes seen at an old badger sett in Central Norfolk take us back to the time when Badgers were brought in to dig holes that could be taken over in this way. One Breckland contributor saw more Foxes than ever before and over the county as a whole the species is holding its own.

From the very few records received, no proper comments can be attempted for either the Badger or the Otter.

Many references to the Stoat *Mustela erminea* and Weasel *Mustela nivalis* including flatly contradictory statements on their status. Local conditions play an important part. Recordors of lengthy experience do suggest that numbers of both are down when compared to the figures of say ten years ago. It does seem the logical result of the shrinking habitat of the prey animals taken by these tiny carnivores.

A Stoat in ermine was seen at Weyborne in the spring.

On Scolt, it was the decline in Rabbit numbers mentioned above that appears to have driven the stoats to take eggs in such numbers.

Mink *Mustela vison* were seen from Hickling in the east, across to Pentney and on to Welney in the west. Their status is not clearly focused and we need much more data. An article on Mink in East Anglia is in preparation.

CETACEA

An interesting set of cetacean records for the year, headed by the body of a young male Northern Bottle-nosed whale *Hyperoodon ampullatus* washed ashore on Scolt. Some 22 feet long, it was estimated to have been dead between one and two weeks.

Porpoises *Phocoena phocoena* were much more in evidence than in most recent years, though the numbers seen is tiny in comparison with the familiar sightings of a generation ago. Five at Paston in July represent porpoises seen every month there and others were noted most frequently off Cley. Further sightings were off Scolt, Titchwell, Trimmingham,

Brancaster Staithe and Blakeney Point. A correlation with bird-watching vantage points is fairly obvious!

M. Fiszer again comes up with an unusual record entirely due to sea scanning for a Surf Scoter, followed by careful documentation, sketching and research. His notes clearly indicates a Lesser Rorqual whale passing by Holme.

ARTIODACTYLA

Notes on this group are supplied by Bill Flynn.

It is widely acknowledged that over the past twenty years there has been a significant increase in the population of most species of wild deer throughout England. This trend has been much more apparent in the southern counties, but it is now being accepted that in Norfolk there has also been a marked escalation in numbers. Any attempt to produce an accurate estimate and precise locations where the various species may be found, would, it is considered, be both foolhardy and presumptuous. These notes are, therefore, confined to general descriptions, comments, rough population sizes and general geographic areas. Norfolk must be one of the very few, if not the only, county where all six of the main wild species can be seen.

Red Deer *Cervus elaphus*. The largest of our native land mammals, and believed to be enjoying a resurgence in numbers after a period when fears had been expressed that extinction might have been threatened. A combination of poaching, road traffic accidents and sometimes ill-advised crop protection control methods seemed to be reducing known numbers to a dangerous level. New protective legislation, enlightened attitudes on management and firm and co-ordinated campaigns against poaching may have been contributory factors in what appears to be a favourable trend in population increases. Not only have significant increases in sightings been reported — both in Thetford Forest areas and in North and West Norfolk strongholds of the red deer — but even more encouraging are the confirmed reports on the excellent quality and state of health of the resident wild Red Deer. Recent observations strongly indicates that some of our North Norfolk deer may now be considered superior in quality and health to those in the remainder of the county.

Estimates of the county population vary between five and six hundred.

Fallow Deer *Dama dama*. Although some increase in numbers seem to have been generally accepted there does not appear to have been any significant evidence of colonisation of new areas. Possibly due to the fear of crop damage, numbers in mid and west Norfolk may have been contained.

Melanistic or dark Fallow appear to predominate in the Wensum Forest and mid-Norfolk areas. This would suggest the influence of the long-established melanistic herd in Melton Constable Park, especially as escapees have added to the wild stock over the years. Indications are that there are probably less Fallow than Red Deer over the county and that they are more widely dispersed.

Roe Deer *Capreolus capreolus*. Thetford Forest has long been the stronghold of the Roe Deer in East Anglia. Over the last two decades the forest has reached a level of maturity that has dictated a massive increase in forestry operations and harvesting. The varied operations from clear-felling of mature pines to the re-planting of new compartments has had a marked effect on Roe populations. Initially the Roe, disturbed by the disappearance of accepted habitat, followed the usual colonisation patterns and moved in search of alternative territory. In the southern counties of England, noticeably Surrey, Hampshire, Wiltshire and Sussex, Roe have colonised almost every small wood and even hedgerows. Around Thetford Forest there does not appear to have been any similar pattern. It would seem instead that the preference of the Roe for a mainly woodland habitat has taken them back into alternative territories within the forest. This seems to indicate that there is now an ultimately greater density of Roe within the forest which will produce a larger number

of natural migrants leading to further distant colonisation. Although we have this different pattern of colonisation here in Norfolk, it is agreed by many observers that Roe are appearing almost all over the county.

Comparisons of body weight and antler quality have often indicated that Norfolk Roe lag somewhat behind those measured in the southern counties. Where meticulous records have been kept, proof does exist that in the last decade both factors have improved in Norfolk.

Based on Roe population census figures on estates and forests where a March count is carried out, indications are that the total county population of Roe may now be in the region of six thousand animals. Evidence also suggests that the carrying capacity of the forest-type habitat has not been exceeded, and therefore a further increase can be expected before a density level is reached that might have detrimental effects on health levels.

Sika Deer *Cervus nippon*. Probably the least numerous of the species found living wild in the county and almost certainly escapees, or their progeny, from Melton Constable Park. Occasional, often unauthenticated, reports of sightings from across north and mid-Norfolk give reason to believe that some small fragmented herds may exist. There is no evidence to suggest that the Sika are likely to achieve a degree of colonising success comparable to that in the Poole basin, South Dorset, where they have been prolific and probably outnumber other wild species. With one or two exceptions, the sightings appear to have been of Japanese Sika whereas in the Thetford area they appear to have been of Formosan Sika, possibly due to the proximity of Kilverstone Park where the Formosan are resident.

The possibility of hybridisation between Sika and native Red Deer does give cause for concern. Research from areas where there has been excessive hybridisation, for example Southern Ireland, Cumbria and Galloway, all indicate an undesirable dilution of the quality and characteristics of the native Red Deer population.

Muntjac *Muntiacus reevesi*. This is the great breeding and colonisation success story of the past two decades. These little characters have built up their density and established as very firm base throughout the Thetford Forest from which their colonising marches seem to extend in all directions. There are now very few parts of Norfolk where no traces of them are seen, and much like the small asian, Chinese Water deer, with which they are often confused. Their presence in an area can go undetected so easily. Unlike native British deer, since Muntjac have no fixed breeding season, and females give birth almost invariably twice a year, their potential for rapid population expansion is easily understood.

Their preferred habitat is thick bramble or dense cover within woodlands and as predominantly browsing rather than grazing animals they are not renowned as potential crop damagers of a serious nature. Add to this a natural reluctance to manage or control this species, situations may arise in the future — as they have elsewhere in the past — when a surreptitious escalation in numbers suddenly reaches the point where damage reaches an unacceptable level. It is then that these otherwise attractive little creatures rapidly lose their popularity. It is possible they are already as numerous as the Roe Deer in the county and may soon exceed them.

Chinese Water Deer *Hydropotes inermis*. These are probably the most secretive and shy of our wild deer species. Their choice of habitat almost invariably means their presence remains unknown for an amazing length of time. They seem to select the most inaccessible areas and thrive where humans rarely, if ever, go. Throughout Broadland, along the Waveney Valley, and even the North Norfolk coast, their colonisation of some of the really wild areas has gone on almost unnoticed. Their procreative potential is enhanced by the fact that multibirths are normal, with low infant mortality and high survival rates. Triplets are common, whilst four, five and even seven have been recorded.

Originating from the marshlands of S.E. China, our marshland wildernesses could provide a haven in which they are likely to thrive for many years to come.

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