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NORFOLK

Bird & Mammal

Report

1982



Published by The Norfolk & Norwich
Naturalists Society in association with Norfolk
Ornithologists Association

ISBN 0375 - 7226

Price £1.50

Vol. 26 Part 4

August 1983

Norfolk Bird Report - 1982

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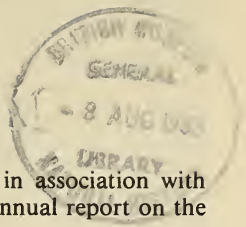
Norfolk Mammal Report - 1982

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Published by THE NORFOLK & NORWICH NATURALISTS SOCIETY, Castle Museum, Norwich (*Transactions* Volume 26 Part 4 August 1983) in association with NORFOLK ORNITHOLOGISTS ASSOCIATION, Aslack Way, Holme-next-Sea, Hunstanton.

NORFOLK BIRD REPORT 1982



Editorial

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

Thirty Years as Editor

This issue of the *Norfolk Bird Report* represents a special milestone in the publication of the annual summary of bird life in Norfolk, not only because it is the first under the new partnership of the Norfolk and Norwich Naturalists' Society and the Norfolk Ornithologists Association, but it is the Thirtieth number in the present series. The first report in this format was published in 1954 covering the events of 1953, and all 30 issues have been master-minded by our Editor — Michael Seago.

Michael's interest in birds began towards the end of the War with visits to Breydon and other marshland areas where his particular interest in waders commenced. Amongst those who encouraged him in his hobby was the late Dr. B. B. Riviere, whose book on the *Birds of Norfolk* was the current 'standard work', and H. G. Alexander, whom he met during his Military Service on board a troopship en route to the East.

Although the County had an annual publication covering various aspects of ornithological interest, no attempt at producing a full summary had been made since Dr. Riviere's annual reports published in the Magazine "*British Birds*" ceased in 1935. With the encouragement of Dr. Riviere, Dick Bagnall-Oakeley and Richard Richardson, amongst others, Michael undertook the task to rectify this situation for what was probably Britain's best bird-watching County. An early innovation was the inclusion of line drawings of species significant in the particular year, a practice now widely adopted. It is appropriate that in this anniversary number, a selection of the late Richard Richardson's charming vignettes, prepared for previous issues, is being used again.

Michael is one of the longest serving County Report Editors and his encyclopaedic knowledge of the County and its avifauna is widely recognised. This he shares with a wide public through his regular press articles and two editions of his book *Birds of Norfolk* first published in 1967 as a successor to Dr. Riviere's 1930 work.

In addition to his writing Michael has given a considerable amount of time and effort over the years in conservation activities, being a member of the Council of the Norfolk Naturalists Trust and having served on many of its Committees. All naturalists and others who have an interest in Norfolk bird life are grateful for his efforts over the past three decades and all sincerely hope he will continue his sterling work for many years to come.

D.A.D.

Review of the Year: At the beginning of 1982, wildfowl were abundant on the Ouse Washes. Impressive counts at Welney included 15,000 Wigeon, 3500 Mallard and 800 Pintail. The Bewick's Swan peak at evening feed was 3000 and Whoopers reached a maximum of 140. Among the latter were birds carrying Icelandic neck collars. Prior to this discovery it had been assumed these birds were of Scandinavian origin. Severe weather soon developed resulting in spectacular Wigeon totals on the coast. At Lynn Point 7000 assembled together with 5000 at Snettisham, 4000 at Burnham Norton, 5500 at Blakeney, 5800 at Breydon Water and 7500 in the Yare Valley.

Milder conditions in February saw a return of wildfowl to the Washes. In south-east Norfolk, unusually high Bean Goose numbers were present with a maximum of 329. All had departed by March 7th. Inland; one of the most interesting visitors throughout January and February was a Black-bellied Dipper at Bawburgh Mill.

The recent discovery of Hen Harrier communal roosts has attracted much attention. As many as 22 occupied a single north coast reedbed. Each night these splendid birds would sit it out through the long hours of darkness in their roofless beds. Even in the wettest weather these sites continued to be occupied, the matted vegetation and flattened reeds forming adequate platforms. At another site all the pellets examined were found to contain remains of finches and buntings. There was no evidence of mammal bones.

Lapland Buntings, which are thought to journey here in autumn from Greenland remain birds of mystery. The numbers vary greatly from year to year and once favoured localities may be suddenly deserted. In 1982 fresh-marshes in the vicinity of Scolt Head have been favoured; up to 120 were in residence during February. At the beginning of the year the same meadows attracted over 100 corn buntings. The largest local Lapland Bunting flock was discovered on Halvergate Marshes in 1980 when the birds peaked at 130.

Most delightful of marine ducks, Long-tails again wintered off the coast. Despite a south-westerly gale March 3rd over 70 were found off Scolt Head, the drakes performing "parachute" displays. By the end of April the great battalions of Brent Geese had departed heading for breeding grounds on the harsh and most northerly coast of mainland Siberia on the Taymyr Peninsular. However, 800 remained on The Wash at Lynn Point and 120 were still to be found in mid-May.

The Collared Dove was added to the British List as recently as 1955 and yet within a decade almost the whole of Britain had been colonised. Today it is abundant; as indicated by an April flock of 190 at King's Lynn docks. Earlier in the year 150 estimated at Egmore airfield. Exceptional numbers of Siskins were also recorded during 1982.

Spoonbills made prolonged stays on the coast between early May and mid-December. Titchwell was the most favoured haunt where 4 lingered a fortnight in August. If only these splendid visitors would stay and nest . . . Among the host of Northern passage waders diminutive Temminck's Stints provided red-letter days for fortunate observers. As many as 6 visited Cley lagoons during mid-May and a further 8 passed through Hickling wader grounds. Temminck's Stint breeding range is largely north of the Arctic Circle, but on more than one occasion Norfolk ornithologists have observed the moth-like display flight and the accompanying delightful tinkling song. An equally exciting May arrival was a Terek Sandpiper at Cley three days and Broadbilled Sandpipers at both Cley and Hickling. The galaxy of surprises extended to White Stork, Dotterel, Red-necked Phalarope, Ospreys, Golden Orioles, Red-throated Pipit, Hoopoes, Lesser Grey Shrike, Grey-headed Wagtails and 3 Black-necked Grebes each in superb breeding plumage.

Among non-breeding vagrants were splendid Rose-coloured Starlings at Old

Hunstanton and Little Walsingham. Over-summering Little Gulls have become a feature at wetland reserves. As many as 25 graced the Titchwell lagoons for weeks with others at Cley and Hickling. Small groups of Little Gulls (usually in company with Black-headed Gulls and Black Terns) breed from Holland and Denmark eastward and a pair attempted nesting at Hickling in 1978.

Careful scanning of gull flocks is always worth while. During the year one observer detected 11 different Mediterranean Gulls — all at Yarmouth and Breydon apart from a wanderer at Buckenham. Avocets returned to Cley March 5th and the final count was 26 breeding pairs. At least 55 young reached the flying stage. The Cley colony began as recently as 1977. In addition single pairs of Avocets nested at Holme and Hickling.

Sadly no Marsh Harriers bred at Hickling, but elsewhere in the county a total of 19 females nested and a record 42 young fledged. This is most encouraging when compared with the depressing period from 1960 when the Marsh Harrier was absent in Norfolk as a breeder. Montagu's Harrier is not matching the upsurge shown by the Marsh Harrier and remains one of our rarest migrants. However, a single male and 2 females bred, rearing a total of 4 young. This is the first successful nesting in Norfolk since 1978.

Bitterns continued declining: only 5 regular boomers in the whole of Broadland and a further 5 in north coast raebeds. Twenty pairs of Black-tailed Godwits summered at Welney and 15 broods of young were recorded — a record for Refuge. Broadland Bearded Tits had a good season: over 100 pairs were in residence at Hickling, Whiteslea and Heigham Sounds. Additional colonies were recorded on the north coast.

Little Ringed Plovers have bred in Norfolk since 1960 occupying flooded gravel pits and beet factory settling ponds. At least 26 pairs nested in the county. Garganey have become decidedly rare and the UK population is no more than fifty breeding pairs. At least one pair was successful at Cley. Black Redstarts have summered at Yarmouth since the 1950s; 9 singing males were found this year.

July is often considered a quiet month. Even so Cley produced an elegant Marsh Sandpiper, a White-winged Black Tern two days later and another Broad-billed Sandpiper. A White Stork watched by many in Gunton Park early in July lingered almost three months in the vicinity of Hickling and Horsey. July high tide wader counts on the east Wash make impressive reading: over 100 Black-tailed Godwits and 41 Greenshank. At the month end over 800 Shelduck headed north-east over Titchwell bound for moulting grounds on the Weser and Elbe estuaries.

New World waders are a special attraction. This year's selection included 4 Pectoral and single White-rumped, Baird's and Buff-breasted Sandpipers. The last-named breeds in the high arctic tundra of northern Canada and Alaska, wintering on the plains of Argentina. White-rumps, too, winter in Argentina where it is said to be the commonest shore bird. Wader passage continued throughout August. At Snettisham Greenshank totalled 50 and Spotted Redshank a remarkable 172. September was a disappointing month for migration students, but among the surprises was a Booted Warbler (from northern and central Russia) still under consideration by British Birds Rarities Committee, also a Bonelli's Warbler, several Leach's Petrels and Sabine's Gulls. Cley Eye Field proved very attractive at this time. Up to 80 Bar-tailed Godwits and 50 Curlew-sandpipers fed day after day on newly hatched crane flies.

The first Brent Geese returned in mid-September having enjoyed a highly successful season in contrast to the two previous summers. Many pairs were accompanied by 4 or 5 young birds. Winds became north-easterly for the first time in weeks on October 6th. The following morning gale conditions carried the sea birds close in-

shore. Lynn Point produced 17 Pomarine and 144 Great Skuas. Off Sheringham 200 Arctic Skuas and 50 Little Gulls passed off-shore. A further sea bird movement took place a week later. Barnacle Geese arrived in some numbers following the brief appearance of 11 on West Runton cliffs October 8th. A similar number appeared later in the year at Snettisham whilst 49 made a prolonged stay near Horsey.

The bird of the autumn must be Pallas's Warbler. Two waves of arrivals of this gem-like Asiatic leaf warbler were recorded following the development of an intense anticyclone over western Russia. The county total was at least 18 completely overshadowing the previous 'best' total of 8 in 1981. By way of contrast no Bluethroats or Ortolans were recorded for the first time in many years. Mid-October also produced a Little Bunting and single Radde's and Dusky Warblers. October excitements continued and on 24th a Glossy Ibis moved westwards along the north coast.

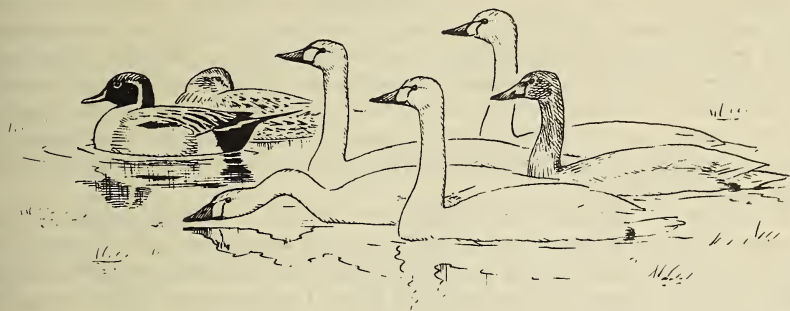
An interesting Slavonian Grebe movement took place from the end of October until mid-November; as many as 9 appeared off Titchwell and Holme and up to 18 off Wells/Holkham. The beginning of November saw the arrival of further Radde's and Dusky Warblers whilst the 5th brought a Red Kite to Holme. The same day thousands of brent geese, together with other wildfowl, streamed south along the Norfolk coast. Inland, a Grey Phalarope was spinning on a Breckland mere on 13th. The absence of frosts in November enabled many Swallows and House Martins to remain until the month-end. Other grey phalaropes appeared at Cley and Mundesley followed by flights of Bearded Tits at University Broad Earham and nearby marshes and an adult Night Heron at Briston. The year ended with impressive skeins of Pink-footed Geese in north Norfolk. As many as 5000 spent the short winter days feeding on sugar-beet tops.

Recording: Records for the 1983 Report should be sent *by the end of January* to Michael J. Seago, 33 Acacia Road, Thorpe St. Andrew, Norwich NR7 0PP. Contributors are requested to submit notes in the order followed in Dr. K. H. Voous's *List of Recent Holarctic Bird Species* (1977). In order to minimise the work involved, records will not normally be acknowledged. The names of all contributors will be included in the Report.

The County Records Committee (B. Bland, G. E. Dunmore, D. J. Holman, S. C. Joyner and J. B. Kemp) considered many records of semi-rarities seen in Norfolk during the year, ie those species listed in the 1980 Report page 236. A total of 27 records was rejected (including 13 from three observers); only a very small percentage of the records contained in the Classified List. Commencing 1st January 1983 records of the following will no longer be assessed by the national Rarities Committee for publication in *British Birds*: Cory's Shearwater, Purple Heron, White Stork, Buff-breasted Sandpiper, Richard's Pipit, Tawny Pipit, Savi's Warbler, Aquatic Warbler, Serin and Scarlet Rosefinch. This decision has been made on the basis of numbers seen of the particular species and not ease of identification. As all these species are either rare or semi-rare in the county any such future records (from 1983 onwards) will now be considered by the County Records Committee in addition to those species listed in the 1980 Report.

Acknowledgements: Thanks are due to G. M. S. Easy for the cover drawing of Barnacle Geese and for text illustrations; also to Dr. K. Carlson, R. Jones and Dr. M. P. Taylor for photographs and to R. Millington for drawings in addition to vignettes by the late R. A. Richardson; to Holme Bird Observatory/Norfolk Ornithologists Association for records; to Norfolk Naturalists Trust Wardens; to the National Trust (Blakeney Point); to the Nature Conservancy Council (Scolt Head,

Bure Marshes (Woodbastwick) and Hoveton Great Broad); to the Royal Society for the Protection of Birds (Strumpshaw, Titchwell and Snettisham); to Nar Valley Ornithological Society; to G. E. Dunmore (for liaising with British Birds Rarities Committee and acting as Secretary/Chairman of the local Records Committee); to P. R. Allard and D. A. Dorling for assistance and encouragement over many years; to P. D. Kirby, Mrs. J. Dunmore, Mrs. P. A. Rix and Mrs. S. F. Seago and to all other contributors.



The BTO in Norfolk

In addition to the long-term monitoring programmes, such as the Ringing Scheme and the Common Bird Census, short-term enquiries are also organised by the British Trust for Ornithology. Although the BTO may organise these projects, much of the fieldwork is often undertaken by non-BTO members, through the local societies. The majority of the surveys are based on 10-km squares and for organisational purposes, the County is divided into East and West Norfolk. The 6.00 grid line, which passes due south through Blakeney Point, acting as the dividing line.

In recent years, an attempt has been made to publish the County results in the *Norfolk Bird Report*, the Breeding Waders of Wet Meadows being an example this year. Below is given the relevant BTO surveys for which help is, or will be, required in the near future.

Winter Atlas — a three year project, for which the 1983/1984 winter will be the final season. On the whole Norfolk has been extremely well covered, but records of Owls in the three winters are still needed to complete the picture. The recording season is from mid-November to the end of February.

Mute Swan — at the request of the Nature Conservancy Council, a repeat of the 1978 Mute Swan Census has taken place in the spring and early summer of 1983. Records are required of non-breeding birds in April and breeding pairs, with details of success, if known, in May and June.

Ringed Plover, Little Ringed Plover and Wood Warbler — the summer of 1984 sees full breeding surveys of all three species. All offers of help will be much appreciated, as well as any casual records made during the breeding season.

For further details, please contact one of the local organisers, to whom records should be sent, including, if possible, the map reference of the locality.

East Norfolk — Moss Taylor, 4 Heath Road, Sheringham.

West Norfolk — Alec Bull, Hillcrest, East Tuddenham, Dereham.

The first ten years at Titchwell Marsh

Norman Sills

“Is it peat, Sir?” It was, and after the sixth former’s deduction had been confirmed by the biology master all the other students collected a piece from the strandline, brushed off the sand and picked their way through history. Pine bark, birch bark, iris-like leaves and beetle wings: these were the most easily identified remains of the post-glacial forest; a forest which had extended for 200 miles across low, swampy ground to land we now call Holland and Denmark. But as temperatures gradually increased, the glaciers melted and sea levels rose. The forest became the North Sea and Britain became an island.

That was about 7,000 years ago. Much more recently — perhaps only a thousand years ago — the North Sea laid down banks of sand and shingle just off-shore from the north Norfolk coast and, in the calmer waters between the sandbanks and the mainland, silt was deposited by incoming tides. One veneer of silt after another transformed the mudflats into salt-marshes until, in the 17th and 18th centuries, the land was high enough to be reclaimed by man. The mile-long section of salt-marsh in the parish of Titchwell was enclosed with clay banks in the mid 1700’s and, for 200 years, dykes, land-drains, sluices and pumps kept the fields fit for potatoes and cattle.

But in 1953 the sea retaliated. The highest tide ever recorded washed away part of the northern sea defences and returned the land to salt-marsh again. Dykes became tidal creeks, land-drains became hide-outs for crabs and the sluices and pumps became irrelevant and derelict. Where cattle once lazed in the sun, Redshanks probed the mud for worms, and where teams of men once scythed through ripened corn, Reed Warblers sang from the depths of the newly formed reed-bed. And so it remained for 20 years.

In 1973 the R.S.P.B. purchased 420 acres of Titchwell Marsh. The society had been involved with the protection of a pair of Montagu’s Harriers there during the previous three years and had been impressed with the diversity of habitat and its obvious potential for improvement as a nature reserve.

On close examination it transpired that nearly the whole of the reserve was tidal at one time of the year or another, so although Ringed Plovers could nest in the sand dunes and Bearded Tits could nest in the higher parts of the reed-bed, any birds which attempted to breed on the salt-marsh or in the lower areas of the reed-bed were almost bound to fail. One way or another the sea had to be kept out of at least part of the reserve.

By early 1974 the plans were complete. The idea was to build a sea-wall of clay across the salt-marsh and reed-bed to prevent tides flooding 100 acres of ground. After that the enclosed marsh would be divided into two main sections: a freshwater marsh and a brackish marsh, both of which would complement the salt-marsh beyond the proposed sea-wall. Existing freshwater springs and ditches would be diverted into the new Freshwater Marsh, from where excess water would flow through a sluice in an existing low bank into the brackish marsh. So that brackish conditions could be maintained, and varied if necessary, a large pipe would be put through the sea-wall to permit controlled flooding with sea water. The idea was simple enough.

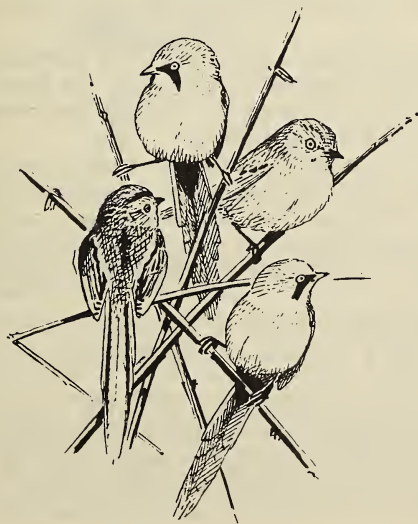
Five years later the work was effectively complete. 60,000 tonnes of clay had been put into sea-walls, 200 metres of pipe had been laid, 10 dams had been built and 10 sluices had been constructed. Drizzle, cold winds, rain, blizzards, severe frost and mud in abundance had accompanied many jobs but so, too, had fine spring mornings, balmy afternoons and peaceful evenings. Heavy drums of diesel had been rolled or floated out to the excavators; trenches had been dug through running sand, stiff clay and black silt; and timber had been dug in, hammered in, bolted, screwed and nailed for any number of reasons. But it wasn't all work. Whilst an excavator was chewing its way from its five-thousandth bucketful of clay to its ten-thousandth, it was often possible to become involved in any biological aspect of the reserve which begged attention. The Tern colony was the first to do so and for a few summers, life revolved around Terns.

Tidal flooding was the main problem confronting the Little Tern colony. In 1973 the population was 22 pairs and, although the shingle spit appeared to be large enough to accommodate many more, the population never exceeded 33 pairs during the following four years.

It was hardly surprising. Almost every year 25% to 50% of the eggs laid were in danger of being washed away by spring tides in May and June. The traditional method of gradually moving the eggs up to higher ground was useless on the relatively flat shingle spit and, in any case, moving over a dozen clutches was likely to result in chaos. There had to be another way.

Ridges — it was claimed — was the answer. But were they? Immediately after the 1976 breeding season the ground level of each nest was measured with a surveyor's level. Interestingly enough the first 50% of the clutches to be laid were significantly higher than the second 50%. So perhaps ridges really were the answer. More measurements were taken in 1977 but, contrary to 1976's findings, the first birds to arrive did not nest on the higher ridges; in fact the nesting levels were random throughout the entire laying phase.

The answer lay in the tide-tables. In the previous year a series of high tides had coincided with the prospecting phase of the first half of the tern population so their



clutches were all laid on relatively high ground. The second half of the population had prospected for nest sites during neap tides so their nests were, on average, lower. In 1977 however, the highest tides didn't cover even the lowest parts of the nesting area whilst the Terns were prospecting, so all of the birds nested at random levels within the overall vertical range of the shingle spit.

Other methods of raising the Terns clutches were tried but it wasn't until clutches were removed before a threatening tide, and replaced afterwards, that any measure of success was achieved. In 1976, for instance, 90% of the eggs which would have been washed away eventually hatched. Some of the clutches were removed and replaced on as many as 10 or 11 tides but all were successful. On average the clutches were kept in numbered boxes for $1\frac{2}{3}$ hours but within minutes of them being returned to the beach the birds were back to recommence incubation. Even two clutches which couldn't be replaced until 11.15 p.m. on a very dark night were warm three hours later.

Many more young fledged between 1976 and 1978 than would otherwise have done so. The breeding population increased to 37 pairs in 1980, 51 pairs in 1981 and 67 pairs in 1982, by which time the shingle spit had become high enough to escape all but the very high tides of autumn. Then the Terns are replaced by vast flocks of waders.

It is a spectacular sight. Often when the September and October spring-tides begin covering the mudflats and salt-marsh in the Wash it is getting dark. This combination of time and tide causes up to 40,000 Knots and several thousand Bar-tailed Godwits to fly round the coast and to land, en masse, on one shingle spit or another; very often it is the one at Titchwell.

The event is fairly predictable. They usually arrive one hour before high-tide and drop out of the failing light several hundred at a time. At slack water the Knot are packed shoulder to shoulder on the remaining patch of shingle whilst the Godwits stand further out in the shallow water. Then, as the tide recedes, slowly at first then quickly, the Knots become restless and move further down onto the newly exposed sand. Within two hours after high-tide their restlessness reaches a pitch such that the entire flock vacates the shingle spit and returns to the Wash to feed. The Godwits leave half-an-hour later, deserting the few Ringed Plovers and Sanderlings until the following tide.

In 1979, rather than returning to the Wash, up to 8,000 Knots flew down to the foreshore at Titchwell and remained there until the tide began flooding again. The attraction was a two-acre bed of young cockles which had recently become established on the peat floor of the ancient forest.

Nearby, but further down the foreshore, lay another, equally extensive, bed of molluscs: young mussels. Being small enough to be taken by Sea-duck, they attracted a wintering flock of 200 Eiders, 250 Common Scoters and up to 10 Long-tailed Ducks. But once the mussels had grown to three centimetres in length, they were too large to be dealt with, so the rafts of Ducks dispersed as spontaneously as they had gathered.

It was whilst watching Sea-duck that the first Bittern was heard. The sonorous sound carried for nearly a mile and was still heard above the crash of breaking waves.

They nested for the first time in 1980 and successfully reared young but it was clear that, at that time, the reserve couldn't provide sufficient food for their needs. Ditches and pools up to a mile to the east and two miles to the west were used as feeding sites so visitors to the reserve in June and July of that year were unlucky if they didn't see a Bittern flying to or from the reed-bed. Bitterns bred again in 1981 and

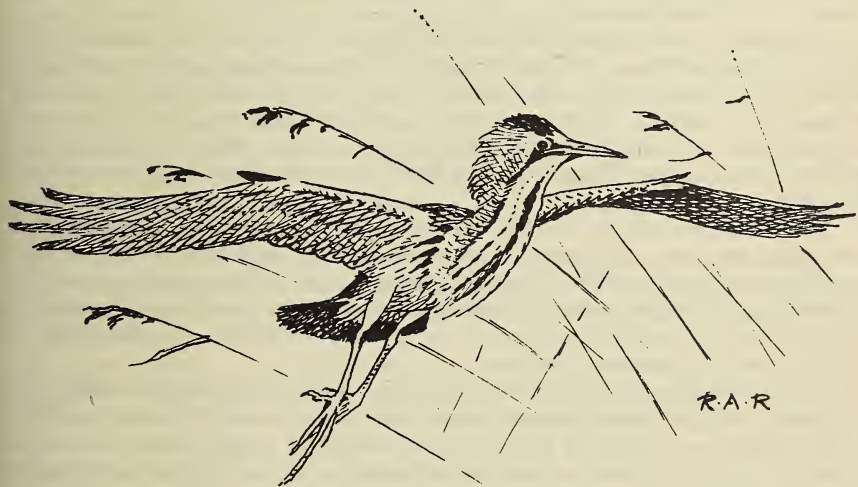
1982, by which time there appeared to be an adequate supply of eels and sticklebacks beneath the swaying reeds.

Reeds provide suitable conditions for Bearded Tits as well; and wintering flocks in addition to breeding pairs. Surveys in winter showed how much Bearded Tits depend on the salt-marsh/reed-bed transition zone. Salt-marsh plants extend into the tidal reed-bed for a distance of several metres and, although the birds spend much of their time taking seeds from the reed flower-heads, they very frequently sidle down the reeds — or fly directly onto the salt-marsh itself — to take fallen seeds of glasswort, common seablite and sea purslane. Every winter from 1975 to 1978 between 50 and 80 Bearded Tits wintered on the reserve and nearly all of them congregated on the narrow but important strip where the two major habitats over-lapped.

One of those major habitats — the reed-bed — came of age as soon as the Freshwater Marsh was flooded. It was 1980. Not only Bitterns arrived to breed but also two-and-a-half pairs of Marsh Harriers.

The same number of birds — a bigamous male and a separate pair — returned in 1981 and 1982 and between them reared 23 flying young in the three years.

Attention was focused on the bigamous male and his two females for three summers. Virtually every aspect of their life on and around the reserve was studied but one of the more interesting aspects was their feeding ecology.



The male effectively had two hunting ranges. The first was 30 hectares (75 acres) of reed-bed on the reserve where his 'primary' female was nesting, as well as smaller areas of marsh, further away, where his 'secondary' female was nesting. During the incubation phase the male caught prey from only the marshland hunting range, but as soon as the eggs hatched he deserted the marshes and hunted over his second hunting range: 1,250 hectares (3,000 acres) of arable land to the south. Why? With a marsh full of young Coots, Moorhens, Mallards, Reed Buntings, Reed Warblers and Bearded Tits, why did he fly two or three miles inland to catch prey?

The reason seemed to be that it was roughly ten times more rewarding to catch prey on the farmland than on the marsh. On the marsh it took the male an average of

28 minutes to catch prey; probably because, as the marsh is relatively small, he could hardly avoid flying over the same part of the reed-bed every quarter-of-an-hour or so. Potential prey may therefore have become conditioned to the Harrier's presence and become more difficult to catch. Also the majority of reed-bed prey would have been fairly small: fledgling Passerines and Moorhen chicks. The average weight of this type of prey is no more than about 20 grams so, in other words, the male Marsh Harrier was catching about $\frac{3}{4}$ gram of prey for every minute he spent hunting.

Compare this with the farmland hunting range. Here it took an average of 17 minutes to catch prey and with the estimated average weight of prey being in the order of 120 grams, he was catching seven grams of prey per minute of hunting: ten times more than on the marsh.

Broadly speaking, three features characterised the specific areas within the farmland hunting range where the male hunted: a higher than average length of hedgerow per unit area; the presence of low crops — sugar beet, young sprouts, carrots, short-stemmed barley, peas and hay-meadow; and croplless areas such as farm tracks, green-lanes and the edges of old pits. The centres of large, open fields of standard height cereal crops were hunted over up to a point, but only en route to more profitable areas.

Juvenile Starlings on the hedgerows; three-week old wild-bred Pheasants around the field edges; young Skylarks from the hay-meadows; month-old rabbits from the farm tracks: all are prey for the Marsh Harrier together with 21 other recorded species of bird and mammal.

The male does not necessarily share his prey equally between his two females. In 1982 the primary female received two-thirds of the catch and as this satisfied her needs — and those of her three young — she didn't have to hunt. Conversely, because the secondary female received only one-third of the prey (50% of her needs) she was obliged to hunt for herself. Being a larger bird than the male, she could carry heavier prey so young rabbits and juvenile Moor-hens formed a high proportion of her catch.

The principal role of the primary female — that of protection — ceases when the young are competent at flying so it is not unusual for her to leave the area for good in early July, forcing the male to provision the young for the next month or so. Then, as both sets of young gradually disperse southwards, the male and his remaining female move southwards too, leaving the rabbits and Skylarks in peace under the ever-lengthening shadows of autumn.

From a predator at the top of the food-chain to prey at the bottom: wader food. Originally, very few waders of only one to two species fed on what is now called the Brackish Marsh. In 1973 the area was tidal saltmarsh: a dense cover of sea aster, saltmarsh grass, cord grass, glasswort and seablite, with a few muddy creeks and saltpans. The plan was to convert the marsh into an area of shallow, brackish water and mud with little vegetation.

So what the sea gave, the sea took away. Permanent flooding with sea-water from 1979 to 1981 produced a habitat which certainly had the appearance of a good wader marsh.

However, what food there was, was not in the right place. Although most waders will eat ragworms (*Nereis diversicolor*) only a few are prepared to search the bottoms of steep-sided creeks to find them; most waders prefer flat, open areas of mud on which to feed. Fortunately ragworms can tolerate sea-water so whilst the marsh was under flood they spread in all directions: 3,000 per square metre (three centimetres deep) in the lowest areas and 700 per square metre in the highest. Ragworms of all sizes.

But that was all — only ragworms. Other invertebrates were needed for other species of waders. By July 1981 the vegetation had diminished enough, so it was decided to complete the plan by converting the marsh to truly brackish conditions. Freshwater was introduced from the Freshwater Marsh and within a week the water was only 13 parts per thousand (PPT) salt content compared with 35 PPT of sea-water. Nothing happened immediately but in July 1982 another invertebrate began to colonise the Brackish Marsh: a one centimetre long crustacean which burrows in the mud or swims just above the mud surface. *Corophium volutator* — there isn't a common name — had arrived. By the end of the year there were between 1,000 and 2,000 per square metre.

During late summer and autumn 1982 the salinity was allowed to fall even further, to 8 PPT. This was just about low enough for another mud-dwelling animal. The caterpillars, or larvae, of midges — *Chironomidae* — are more frequent in completely freshwater habitats, but a few — only 40 per square metre — were found in the Brackish Marsh in September. By Christmas there were five times as many.

If the salinity was allowed to fall to zero, they would increase to 3,000 or 4,000 per square metre but the other invertebrates, the ragworms and *Corophium*, would not survive.

So by finding the optimum salinity level, a reasonable number of each animal can be sustained: ragworms for the Redshanks, Greenshanks, Curlew-sandpipers, Grey Plovers and Bar-tailed Godwits; *Corophium* for Spotted Redshanks and Avocets; and midge larvae for Dunlins, Little Stints and Ringed Plovers.

There is food in the water too. When the marsh was flooded with sea-water a certain prawn — *Palaemonetes varians* — existed in large numbers. They were food for Little Grebes, Mergansers and Goldeneyes. As the salinity fell nearer to fresh-water levels the prawns were replaced by smaller, opossum shrimps — *Neomysis integer* — which swam in the warm, shallow water by the thousand. When, in autumn 1982, seven Avocets, four Spoonbills and several Spotted Redshanks chased about in the shallow pools, scything quickly through the water, opossum shrimps were almost certainly the target.

By retaining a salinity which several types of animal can tolerate, the chances are that all the spatial niches will be filled: ragworms relatively deep in the mud. *Corophium* on the mud surface, shrimps in the water and when they emerge, midges on the water surface.

Whether Bitterns or Marsh Harriers, or Avocets, or Spoonbills, or Cetti's Warblers, or Little Gulls choose to visit the reserve in future remains to be seen. In any event, providing there are cockles on the foreshore, plants on the saltmarsh, rabbits on the farm tracks, ragworms in the mud . . . or even beetles in the peat . . . the next ten years will be as absorbing as the past decade.



Breeding Waders of Wet Meadows in Norfolk

R.C. Murfitt & D.J. Weaver, R.S.P.B.

During spring and summer 1982 a national survey of the Breeding Waders of Wet Meadows in England and Wales was jointly organised by the B.T.O. and R.S.P.B. The main aims of the survey were to identify the remaining lowland sites for breeding waders and to assess their current breeding populations. This information is of vital importance to conservation bodies in order that they may defend important areas of wet lowland grassland from the increasing threat of drainage. The majority of the fieldwork for this survey was carried out by volunteers, but because of the large area of suitable habitat in Norfolk (particularly Broadland) the R.S.P.B. (sponsored by the Manpower Services Commission) employed two temporary research biologists (the authors) to carry out some of the fieldwork and to collate and analyse the results from the whole county. In total about 226 square kilometres of Norfolk marshes and river valleys were surveyed, representing a significant proportion of such habitat in England and Wales. This report describes the results of the survey for the county of Norfolk.

Prior to the survey, discussions were held between representatives of the B.T.O., R.S.P.B., Nature Conservancy Council, County Bird Recorder and other prominent local ornithologists and conservationists to select areas of marshland and river valley for survey and to divide them into manageable sites. A total of 186 sites were identified, varying considerably in size from a few hectares up to more than 1,000 hectares.

These sites received three visits wherever possible, one in each of the months of April, May and June. The five key wader species for assessment were Lapwing, Snipe, Curlew, Redshank and Oystercatcher. Participants were asked to record the total number of each of the key wader species present and to estimate the number of pairs or, for Snipe, count 'drumming' birds on each visit, and then after the visits were complete, to estimate the number of territories for each species. As well as assessing breeding wader populations, participants were asked to provide estimates of breeding wild-fowl numbers (based on counts of males) and of other typical wet grassland species such as Yellow Wagtail, Sedge Warbler and Meadow Pipit.

Table 1 shows the number of breeding pairs of each key wader species found in every major river valley in Norfolk. The Yare Basin forming about 46% of the total area surveyed, comprises the flood-plain of the three main Broadland rivers. The upper boundaries of this area have been taken as Staithe (R. Waveney), Rockland (R. Yare) and the confluence of the rivers Ant and Bure near Ranworth.

Only Norfolk data is presented here and it should be borne in mind that two rivers, the Waveney and the Little Ouse, form the Norfolk/Suffolk border for much of their length. Similarly, most of the Ouse Washes lies within Cambridgeshire, and only the area north of the Welney road has been included.

The North Norfolk coastal marshes include those between Heacham and Salthouse and exclude birds nesting on saltmarsh or foreshore, such as at Blakeney Point.

Most parts of the county were well covered, although there were a few exceptions. These include the rivers Stiffkey and Glaven (no coverage), Tiffey and Thet (about 50% coverage), Nar (about 65% coverage), and parts of the upper Yare.

Lapwing: The Norfolk total of 1,217 pairs represent 17% of the total of 7,317 pairs recorded in England and Wales during the survey in 1982. It should be noted that both the Norfolk and the total England and Wales populations of breeding Lapwings would have been considerably in excess of the figures given, since the survey was largely limited to damp grassland habitat and therefore excluded many lapwings breeding on farmland and other habitats outside river valleys and marshes.

Breeding Lapwings were widespread throughout the county and were generally associated with damp grassland grazed by livestock. However, a considerable number also attempted to breed on arable farmland within the river valleys, particularly in the Yare Basin. Some of these birds were displaying over short winter cereal crops in early spring, but most were probably unsuccessful as they were displaced following subsequent rapid crop growth. Overall, arable nesting Lapwings showed a marked preference for bare arable fields and, to a lesser extent, sugar-beet fields where crops remained short exposing areas of bare soil for much of the breeding season. This agrees with the conclusions of Klomp (1954), who found that a low vegetation or bare ground was a major factor involved in habitat selection for Lapwing.

The Ouse Washes held the largest single concentration of Lapwings, but the North Coast marshes, Thurne marshes, Wensum and Yare valleys, and the Yare Basin supported high densities in some places.

Snipe: The Norfolk population of 500 drumming Snipe represents 23% of the total of 2,157 recorded in England and Wales during the survey in 1982, and the county is therefore of considerable national importance for this species.

With the exception of the Fenland Washes, this species is largely associated, in lowland areas, with poorly-drained meadows, often on a peaty substrate and with a low tussocky vegetation usually of rushes or sedges. Small areas of such 'unimproved' wet meadows still exist in the county but they are largely restricted to the river valleys, particularly in West Norfolk, and the peaty margins of the mainly alluvial Yare Basin. A total of 282 drummers (58% of the county total) were found in this habitat and in areas of fen habitat, such as at Redgrave and Strumpshaw. These Snipe were widely distributed throughout the county, but with the main concentrations in the valleys of the Nar, Wissey and Wensum. In the Nar valley, most of the Snipe were breeding at high density alongside the stretch of river between West Acre and West Lexham (22 drummers). The main concentrations along the river Wissey were at Hilgay Fen (10 drummers) and Thompson Common (8 drummers). The upper and middle courses of the river Yare were also well represented, with 12 drummers at Strumpshaw Fen and 6 at Postwick Marsh.

By far the greatest single concentration of Snipe was on the Ouse Washes, with 173 drummers in the Norfolk section representing 35% of the county total. The density here is one of the highest in the country, but numbers and breeding success fluctuate considerably depending upon the amount of flooding.

Another important breeding habitat is the stubble produced by the cutting of reedbeds, especially in Broadland, an example being those at Hickling Broad NNR. Forty-five drummers (7% of the county total) were found on these sites where they often reached high densities. However, no Snipe were found breeding on the cut reed beds along the rivers of the Yare Basin, which appeared to offer a similar habitat.

This survey provided a fairly thorough census of breeding Snipe throughout the county. However, because of its rather secretive and crepuscular behaviour, and the fact that a few stretches of river valley and wet grassland were not covered during the survey, some pairs will have been missed, but it is estimated that the total obtained represents approximately 90% of the actual Norfolk population in 1982. One further consideration to bear in mind is that the breeding population in 1982 was probably somewhat below average as a result of the exceptionally dry spring weather.

Redshank: The Norfolk total of 388 pairs represents 16% of the grand total of 2,456 pairs of inland (non-saltmarsh) breeding Redshank recorded during the 1982 survey. It should be remembered that these figures do not represent the total breeding populations of Norfolk, and England and Wales respectively, since many pairs breeding on saltmarsh and gravel pits will not have been censused as these habitats did not fall within the scope of this survey.

On the grazing marshes Redshank territories were often loosely concentrated along ditches or near pools with sufficient surrounding vegetation for nesting and cover, and shallow edges for feeding. Although birds were occasionally seen on temporary flooding and ditches in arable fields in April, none appear to have nested within the arable.

In the Yare Basin a significant additional habitat was provided by the ronds adjacent to the tidal reaches of the main Broadland rivers. On these ronds areas of cut reedbed and of saltmarsh type vegetation dominated by scurvy grasses (*Cochlearia spp*) were highly attractive to breeding Redshank. As well as providing nesting sites for some pairs, the ronds also provided good feeding areas and most Redshank nesting on adjacent grazing marshes appeared to move their young onto these stretches of ronds soon after hatching. As a result, Redshank were recorded at their highest densities in the Yare Basin, on sites with such areas of open ronds.

The majority of Redshank bred on marshes fairly close to the coast and, with the exception of the high concentration on the Ouse Washes, only a few scattered pairs occurred well inland, e.g. on the Little Ouse. Broadland as a whole held 64% of the county population with large numbers along the lower Bure, Waveney and Yare marshes. The Thurne marshes were also well represented. The density of breeding Redshank on the Norfolk coastal marshes was second only to that on the Ouse Washes.

Oystercatcher: The Norfolk population of 165 pairs represent 23% of the total population of 712 pairs recorded during the 1982 Breeding Wader Survey in England and Wales.

The Oystercatcher is essentially a coastal bird, nesting mainly on shingle beaches and saltmarsh. The main stronghold of this species in Norfolk is along the North Coast, particularly at Blakeney Point and Scolt Head Island. A tendency towards inland breeding of Oystercatchers has been noted since 1940 when the marshes around Breydon Water were colonised (Seago, 1977). This population has steadily increased and other Broadland marshes have been occupied since then so that by 1979, 68 pairs were recorded within the Yare Basin (Round, 1979). The 1982 survey showed that there has been a further increase and expansion of the inland population, with a 58% increase since 1979 over an area of 85.7 km² of the Yare Basin. The total of 165 pairs recorded during the wader survey of Norfolk represents 33% of the approximate total Norfolk population of 500 pairs.

Oystercatcher pairs were found breeding both on arable fields and grassland, usually close to the main rivers. The preference seemed to be for bare soil areas such

as among sugar-beet crops, or dry spoil banks along ditches or the river-wall itself.

The largely coastal distribution of Norfolk Oystercatchers is evident from Table 1, with only a few pairs occurring well inland, e.g. on the river Wensum. Not unexpectedly, therefore, the highest densities were on the North Coast marshes, while the major part of the inland breeding population (65%) was present in the Yare Basin.

Curlew: The Norfolk population of 4 pairs represents 0.75% of the total of 534 pairs recorded in the whole of England and Wales during the Breeding Wader Survey.

Although at one time restricted to uplands, Curlew have shown a tendency to colonise a wide range of lowland habitats, including damp meadows, for many years (Sharrock, 1976). The range in Britain has a westerly bias so it is not surprising that few pairs were found in East Anglia. However, pairs have nested sporadically on some West Norfolk heaths for many years, and a small population has been established in Breckland since 1949 (Seago, 1977).

The 4 pairs found were within these areas at established sites, i.e. Roydon Common and Stanford Battle Area. Although the boundaries of the river valleys are difficult to define in these areas, a further 3-4 pairs were considered to be outside the sites on surrounding heathland.

Black-tailed Godwit: The main British stronghold of breeding Black-tailed Godwits is the Ouse Washes. Here, the number of pairs attempting to breed and their success is strongly influenced by the extent of flooding.

In 1982, early spring conditions on the Ouse Washes were favourable and there were 20 pairs on the Norfolk section in mid-May, at least 15 of which probably had young.

Away from the Ouse Washes, the only other Norfolk records received were of single pairs displaying at two other sites.

Wildfowl: Estimates are given for the breeding populations of all ducks recorded except for Shelduck which is a mainly coastal breeder. These are based mostly on counts of males during the breeding season, since females tend to be inconspicuous when incubating. The figures given are likely to be under-estimates of the true population, since counts of wildfowl were not made at a number of sites totalling 36 km² (16%) of the total area of 226 km² surveyed. Furthermore, the considerable numbers of wildfowl breeding on gravel pits, lakes etc. outside the river valleys were not censused.

Gadwall: 64 pairs recorded, with main concentrations in Breckland along the Little Ouse (15 pairs) and Wissey (12 pairs), and on the Ouse Washes (9 pairs) and the Thurne marshes (8 pairs). No coverage of the substantial Breckland mere populations.

Teal: 37 pairs estimated, but no broods recorded. Quite widespread in small numbers, but with a large concentration of 12 pairs at Hickling Broad.

Mallard: A total of 1,366 pairs estimated. Ubiquitous, found on every river system surveyed. Very high density on the Ouse Washes, where 324 pairs were estimated to have bred in the Norfolk section.

Shoveler: 138 pairs recorded. This minimum figure represents a considerable proportion (nearly 14%) of the estimated British and Irish population of 1,000 pairs (Shar-

rock, 1976). The main concentrations were on the Ouse Washes (40 pairs), Yare Basin (34 pairs), Thurne marshes (24 pairs), Bure (13 pairs) and the North Norfolk coastal marshes (11 pairs).

The true Norfolk population was probably nearer 160 pairs, allowing for about 15 pairs on the 30.4 km² of the Yare Basin for which details of wildfowl were not submitted (based on average density of Shoveler over rest of Yare Basin), and an additional 8 pairs for parts of the North Norfolk coastal marshes where wildfowl were not censused.

Pochard: A total of 21 pairs were recorded. Most were in the Yare Basin, with 5 pairs on Haddiscoe Island and 3 pairs at Burgh Common.

Tufted Duck: 162 pairs estimated. Main concentrations were in the Wensum valley (81 pairs) and on the Ouse Washes (20 pairs). Considerable numbers were doubtless missed on gravel pits etc. outside the survey areas.

Other Wildfowl: Six pairs of Garganey may have nested in the county, though breeding was only proved at Cley. Also, seven pairs of Wigeon were suspected of breeding, 4 on the Ouse Washes and 3 in the Wensum valley. Breeding was proven in the latter area when a brood of ducklings was seen, but the small population in this area is known to have originated from escapes from a wildfowl population.

Reference to Table 1 reveals that once again the Ouse Washes was by far the most important single site, supporting the highest diversity of wildfowl species and a very high total density. The river Wensum features quite highly because of the abundance of gravel pits along this valley, which support large numbers of breeding wildfowl, particularly Mallard and Tufted Duck. Other good areas for wildfowl were along the rivers Bure, Thurne and Wissey, and the Yare Basin (for Shoveler).

The results of the national Breeding Wader Survey have demonstrated that Norfolk is the outstanding county in England and Wales for breeding waders. It is one of only three counties to hold more than 100 pairs of Snipe, the others being Cambridgeshire (732 pairs) and Yorkshire (153 pairs), and it has the second highest population of wet grassland breeding Redshank (388 pairs) after Kent (475 pairs). Norfolk also supports substantial proportions of the wet grassland breeding populations of Lapwings and Oystercatchers in England and Wales, 17% and 23% respectively. Furthermore, the county is also important for its breeding wildfowl populations particularly Gadwall, Garganey and Shoveler.

The county of Norfolk is indeed fortunate in having such a rich variety of wet meadowland habitats that includes the Ouse Washes, the North Norfolk coastal marshes, the Yare Basin, the Broadland rivers and marshes, and the river valleys of West Norfolk. However, wet grassland is increasingly under threat from drainage schemes designed to lower the water table and to enable intensification of agriculture either in the form of improved pasture or the complete conversion to arable. These changes result in the loss of the characteristic flora of this habitat and a reduction or complete loss of the breeding and wintering bird communities of the site. Such agricultural improvements are already well advanced on some of the marshes in the Yare Basin. If such changes are allowed to continue unchecked, the time could come in the not too distant future when wader species most sensitive to drainage, such as Snipe, are very few and far between in lowland Britain outside of nature reserves such as Ouse Washes.

We would like to acknowledge the important roles fulfilled by Alec Bull and Dr. Moss Taylor, the B.T.O. local representatives for Norfolk, in organising site

coverage. We also thank John O'Sullivan, R.S.P.B. Regional Officer for East Anglia, and Dr. Ken Smith, B.T.O. National Organiser of the Breeding Wader Survey, for their help and supervision during the survey. Acknowledgement is due to the following people who were involved in preliminary discussions to identify survey sites: D. Brewster, A. Bull, P. R. Clarke, J. Goldsmith, R. Hobbs, Nar Valley Ornithological Society, J. O'Sullivan, G. Radley, M. J. Seago and Dr. M Taylor.

This survey depended to a large extent on the work of volunteer observers, and we are particularly indebted to the following who carried out survey work in 1982: S. Abbot, P. R. Allard, R. W. Andrews, P. R. Banham, P. Banwell, S. R. Beal, R. A. Benson, B. Bishop, B. Bland, A. Bowles, D. Brewster, M. A. Brewster, A. Bull, M. Bunn, Dr. C. J. Cadbury, P. R. Clarke, C. J. Clayton, R. Conner, E. F. Crosby, J. Eaton, F. T. Gates, K. Gilbert, E. M. Griffin, A. J. Hale, A. F. Harris, Dr. M. Hassall, K. Heron, P. Higgins, R. Hoblyn, Dr. D. T. Horsley, D. Hughes, B. M. Joslin, R. T. Joslin, R. E. Kimber, E. O. B. King, M. A. Knight, R. Lawrence, M. Laxen, S. E. Linsell, O. R. Marks, P. McAnulty, Mr. and Mrs. J. S. Mighell, D. G. Neale, J. Newton, J. O'Sullivan, D. L. Ovenden, R. Parfitt, F. Pigg, B. Pleasance, D. B. Radley, G. P. Radley, M. Rains, H. Ramsay, R. J. Rolph, R.S.P.B. staff at Strumpshaw Fen, L. Rutherford, K. G. Saul, G. Schofield, H. Scott, M. J. Seago, N. Sills, I. J. Simper, Dr. M. Taylor, W. Urwin, A. E. Vine, A. Ward and I. White.

Finally we would like to thank the many landowners who allowed access to their land, and without whose co-operation this survey would not have been possible.

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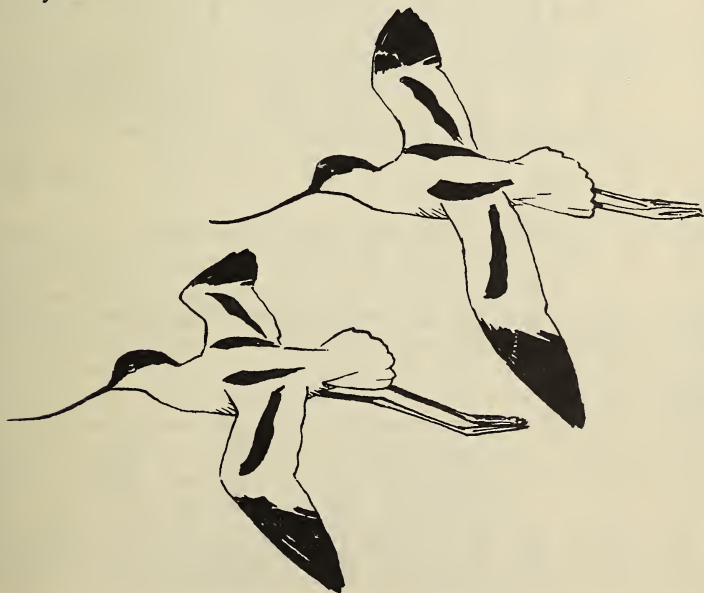


Table 1: Number of Pairs and Density of Breeding Waders and Wildfowl in Main Wetland Areas and River Valleys in Norfolk — 1982.

Note: Wader densities based on areas given, i.e. open habitats (total 226.0 km²); wildfowl densities on total area surveyed (including carr, gravel pits etc) — 236.0 km².

RIVER	Area	% Grass	Lapwing	Snipe	Curlew/Black Tailed Godwit	Redshank	Oystercatcher	Waders	Wildfowl
	Total km ²		No of pairs (density prs/km ²)						No. of species (density)
YARE BASIN	104.3	62	510 (4.9)	29 (0.3)	0	189 (1.8)	106 (1.0)	834 (8.0)	7 389 (3.7)
MIDDLE/UPPER WAVENEY	16.2	79	66 (4.1)	27 (1.7)	0	3 (0.2)	2 (0.1)	98 (6.0)	4 68 (4.0)
MIDDLE/UPPER YARE	6.2	69	39 (6.3)	31 (5.0)	0	8 (1.3)	0	78 (12.7)	3 37 (5.7)
WENSUM	16.4	82	120 (7.3)	50 (3.0)	0	0	10 (0.6)	180 (11.0)	6 240 (12.8)
TUD	2.1	43	0	5 (2.4)	0	0	0	5 (2.4)	2 17 (7.4)
TAS	4.1	90	1 (0.2)	1 (0.2)	0	0	0	2 (0.5)	1 7 (1.2)
TIFFEY	1.2	80	6 (5.0)	3 (2.3)	0	0	0	9 (7.5)	2 23 (17.7)
MIDDLE/UPPER BURE	12.2	79	21 (1.7)	29 (2.4)	0	3 (0.2)	0	53 (4.4)	7 133 (10.4)
THURNE	13.8	69	108 (7.8)	30 (2.2)	0	42 (3.0)	12 (0.9)	192 (13.9)	6 142 (10.2)
ANT	6.4	42	38 (5.9)	12 (1.7)	0	5 (0.8)	4 (0.6)	59 (9.2)	4 48 (6.8)
OUSE WASHES	4.8	87	87 (18.1)	173 (36.0)	G.20 (4.2)	87 (18.1)	6 (1.3)	373 (77.7)	8 405 (82.7)
LITTLE OUSE	4.4	77	22 (5.0)	6 (1.4)	0	3 (0.7)	0	31 (7.0)	5 52 (11.4)
THET	0.9	56	13 (14.4)	12 (13.3)	0	0	0	25 (27.8)	2 16 (17.8)
WISSEY	17.4	73	56 (3.2)	43 (2.5)	C. 2 (0.1)	6 (0.4)	0	107 (6.1)	6 124 (6.5)
NAR	4.0	88	23 (5.8)	31 (7.8)	0	2 (0.5)	1 (0.3)	57 (14.3)	3 27 (5.7)
GAYWOOD	3.4	45	7 (2.1)	3 (0.9)	C. 2 (0.6)	0	0	12 (3.5)	2 6 (1.7)
BABINGLEY	1.05	N/A	3 (2.9)	4 (3.8)	0	0	2 (1.9)	9 (8.6)	1 1 (1.0)
NORTH COAST	8.2	75	97 (11.8)	11 (1.3)		40 (4.9)	22 (2.7)	170 (20.7)	61 (7.1)
TOTALS	226.0		1217	500	4 20	388	165	2294	1796

Wickhampton Heronry

No bird has been more typical of the flat Norfolk marshlands than the grey heron. Over the years, the wet muddy flats of Breydon and the associated grazing marshes flanking the lower stretches of the Bure and the Yare have offered almost ideal conditions and the area has supported one of the most numerous populations in the country.

Heron usually nest in colonies in tall trees. In the vicinity of Breydon they have used the wet woodlands or 'carrs' which are dotted around the fringe of the marshland. Wigg's Carr at Wickhampton has played the major role with Decoy Carr at Mautby also holding a sizeable population. Heronries often have long histories. It is said that Wigg's Carr was first occupied many years ago by birds which had been displaced by rooks from the nearby carr adjacent to Reedham Church. Sir Thomas Browne, writing in the seventeenth century, mentions that the latter site harboured herons.

Each year, in February and early March, birds using Wigg's Carr have congregated on the marshland in the late afternoon a few hundred yards to the East of the heronry. Here it has been possible to see them running and skipping on the ground, often with raised wings, such cavorting sometimes being described as dancing. Then, towards sunset, individual birds have taken off and flighted into the carr. Each cock has taken up a position, usually on an old nest, and started to posture and call. The illustration shows a bird pointing its bill to the sky, following which, with the pose maintained, the body is lowered to a crouching position, the movement being accompanied by a sustained groan, *oooo*, reminiscent of the boom of a bittern. This is just one element in a complex display. In due course a mate is attracted, the nest is furnished and eggs laid, generally around the third week in March. Incubation lasts almost a month and the chicks are in the nest for about eight weeks so that a heronry is full of activity until mid-summer.

In the late nineteen forties Wigg's Carr usually contained thirty to forty occupied nests. Organised counts of all the various Norfolk heronries started in the fifties and the annual *Norfolk Bird Report*, first published in 1953, contains the results. The figures for Wickhampton are summarised below:

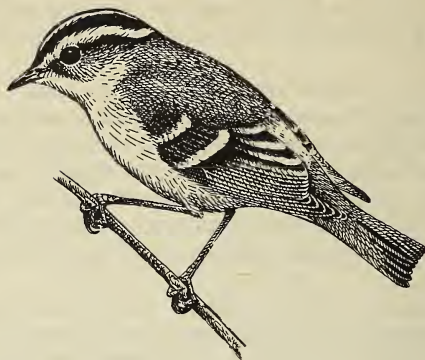
Year	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Number of nests	25	37	28	21	34	31	31	31	39	35
Year	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Number of nests	23	28	38	34	38	45	46	39	37	20

Unfortunately systematic counting lapsed in the seventies. However, a chance visit to Wickhampton at the end of March, 1982, revealed an unbelievable situation. Instead of a noisy and lively community, there was absolute silence and not a bird to be seen. There were no nests. Nor was there any evidence of the foundations of nests left from the previous year. Had the herons returned to Reedham? No, there were no herons in the Rookery Carr nor in any of the neighbouring carrs. A journey to Mautby revealed a similarly depressing state of affairs, the keeper reporting no more than two nests in one of the more remote parts of the wood.

Thus it would seem that, in a very few years, the well established breeding community, which has been a feature for centuries, has gone. It may be that the occasional bird will be seen on the marshes and a few may still nest in one or more of the

smaller colonies further upstream but this unique part of Broadland, which has already lost its massive flocks of wintering grey geese and many of its breeding waders, would now appear to be almost bereft of one of its most characteristic and numerous species.

R. Jones



Vagrants from the East

1982 was an extraordinary year for the arrival of Siberian vagrants in the autumn, but how did it compare with previous years such as 1968 and 1975 both well remembered by many 'older' birdwatchers? Why do some years produce more kinds of eastern origin than others? Does it always depend on weather conditions or are there other factors involved?

Yellow-browed Warblers which have been described as one of the commonest birds in Siberia, were regarded as rarities in Norfolk in the past. Only 8 had been recorded up to 1918 and there were no further records until one was seen on Blakeney Point in 1962. The next year produced two individuals with singles in 1964, 1965 and 1966. Pallas's Warblers were at one stage considered 'once in a lifetime' birds; the first British record was one shot at Cley in 1896 and singles subsequently caught and ringed at Holme in 1957 and 1963. Pallas's Warbler breeds from the Altai Mountains eastwards; in fact unless it has expanded westwards, the nearest part of its breeding range is further east than that of any other leaf warbler on the British List. The first county record of Radde's Warbler was one caught and ringed on Blakeney Point in 1961, only the second British record. In contrast Richard's Pipits, also originating from Asia, had appeared more frequently with a total of 31 birds up to 1966.

The autumn of 1967 was undoubtedly the first to produce large numbers of eastern birds with at least 40 Richard's Pipits and 9 Yellow-browed Warblers, 4 of which remained at Wells/Holkham for several weeks.

1968 was a year to be remembered, not only for the total of at least 53 Richard's Pipits and 11 Yellow-browed Warblers (including two on light-vessels) but also for the spectacular invasion of Nutcrackers of the slender-billed race which breed from north-east Russia across Siberia. Previously there were only 8 records in the county but at least 104 appeared in 1968 in three distinct phases. Their arrival apparently was a result of food shortages following a failure of pine cones and hazel nuts in their native forests, but one must suspect that very few managed to return to their breeding grounds. Following the arrival of a Pallas's Warbler on October 20th a Radde's Warbler was discovered at Wells the same day. Six days later a Dusky Warbler (the first county record) was found at Holkham and was joined by a second



Black-tailed Godwits returned to the Fens breeding at Welney in 1952. The population has since spread to the complete length of the Washes with a 1972 peak of 65 pairs. (Photo: Dr. K. Carlson).



Despite nesting regularly in Suffolk since 1947, it was not until thirty years later that Avocets began breeding again in

individual Nov 2nd. During this period there was a prolonged spell of easterly winds originating well inside Russia. Amazingly a third individual was trapped at Holme Nov 9th, with a different bird present on 10th. A fascinating aspect of the Dusky Warbler's annual journey to and from its forest breeding grounds is that it passes over the eastern end of the Himalayas at altitudes approaching 20,000 feet. The year ended with two separate dead Little Bustards of the Eastern form *orientalis* being found in December, a bird last recorded in 1916 and not recorded since!

In the autumn of 1969-1974 Yellow-browed Warblers appeared annually with a maximum of 8 in 1973. Richard's Pipits peaked at 42 in 1970, but with only 3-4 in 1973 and 1974. Pallas's Warblers appeared in 1971 (Norwich Oct 30th), 1972 (Holme Oct 17th-19th) and 1974 (Happisburgh Oct 14th-16th) and Wells Oct 24th/25th. The only other Siberian rarity in this period was a Dusky Warbler at Holkham Oct 7th 1973.

On October 9th 1975 the wind veered from north-westerly to north-easterly as an anti cyclone became established over the Baltic. This weather system remained for most of the month and the associated easterly airstream across the whole of Central Europe resulted in the arrival of an incredible number of eastern vagrants, many arriving in association with large 'falls' of Goldcrests. Single Yellow-browed Warblers appeared at Yarmouth and Wells on the 10th, with an Olive-backed Pipit (the first county record) at the latter locality. A Pallas's Warbler was discovered at Holkham the next day and by the 12th at least 15 Yellow-browed Warblers were at Wells/Holkham together with an Isabelline Shrike (subsequently determined as a separate species from Red-backed Shrike and again a new county record). On 14th a Dusky Warbler was found near Wells boating lake and the next day two Pallas's Warblers were together at Holkham. On 17th further Pallas's Warblers were seen on Scolt Head and Happisburgh (trapped) and a Radde's Warbler at Brancaster. A second Radde's Warbler was seen at Holkham the next day, together with Dusky Warbler on Blakeney Point (the only warbler present). The Point also produced a Rustic Bunting, but whether this bird had travelled from east of the Urals one cannot tell; another was seen at Cley on 22nd. A Yellow-browed Bunting from the extreme east identified at Wells on 19th was subsequently rejected by the B.O.U. but it is shortly to be reconsidered in view of the recently published details of one on Fair Isle in 1980. A Black-throated Thrush found at Holkham on the 21st (another new county record) stayed 4 days. On 25th the third Radde's Warbler of the autumn was also seen at Holkham. The next day a distinctive eastern race of the Redstart was identified at Heacham.

The autumns of 1976-1981 produced annual records of both Richard's Pipits and Yellow-browed Warblers in varying numbers with at least 30 Richard's in 1977 and 7-9 Yellow-browed in 3 years. In 1976 a Black-throated Thrush, which had probably arrived the previous autumn, remained at Coltishall from Feb 21st until April 3rd. An early Radde's Warbler was seen at Waxham on Sept 26th and a Dusky Warbler at Wells on Oct 16th. The end of October saw the simultaneous arrival with north-easterly winds of 3 Pallas's Warblers, 2 Tawny Pipits of one of the eastern races together with an Olive-backed Pipit at Holkham. In contrast the only eastern rarity of 1977 was a Siberian Thrush (a new county record) found at Yarmouth on Christmas Day. In 1978 light winds with a fog-bank over the North Sea saw the arrival over the period Oct 13th-15th of a Desert Wheatear on Blakeney Point, a Radde's Warbler at Holkham and 2 Short-toed Larks. The only Siberian rarity of 1979 was a Pallas's Grasshopper Warbler at Cley on Sept 13th (another new species for the county). 1980 saw the arrival of 2 Pallas's Warblers at Waxham at the end of October (associated with an influx of Firecrests), followed by an arrival of 4 Yellow-

browed Warblers on the late date of Nov 9th. The eastern rarity of the year and another county addition was a Citrine Wagtail at Welney Nov 16th/17th. 1981 produced a total of 8 Pallas's Warblers (more than Yellow-browed Warblers for the first time), several arriving on Oct 18th with a Little Bunting at Holkham. An Olive-backed Pipit was subsequently found at Wells Oct 25th with a 'second' arrival of Pallas's Warblers.

The records of the 1982 Siberian vagrants feature in the classified list and whilst 2 Radde's and 2 Dusky Warblers were found and the exceptional number of Pallas's Warblers far exceeded records of Yellow-browed Warbler, the autumn did not produce any other unusual rarities apart from Little Bunting. In September an anticyclone started to build-up over northern Russia and in early October this moved westwards over Scandinavia resulting in easterly winds over the Baltic. This produced one of the biggest 'falls' of migrants along the east coast ever recorded in this country. The first influx of Pallas's Warblers along the north coast arrived with north-easterly winds but the second influx occurred with north-westerly winds, the birds moving around a depression in the southern North Sea, proving that the wind direction over the Baltic or the Low Countries is often more important than the wind direction in Norfolk for the arrival of birds!

Undoubtedly the major growth of birdwatching as a hobby in the past 25 years or so has contributed to more vagrants being found. Also until the 1960's the average east coast birdwatcher having had his annual sightings of Bluethroats and Ortolans in September (how times have changed!) tended to cease looking for small passerine migrants after the beginning of October. Possibly certain species such as Yellow-browed Warblers may be experiencing population explosions and westerly expansions of their breeding ranges.

The growing realisation that large arrivals of winter visitors (thrushes, finches etc) in October can produce the odd eastern rarity and on occasions a virtual invasion, has created a new dimension to Norfolk ornithology. How many birdwatchers before the mid 1960's used to watch coastal woodlands in North Norfolk at this time of year? Today, with the wind in the right direction the woods at Wells/Holkham have become a magnet for observers from all over the country in October and sometimes into November. To many the mystique of arrivals from Siberia is threefold: firstly until recent years they were rare birds which are always an attraction; secondly species such as Yellow-browed and Pallas's Warblers are delightful to watch, not only in plumage detail but also in feeding habits; thirdly the amazing fact that such diminutive birds have managed to travel thousands of miles to the west of their breeding grounds when they should normally be migrating towards or having arrived in their wintering areas in South-east Asia.

Can any conclusions be drawn from a brief analysis of Siberian immigrants since 1967? Richard's Pipits are an irruptive species in any event and the years of peak numbers have not always co-incided with other species of the same origin; frequently they also arrive in westerly winds. The breeding range of Yellow-browed Warbler extends much further north than Pallas's and whereas a high proportion of British east coast observations of the former have been from Scotland, the majority of those of Pallas's Warbler until 1982 have been English. The more southerly breeding birds thus tends to occur further south in Britain. That orientation in the 'wrong' direction should remain stable over a distance of perhaps 5,000 miles is most remarkable. However, in 1982, many Pallas's Warblers were recorded in Scotland including the Northern Isles presumably as a result of south-easterly winds over the northern North Sea. In recent years this species is also tending to occur earlier than hitherto, in contrast to several of its congenors, but at present there does not appear to be any

obvious reason for this trend.

The regular annual arrival of Yellow-browed Warblers which now occurs presumably means that a small percentage of the breeding population migrates westwards instead of towards normal wintering grounds (the classic reverse migration theory). With species such as Pallas's Warblers and more particularly Radde's and Dusky Warblers these breed further to the east and it is suspected that the weather over Northern Europe and Russia in the weeks before October may be the pointer as to whether they are likely to occur or not. In 1982 the weather systems undoubtedly resulted in a major influx of Siberian vagrants into Western Europe. They then arrived in Norfolk with 'falls' of normal winter visitors when favourable wind conditions prevailed. It is possible that despite seemingly ideal weather conditions in Norfolk in some years few eastern vagrants appear because initially they have not been pushed westwards into Western Europe.

The above observations are purely theory and it would be a major tragedy if one discovered all the answers to the mysteries of bird migration and vagrancy. Every autumn is different in Norfolk in the numbers and variety of Siberian birds which appear. Certainly the years 1968, 1975 and 1982 stand out. Is it possible that the 'best' autumns only occur every seven years? I for one am certainly looking forward to October 1989 with particular interest!

G. E. Dunmore

An Irruption of Siskins

The spring and early summer of 1982 were remarkable for the numbers of Siskins recorded throughout NARVOS area. The highest known concentration was at a Forestry Commission fire tank at the edge of coniferous woodland in Swaffham Forest. Siskins were first seen drinking at this site 25th March, but numbers were difficult to estimate with continuous streams of birds arriving and departing. Next day a single flight net was erected alongside the tank and 70 Siskins were trapped and ringed. A further 98 were caught during the weekend 3rd/4th April with a final ringing total of 266 birds. By using a ratio of previously ringed to new birds no less than 1,200 Siskins were estimated using the tank to drink and bathe.

Ringling continued through April with numbers gradually diminishing. By the month end only about 150 were present. Operations were made more interesting on 14th April when two male and a single female Crossbill were caught; the female having a brood patch sufficiently marked to be indicative of breeding. This was confirmed 2nd May when four juvenile Crossbills were trapped and ringed. As April progressed it was noticeable that some female Siskins were developing brood patches. By mid-May it was thought likely the dozen or so remaining pairs were sitting on eggs. On 15th May the first bird netted was a newly fledged Siskin. It had obviously been capable of flight for only a very short time and was readily separated from the adults by its distinct plumage. Later, four more juveniles were ringed and the final estimate was considered to be forty young.

There is no evidence to suggest that any pairs attempted a second brood, nor that they stayed in the immediate vicinity to complete a post-breeding moult. Indeed there were very few records from the site after early June and none at all in July. A single ringing recovery is so far available: one caught at the fire tank 3rd April had been ringed at Mansfield in Nottinghamshire 21st Feb 1982.

A. J. Hale

(Nar Valley Ornithological Society)

An exceptional Brent Goose Movement

An intense anti-cyclone formed over northern Europe from November 4th producing overcast conditions with fresh to strong south-easterly winds over England and the North Sea. This remained stationary until the 7th when wind strengths increased to near gale. Visibility in the North Sea was poor on the 4th/5th improving on 6th/7th and it was generally cool.

As a result of these conditions remarkable numbers of Brents headed south between 5th and 7th together with many species of ducks. On the first day a total of 14,500 Brents passed Gt. Yarmouth in a single hour. Possibly up to 50,000 birds were involved as Lowestoft observers estimated 10,000 heading south there in the previous hour. This passage was on an unprecedented scale and doubtless the majority of the Brents were heading for Essex and south coast wintering grounds; the numbers involved however were very high and may well have included birds intending to winter in western France.

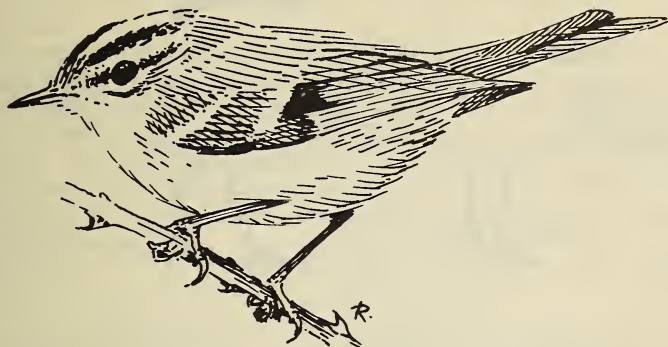
The Brents were on the move from first light, but by mid-afternoon when many hundreds were resting on the sea close inshore numbers had dropped to 450 an hour. A high proportion were birds of the year indicating a highly successful breeding season. Later estimates suggested as high as 60%. Daily details of the movement appear below.

November 5th: Large skeins of Brents were passing the Leman Bank (35 miles north-east of Yarmouth) heading in a SSW direction from 0630 hours. By 0800 large numbers were passing south close to the shore between Mundesley and Yarmouth harbour entrance. Unfortunately, no counts were obtained but at 0945 an estimated mile-long skein was reported heading south. One observer at Yarmouth south beach counted over 1,800 Brents moving south in six minutes. Estimating the size of each skein, his full hour total was 14,500. Fourteen skeins were in excess of 200 birds with four exceeding 500 in number. Most birds passed low and within 600 yards of the shore. Many moved just beyond the breakers. It was not possible to maintain other wildfowl counts, but within a few minutes totals of 50 Mallard, 480 Wigeon, 175 Pintail, 43 Teal, 80 Eider, 115 Common Scoter, 16 Goldeneye, 2 Tufted, 11 Red-breasted Mergansers, 8 Shelduck and a few grey geese were all recorded. An angler was forced to cast over a group of forty exhausted Eiders drifting in the surf. Later, many hundreds of Brents were resting close to the shore between Wellington Pier and the harbour entrance; four were at Beaconsfield Recreation Ground and 120 had assembled at Breydon Water. Little is known from north Norfolk of this movement, but at Holme 1,000 Brents headed west in addition to 3 Red-necked and 9 Slavonian Grebes, 36 Bewick's Swans, 300 Shelduck, 1,600 Wigeon, 500 teal, 350 Mallard, 16 Pintail, 500 Common Scoter, 24 Goldeneye and 10 Red-breasted Mergansers.

November 6th: Despite more observers it was soon realised that Brent movements were to be on a much reduced scale. At Holme 200 passed west but the selection included 2 Red-necked and 6 Slavonian Grebes, 138 Bewick's Swans, 200 Shelduck, 400 Wigeon, 150 Teal, 300 Mallard, 20 Pintail, 34 Pochard, 15 Tufted, 500 Common Scoter, 24 Goldeneye and 10 Red-breasted Mergansers. At Paston 1,223 Brents headed east with a further 378 west. Also there 75 Shelduck, 305 Mallard, 38 Teal, 10 Gadwall, 31 Pintail, 27 Pochard, 156 Common Scoter, 10 Eider and 11 Red-breasted Mergansers all moved east with 25 Shelduck, 135 Wigeon and 123 Common Scoter west. At Waxham 1,744 Brents headed south in four hours with 431 north, 89 rested on winter wheat and 31 headed straight inland. Similar numbers passed Yarmouth and 123 were on Breydon.

November 7th: Increasingly strong SE winds suggested high wildfowl totals, but at Paston only 75 Brents headed west amongst 89 Mallard, 47 Teal, 37 Common Scoter, Velvet Scoter, 11 Tufted, 2 Goldeneye and 5 Long-tailed Ducks. Very few Brents passed Waxham, Horsey or Yarmouth and Norfolk observers failed to spot an almost complete albino detected off the Suffolk coast. It was re-discovered in an assembly of 40,000 Brents at Foulness which became the main assembly centre in East Anglia.

P. R. Allard



Selected Offshore Observations

Red-necked Grebe: Off Scolt Head March 17th, Holme (full summer plumage) May 22nd, Brancaster 2 (full summer plumage) Sept 4th, one on 29th and 2 again Oct 18th; SW Wash Oct 18th and Dec 3rd (JB).

Black-necked Grebe: Breeding plumage bird 10 miles NE of Brancaster harbour Sept 29th diving in 30/35 feet of water (JB).

Bewick's Swan: Three 2 miles off Scolt Head April 15th (JB).

Eider: 80-100 in SW Wash in Jan; 60 there Dec 3rd (JB).

Long-tailed Duck: 27 off Holme Dec 3rd (JB).

Ringed Plover: Amoco 49/18 Bravo platform Aug 2nd 55 miles NE of Yarmouth; several there on 7th (PRA).

Black Tern: Four off Brancaster Sept 10th and 5 there on 20th.

Collared Dove: Amoco 49/18B platform May 22nd 55 miles NE of Yarmouth later died (PRA).

Turtle Dove: Amoco 49/27B platform May 18th 35 miles NE of Yarmouth (PRA).

Short-eared Owl: Amoco 49/23AT platform Oct 25th 55 miles NE of Yarmouth (PRA).

Wryneck: Two, Amoco 49/18B platform Aug 7th 55 miles NE of Yarmouth (PRA).

Meadow Pipit: Amoco 49/27C platform Nov 4th 35 miles NE of Yarmouth (PRA).

Redstart: On boat 18 miles NE of Brancaster May 5th (JB).

Barred Warbler: Immature Amoco 49/23AT platform Sept 10th, 55 miles NE of Yarmouth (PRA).

Willow Warbler: On boat 18 miles NE of Brancaster May 12th (JB).

Jackdaw: Amoco 49/23AC platform Nov 30th 55 miles NE of Yarmouth (PRA).

Hooded Crow: Amoco 49/23AT platform March 15th 55 miles NE of Yarmouth (PRA).

Further Reading: 'North Sea Bird Club Report for 1981' (published Dec 1982).



Ringling Report

Once again, a varied selection of recoveries is presented in the Ringing Report, reflecting the vast amount of time and energy put in by ringers within the County. Four species appear in the report for the first time, Bewick's Swan, involving five individuals wintering at the wildfowl refuge at Welney, and single recoveries of Whimbrel, Greenshank and Mistle Thrush.

Although the number of passerines ringed during the year was less than usual, 1982 will be remembered for the marked spring passage of Siskins (over 300 ringed) and the October 'fall'. This latter event was reflected in the rarities and semi-rarities trapped during the year and include 3 firecrests, 3 Cetti's, 6 Barred, 2 Dusky, Yellow-browed and Pallas's Warblers, as well as the first Little Bunting to be ringed in Norfolk.

Towards the end of 1982, the first ever meeting of passerine ringers operating within the County, was held at Dereham. It was an extremely enjoyable and valuable evening, which it is hoped will be repeated at least once a year. Any ringers not present, who would like to be kept informed of subsequent meetings, should contact me.

As always, this report would not be possible without the submission of recovery details by individual ringers. To them all, I am extremely grateful. Thanks are also due to Dr. Nicholas Branson, for selecting the more interesting Wash Wader Ringing Group recoveries.

Moss Taylor

Cormorant

The majority of Norfolk recoveries are of birds ringed in the Farnes.

Farne Islands 3.7.82

Wells (found sick) December '82

Whooper Swan

Four wearing neck-collars were recorded at Welney in the winter of 1980/1981 and were part of a flock of 46 non-breeding adult Whooper Swans, caught on Lake Myvaten, Iceland on 25.7.80. Two of the birds returned again in the 1981/1982 winter. Further evidence of fidelity to a wintering site is given below.

Welney (adult male) 9.2.81

Welney (dead) 16.2.82

Bewick's Swan

The first recoveries of this species affecting Norfolk and a fascinating collection of movements. The first suggesting a change in wintering areas in subsequent years. The remainder were all the result of colour marks being noted and include the first recovery of a British-ringed Bewick's Swan in Iceland and only the second and third in Finland. The latter two were considered to be a pair. The species breeds exclusively in the uninhabited tundra regions of the USSR and so the recovery in Iceland, at the end of May, is all the more interesting.

Slimbridge, Glos. 10.12.78

Welney (dead) 21.1.82

Welney 9.1.81

Polder Oosterwolde, Gelderland,
Holland 26.2.82

Welney (first winter male) 9.2.81

Hvanna, Nordur Mule, Iceland 31.5.81

Welney (adult female) 2.2.82

Vilkkilantura Virolahti, Kymi, Finland
17.4.82

Welney (adult male) 9.2.81

Vilkkilantura Virolahti, Kymi, Finland
17.4.82

Brent Goose

There has only been one previous foreign-ringed Brent Goose found in Norfolk, from Denmark, as long ago as 1963.

Heligoland, Germany 26.3.78

Blakeney Point (dead) 29.1.82

Canada Goose

Two interesting, atypical movement into Norfolk from the North, possibly part of a developing pattern.

Beaulieu Firth, Highland 2.7.78

Holkham (control) 5.7.81

Studley Park, North York (pullus)

Holkham (control) 5.7.81

9.7.78

Shelduck

Details are given of the first recovery in Norfolk, of a Shelduck ringed in the North of England and a ten year old bird.

Teesmouth, Cleveland 9.1.79

Warham 27.4.82

Wolferton (adult) 22.4.73

King's Lynn 25.1.82

Gadwall

Abberton R. 22.5.78

King's Lynn 23.10.82

Abberton R. 16.1.80

Hoveton 29.1.82

Teal

The majority of foreign-ringed Teal, recovered in Norfolk have been ringed at De Koog.

De Koog, Texel, Holland 24.9.79

Blakeney 9.12.81

Mallard

North Frisian Islands, Denmark

Blakeney 4.12.81

5.12.76

Marsh Harrier

Only the second Danish-ringed Marsh Harrier to be recovered in Britain and the first in Norfolk.

Fangel Mose, Fyn, Denmark (pullus) Martham (dead) 4.9.81
2.7.81

Kestrel

Three interesting, and widespread, recoveries of Kestrels, ringed as nestlings, outside the County. The one from Holland illustrates how early in autumn continental birds may begin arriving in Eastern England.

Oudeschild, Texel, Holland (pullus) Winterton 12.8.80
30.6.80

Ramsey, Cambs. (pullus) 28.6.82 Ludham 18.7.82
Eskdalemuir, Galloway, Scotland Shouldham 7.8.82
(pullus) 20.6.78

Coot

Abberton R. 18.10.80 Banham 4.7.82

Oystercatcher

Included is only the sixth British-ringed Oystercatcher to be recovered in Sweden and an unusual movement in Ireland.

Snettisham 18.7.70 Inishboffin, Galway 9.4.81
Terrington 18.8.78 Lundskaret, Stockholm, Sweden 23.3.81

Stone Curlew

The first Norfolk-ringed Stone Curlew to be recovered in France.

Gooderstone (pullus) 7.6.80 Souraide, Pyrennees-Atlantiques, France
29.10.81

Ringed Plover

Only the third Swedish-ringed Ringed Plover to be recovered in Britain.

Sandudden, Jonkoping, Sweden Scolt Head 21.9.81
31.8.81

Grey Plover

Further evidence of Grey Plover pausing in Denmark en route from Russia to the Wash.

Snettisham 8.2.81 Sjaelland, Denmark 5.9.82
North Wootton 25.8.72 Jylland, Denmark 1.9.82

Sanderling

The first two recoveries relate to colour-ringed birds. Whilst it is known that the Teeside wintering population pass through the Wash in autumn, there have been few spring movements noted through the Wash before.

Teeside 23.11.76 (and each winter Titchwell 17.9.82
since)
Heacham 22.4.78 Teeside 1.2.82 and
Hunstanton 25.3.82
Snettisham 9.8.75 Casablanca, Morocco 18.8.82

Dunlin

The first recovery is atypical, in being far inland in Europe and constitutes the first Austrian recovery of a British-ringed Dunlin. The last two recoveries reflect the importance of Morocco as a wintering and stop-over area for British east coast waders.

Wolferton 6.10.78 Rhein Delta, Austria 2.5.81
Wolferton 21.8.78 El Jadida, Morocco 27.3.82
El Jadida, Morocco 24.10.81 Terrington 23.7.82

Woodcock

West Tofts 16.12.81

Halstead, Essex 17.11.82

Whimbrel

The first recovery of this species affecting Norfolk and only the fourth Belgian-ringed Whimbrel to be found in Britain.

Knokke, West Vlaanderen,

Wells 17.8.81

Belgium 27.4.81

Redshank

One of the Icelandic breeding population, known to winter in Norfolk.

Hafnarfjordur, Iceland 25.7.72

Breydon 10.2.82

Greenshank

Another species that has not previously featured in the Norfolk Ringing Report.

This was the first recovery of a British-ringed Greenshank to Morocco, the majority having been in France.

Wolferton 29.7.76

Settat, Morocco 25.3.82

Turnstone

A particularly valuable recovery as it was ringed as a nestling and the first Turnstone from Sweden.

Juniskar, Vasternorrland, Sweden

Terrington 3.9.81

(pullus) 25.7.72

Black-headed Gull

The majority of recoveries followed the already well-established pattern. However, there have been few movements from Norfolk, to Germany or Norway. Note the recovery on Blakeney Point of a nestling ringed at one of the Essex colonies.

Norwich (adult) 28.12.68

Labo, Schleswig Holstein, F.R. Germany
(control) 21.3.82

Sheringham 24.1.79

Bleikoya, Oslo, Norway 19.5.82

Lake Zhuvintas, Lithuania SSR

Cley 16.8.82

(pullus) 8.6.82

Colne Estuary, Essex (pullus)

Blakeney Point 11.5.82

27.6.76

Deeping St. James, Spalding, Lincs.

Blakeney Point 10.6.82

3.11.65

Common Gull

Included is the first recovery of a Norfolk-ringed Common Gull in the USSR.

Ketteringham 7.2.76

Lake Vodlozero, Karelia, USSR 27.4.81

Thorpe 9.1.82

Slagelse, Sjaelland, Denmark 1.6.82

Schoorl, Noord Holland (pullus)

Thorpe (control) 9.1.82

11.6.72

Siikajoki, Oulu, Finland (pullus)

Thorpe (control) 9.1.82

17.7.81

Lesser Black-backed Gull

Ringing has shown that Norwegian birds are regular migrants through Britain, although there has only been one previous Norfolk recovery from Norway, but two from Sweden.

Skarvoy, Sogne, East Wranes,

Breydon 4.8.82

Norway (pullus) 14.7.81

Great Black-backed Gull

The second recovery in Norfolk of one ringed in the far north of Russia.

Kharlov Island, Murmansk, USSR

Breydon 2.11.82

(adult) 21.6.82

Common Tern

An indication as to where one of the inland-bred Terns moved after fledging.

Hardley Flood (pullus) 10.6.82 Heacham (injured) 16.8.82

Arctic Tern

One of the Danish population moving south in autumn, via the north Norfolk coast.

Isefjord, Sjaelland, Denmark Blakeney Point 23.11.81
(pullus) 4.7.81

Sandwich Tern

A fifteen year-old bird in Holland and, perhaps surprisingly, the first recoveries from the Farne Islands, including a sixteen year-old bird, which was part of a small 'wreck' of Sandwich Terns in south-east England in late April 1981.

Stiffkey (pullus) 22.6.67 The Netherlands 25.6.82

Farne Islands, Northumberland Fakenham 18.5.81

(pullus) 10.7.65

Farne Islands, Northumberland Blakeney Point 18.7.82

(pullus) 28.6.69

Puffin

Farne Islands, Northumberland Sheringham (oiled) 22.2.82
14.6.81

Sand Martin

Note the rapid post-fledging dispersal of the first bird. No significance should be attached to the date of the Moroccan recovery.

Loddon (juvenile) 22.7.82 Holme Pierrepont, Notts. (control) 29.7.82

Hardley 5.7.82 Beni Meual, Morocco (found) 31.12.82

Shanell GP, Leics (juvenile) 23.7.81 Loddon (control) 24.6.82

Swallow

Rockland 10.10.81 Helmsley, N. Yorkshire 10.6.82

Buckenham Carrs (pullus) 8.7.81 Billericay, Essex 11.9.82

March, Cambs. 11.9.82 Rockland (control) 16.9.82

Robin

Two fairly characteristic movements involving passage birds from Northern Europe.

Sheringham 10.10.82 Capbreton, Landes, France 28.10.82

Zwin, West Vlaanderen, Belgium Buckenham (control) 15.11.81

23.10.81

Blackbird

Several recoveries involved typical movements between Fenno-Scandinavia, but there have been very few to the Baltic States. Two interesting hard-weather movements into Wales and Ireland are given.

Grimston 21.2.81 Walsall, West Midlands 1.2.82

Holme 14.10.81 Knighton, Powys, Wales 21.2.82

Sheringham 12.10.81 Ballyjamesduff, Cavan, Eire 18.4.82

Waxham 28.10.78 Kose-Uvemoisa, Estonia, SSR 12.1.82

Kristiansand, Vest-Agder, Norway Sheringham (control) 19.10.82
19.9.82

Song Thrush

A typical winter recovery in Iberia of an autumn-ringed bird.

Sheringham 4.1.80 Estremoz, Alto Alentejo, Portugal
3.12.81

Mistle Thrush

The first recovery of this species affecting Norfolk. Although there have only ever been twenty one foreign recoveries of British-ringed Mistle Thrushes, all but one have been in France.

Hillborough 7.6.80

Nacqueville, Manche, France 25.12.81

Sedge Warbler

An interesting northerly movement in autumn and a control at the famous island-based German bird observatory.

Hardingham 21.7.81

Heligoland, Germany (control) 10.5.82

St. Osyth, Essex 23.7.82

Hardley (control) 1.8.82

Reed Warbler

An interesting series of recoveries, including autumn movements southwards, prior to departure from the south coast of England. Also a fascinating mid-summer movement north to Humberside.

Loddon 1.8.82

Littlington, Sussex (control) 14.8.82

Weybourne 28.8.82

Thurrock, Grays, Essex (control) 19.9.82

Gillingham 15.6.80

Hornsea Mere, Humberside (control)
17.6.80

Earlham 2.7.79

Casablanca, Morocco 16.9.82

Mucking, Essex 4.8.81

Hardley (control) 31.7.82

Blackcap

Further evidence of the route taken by October immigrants (see NBR 1980 p.261).

De Panne, West Vlaanderen,
Belgium 28.9.82

Sheringham (control) 11.10.82

Blue Tit

Happisburgh 13.10.80

Ormesby (control) 12.4.81

Happisburgh 13.10.80

Ormesby (control) 28.3.82

Great Tit

Movements of over 100 km, such as the one below, are unusual for this species.

Great Holland, Essex (pullus)
28.5.80

Castle Acre 28.3.81

Tree Sparrow

Gillingham 12.9.81

Burgh Castle 11.11.82

Chaffinch

The Belgian control presumably relates to a late-returning Scandinavian breeding bird.

Den Haan, West Vlaanderen,
Belgium 30.4.82

Sheringham (control) 10.5.82

Sheringham 3.4.82

Woodbridge, Suffolk (control) 12.5.82

Brambling

The recovery in Italy, was only the tenth Brambling to be recovered in that country, which is to the south-east of the normal recovery range.

Grimston 18.1.81

Gibraltar Point, Lincs. 19.12.81

Grimston 21.2.81

Udine, Italy 12.10.81

Norwich 8.2.81

Messelbroek, Brabant, Belgium (control)
17.3.82

Goldfinch

Happisburgh 8.5.82

Gorleston 9.5.82

Gillingham 8.8.81

Cartigny L'Épinay, France 8.3.82

Siskin

A recovery of a bird controlled during a period of unusually heavy Siskin passage

through the County, in early Spring. Only the fourth Norwegian-ringed Siskin to be found in Britain, the majority coming from Germany and the Low Countries.

Averoya, Buskerud, Norway 6.10.81 Sheringham (control) 1.4.82

Linnet

Large numbers of British Linnets have been recovered in Spain in winter. The bird in Belgium was seen caged in an Antwerp market and later released in South Holland.

Holme 3.9.82

Bilbao, Vizcaya, Spain 2.11.82

Gillingham 9.9.78

Belgium 9.11.82

Lesser Redpoll

An interesting recovery of a bird found twice in different areas of Belgium.

Leziate 28.9.74

Zulte, Oost Vlaanderen, Belgium 2.12.77

Oeselgem, West Vlaanderen, Belgium
12.9.82

Reed Bunting

Weybourne 14.8.82

Happisburgh (control) 13.10.82

Lesser Redpoll Migration in Norfolk

The Lesser Redpoll is a common summer visitor to Norfolk, with smaller numbers resident in the county throughout the year. It is also likely that it occurs as a passage migrant but numbers involved are probably small and more difficult to estimate accurately.



The species is an avid drinker, and being particularly gregarious in its habits, can be trapped in considerable numbers during favourable weather conditions. Since the trapping technique depends on a limited amount of standing water, it follows that the largest catches occur during warm weather and recovery information is therefore biased towards summer — trapped birds, notwithstanding that the species is less common during the winter period.

The map shows selected British, and all known foreign recoveries of Lesser Redpoll ringed in Norfolk during the summer period and recovered during winter. It is amply demonstrated that the part of the population departing for the winter divides between birds remaining in Britain and those crossing the North Sea. Those leaving Norfolk but choosing to remain in this country disperse for the most part south of the 53rd degree of latitude with records as widely spread as Kent, Devon and Nottinghamshire. Those birds moving to the Continent of Europe would seem to favour Belgium, with smaller numbers occurring in The Netherlands, France and the Federal Republic of Germany. However, there is evidence that Northern France is favoured somewhat more than the map would suggest since French ringers are less active than their Belgian counterparts, and most Redpoll recoveries occur as 'controls' (i.e. being re-trapped by another ringer).

The movement across the North Sea takes place very soon after the annual moult. (Moult tends to be completed during the second half of September after lasting 40-55 days). Of 25 ringing/recovery dates between 20th September and 20th October concerning Norfolk and Belgium, there are no examples of Lesser Redpolls in Norfolk after 6th October nor any in Belgium prior to 8th October. Whilst it would be misleading to suggest that all birds migrate on 7th October, it does serve to illustrate that the annual migration to the Continent seems to occur in one large movement at almost exactly the same time each year. Dr. P. R. Evans (1966) demonstrated that Northumberland-bred birds move southwards through Britain before making the short North Sea crossing, but there is no evidence that such movements involve Norfolk.

Incidentally, recoveries associated with the Belgian bird-trapping season are few enough so as not to influence the results presented. I have made no attempt to comment on the return passage since there is insufficient spring data to analyse.

The breeding Redpolls of the Low Countries are in fact of the British race, and we may safely assume that the spread through Benelux is as a result of wintering British — reared birds remaining to breed. This spread is a relatively recent phenomenon — Dutch breeding Lesser Redpolls numbered less than 10 pairs prior to 1961, but by 1978 had increased to over 600 pairs (*Atlas van der Nederlandse Broedvogels*, 1979). That this trend is continuing is supported by a juvenile female trapped near Swaffham 8th September, 1979 (obviously Norfolk-bred) and trapped again as a breeding adult in West-Vlaanderen, Belgium 7th July 1981.

Re-traps clearly show that the Lesser Redpoll that winter in Norfolk are in fact present throughout the year and duly breed locally. There is therefore no evidence of the species occurring in the county as a winter visitor.

These comments apply only to the Lesser Redpoll of course. It is well known that the north European Mealy Redpoll occurs in the county as a passage migrant and to a lesser extent as a winter visitor. Although taxonomically confusing, other races of Redpoll have been recorded as vagrants from time to time.

My grateful thanks are extended to British Trust for Ornithology for allowing me access to Redpoll recoveries in their files.

A. J. Hale



Classified Notes

These notes are based on *Birds of Norfolk* (revised edition 1977) where fuller details regarding status, distribution, migration and ringing recoveries may be found. Fuller details of Fens records appear in the Cambridge Bird Club Report for 1982.

The order used is that of K.H. Voous (1977) *List of Recent Holarctic Bird Species*. Observations refer to 1982, 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 off Paston: 119 east Jan 2nd, 331 west on 9th, 339 east on 10th and 184 on 11th; also 180 east off Sheringham on 6th. Scattered inland records from Gillingham, Lound, Hickling, Blickling and Tottenhill GP where 3 together Feb 9th.

Black-throated Diver: Usual coastal records up to April 14th (Titchwell) and from Sept 23rd (Holme). Largest groups: 5 Holkham Nov 4th and 16 Hunstanton Jan 3rd. No inland records received.

Great Northern Diver: Coastal records as follows: Snettisham GP Feb 2nd/3rd, Holme 3 Nov 6th, Hunstanton Oct 15th, Nov 7th and Dec 28th, Titchwell Oct 11th and Nov 20th, Blakeney Point Jan 8th, 16th and 23rd, Cley Jan 23rd-30th, Sept 23rd, Oct 14th-18th and Dec 27th, East Runton Nov 27th, Paston Nov 6th, Dec 22nd (dead) and 24th, Horsey Oct 7th, 30th and Nov 6th and Winterton Feb 21st.

Little Grebe: Broadland breeding records include Breydon (3 pairs) and Haddiscoe Island (4 pairs). Usual Brecks records including 13 pairs summering Lang Mere and up to 12 pairs Brandon to Santon Downham. Peak of only 9 at Snettisham in Feb (see 1981 Report), but 46 at Hickling Nov 13th. Unusual record off Paston of one on sea Oct 28th.

Great Crested Grebe: Breeding records include Hoveton Great Broad 7 pairs, Hickling Broad 8 pairs, Buckenham to Strumpshaw (River Yare) 4 pairs, UEA Broad 4 pairs (late nesting here: pair with 2 chicks seven days old Oct 6th), Blickling Lake 2 pairs, Narborough 2 pairs, Swanton Morley GP2 pairs, Frettenham Pits 1 pair, Costessey Pits 1 pair and Worthing GP 1 pair.

Non-breeding assemblies: 23 Snettisham Aug 3rd, 102 Hunstanton Sept 4th and 50 Nov 7th, 50 Titchwell Feb where 70 Oct and 50 Nov.

Red-necked Grebe: Over 110 coastal records up to May 5th (Hunstanton) and from Sept 23rd (Titchwell). Mostly singles, but 4 Titchwell Feb 27th, 4 Holkham Oct 28th - Nov 4th and 6 Cley Jan 26th. Inland: Filby Broad Feb 1st-21st, Hickling Broad March 21st, Bawburgh GP Sept 26th and Stanford Water Oct 22nd.

Slavonian Grebe: Over 65 coastal records to March 22nd (Sheringham) and from Sept 6th (Hunstanton). One at Scolt Head June 13th is exceptional. Impressive numbers off north coast end Oct to mid-Nov including 9 Holme Nov 5th and 6 next day. Recorded Titchwell Oct 20th-Nov 19th with 5 Nov 1st and 9 on 5th. High total of 18 Holkham/Wells Nov 4th along $\frac{3}{4}$ mile stretch including 10 together; also 11 there on 7th and 5 off Cley Dec 11th.

Inland: St. Olaves Jan 24th and Horsey Mere Dec 12th.

Black-necked Grebe: Recorded Snettisham GP March 4th, Holme Sept 23rd and Oct 25th and Hunstanton Feb 18th. Titchwell: single breeding plumage bird April 10th and 3 in full dress May 7th/8th with 1-2 till 25th and 1 June 4th-6th; one off-shore Oct 20th. Scolt Head March 17th, Blakeney Point Jan 24th and Feb 10th and Cley Jan 12th and 23rd.

Fulmar: Between June 19th and July 2nd the number of occupied sites was counted by MT at all known colonies in the county with the following results. Counts made as suggested in *Operation Seafarer*:

Hunstanton 99 occupied sites, Weybourne-Sheringham 73, Sheringham-West Runton 12, West Runton-East Runton 19, East Runton-Cromer 29, Cromer-Overstrand 2, Overstrand-Trimingham 7, Trimingham-Mundesley 1, Mundesley-Bacton 0 (but 2 birds in flight) and Bacton-Happisburgh 5.

Dark phase individual Paston Aug 14th.

Cory's Shearwater: Holme Sept 6th (KBS). Additional 1981 record: Hunstanton Aug 22nd (ARK RFP).

Sooty Shearwater: Again fewer records: Holme Sept 6th, Titchwell 2 early birds July 22nd, Cley Aug 18th, 3 on 20th, 1 Sept 6th and 10 Oct 9th, Sheringham 10 Sept 6th and 1 on 21st, Paston Sept 12th and 4 Oct 9th, Mundesley 3 Oct 9th, Horsey Oct 9th, Winterton Sept 13th and 2 Oct 7th, Scratby Oct 8th and Yarmouth 2 Sept 6th.

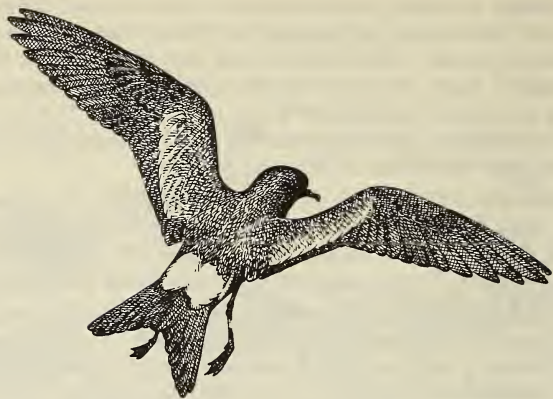
Manx Shearwater: Recorded June and Aug-Oct mainly from north coast. Largest numbers Aug 31st when 44 at Holme, 50 at Cley and 47 at Sheringham; also Sept 6th when 23 east and 41 west at Holme, 60 Blakeney Point and 211 east Sheringham. One of the Balearic race Cley Oct 6th.

Leach's Petrel: Lynn Point 3 Sept 6th, Holme 2 Sept 6th, Blakeney Point 2 Sept 5th, Cley Sept 5th, 3 on 11th and singles 13th, 14th and Oct 9th and Paston Sept 6th.

Gannet: Most impressive movements Holme Sept 6th when 190 west and 60 east; Sheringham 200 east Oct 7th; Paston 230 east Oct 23rd.

Cormorant: Ranworth Broad winter tree roost peaked at 350. At Welney power line roost 70 in March.

Shag: Few records: Cley Nov 4th, Salthouse Oct 30th, Sheringham June 29th, 2 Sept 25th and Oct 7th, Cromer Jan 16th, Paston 3 Jan 11th and Nov 13th.



Inland: Thetford alive on road Nov 18th following SW gale.

White Pelican: Breydon 3 Aug 31st to Sept 2nd 1971 (PRA BJB MJJ). Now accepted by B.B.R.C. under category D.

Bittern: Continues to decline and only 5 regular boomers in Broads compared with 6 in 1981, 7 in 1980 and 9 in 1979. Five boomers on north coast at 3 sites. Interesting observation of one Swanton Morley GP July 27th. Winter records from How Hill, Catfield, Strumpshaw, Ranworth, Horning, Snettisham, Hunstanton (casualty Jan 14th), Holme and West Tofts.

Night Heron: An adult and a second winter bird at Horning/Burnt Fen Jan 16th to March 29th followed by an adult at Melton Constable/Briston Dec 15th to 31st. Broads area birds carried rings and obviously 'escapes' as probably last mentioned individual.

Grey Heron: Heronry records include Snettisham 11 nests, Islington 63, Hilgay 37, Didlington 7, Sturston Carr 6, Shadwell 7, Stanford 1, Bawburgh 1-2, Buckenham 10, Hickling (Sounds Wood) 14, Fleggburgh Common 1-2 and Surlingham 3. None bred at either Strumpshaw or Wheatfen. Migrant observations include 5 in off sea Sheringham Sept 25th when at Holme 29 arrived from east followed by 4 on 29th and 6 on 30th.

Purple Heron: Paston in from sea Sept 18th turning south and later in day at Horsey.

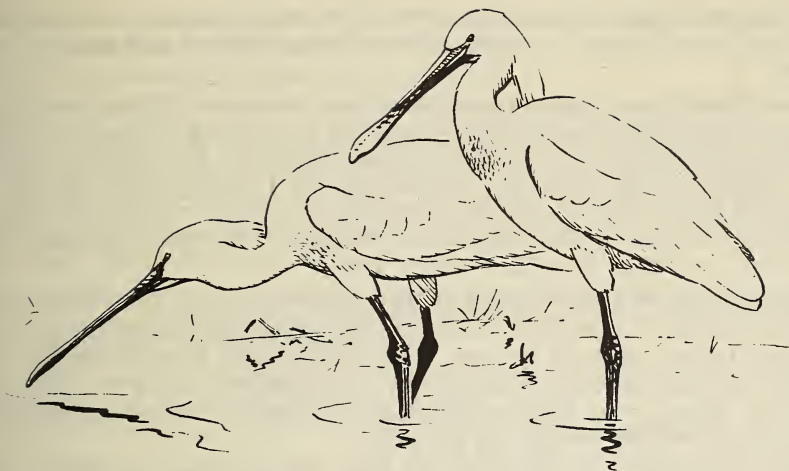
Additional 1981 record: Cley May 21st/22nd.

White Stork: One remained in vicinity of Suffield and Gunton Park from early May until Aug 2nd, moving to Horsey/Marham/Hickling area Sept 3rd to Oct 7th. Another Gt. Cressingham May 8th (LRC).

Glossy Ibis: One arrived from sea at Holkham Oct 24th then west over Titchwell, Holme and finally Hunstanton.

Additional 1981 records: Broads 2 May 10th and 1 on 30th.

Spoonbill: At Snettisham May 6th-13th, July 12th and Oct 9th; Snettisham/Wolverton Nov 26th-Dec 18th; Holme June 1st; Titchwell usually singles May 3rd-Sept 2nd but 3 June 6th, 2 mid-June with 4 Aug 15th-28th also singles Nov 20th and Dec 13th; Cley May 10th/11th, 16th-19th, June 8th-12th, July 2nd-4th, 30th/31st, Nov 4th, Dec 14th and 20th; Sheringham west May 4th; Hickling May 22nd and July 2nd; Horsey 2 in May and Breydon 2 July 10th.



Bewick's Swan: Recorded to April 3rd and from Oct 4th. Largest concentrations at Welney where 3,000 Jan and 1,012 Nov, but at year end no full counts made as most birds up to 12 miles distant feeding on fields. Elsewhere most impressive winter totals: Geldeston 42 Dec 2nd; Horsey 52 Feb 21st; Martham/Potter Heigham 186 Feb 27th; Hickling 166 Feb 14th; Billockby 85 Feb 13th; Filby 54 roosting on broad Jan 3rd; Halvergate/Lower Bure 96 Jan 23rd-Feb 26th and Snettisham-Wolferton 92 Feb.

Easterly exodus: Wymondham 41 Feb 7th; Breydon 32, Cantley 18 and Paston 24 all Feb 28th; Wymondham 120 March 1st; Breydon 69 March 2nd and 50 there on 13th.

Autumn westerly movements: Hunstanton 76 Nov 6th; Holme 14 Oct 25th, 138 Nov 6th, 13 on 7th, 14 on 14th, 10 on 21st, 39 on 28th, 48 Dec 5th and 44 on 29th; Titchwell 61 Nov 6th; Brancaster 70 Nov 6th, 9 on 7th, 31 on 28th and 46 Dec 29th; and Horsey 36 Nov 6th.

Whooper Swan: Recorded to April 1st and from Oct 15th. Largest herds at Welney: 140 in Jan, 120 Feb and 117 March, 72 Nov and 221 Dec. Elsewhere, largest assemblies in Hickling/Martham/Potter Heigham area where up to 42 Jan, 49 Feb, 25 March, 16 Nov and 36 Dec and at Snettisham/Wolferton where max 42 Feb and 14 in Dec. Westerly movement Nov 6th/7th when 6 arrived Horsey, 6 Yarmouth and 9 Titchwell.

Bean Goose: Yare valley: 324 in Jan, peak of 329 in Feb, 309 March 1st and last 51 on 6th; 18 returned Oct 24th increasing to 96 by Dec 4th, 137 on 13th and 148 at year end. Elsewhere: Hickling area 33 Jan 30th, up to 31 in Feb, 14 till March 7th and 4 April 1st; also there 18 Nov 10th, 14 Dec 2nd and 16 next day. Horsey: 9 Jan 5th and 7 Nov 30th. Hardley Flood: 4 Feb 6th-13th. Halvergate: 9 Jan 17th. Gunton Park: 16 Jan-Feb. Cley: 16 Nov 6th and 13 Dec 11th. Holkham: 6 Dec 5th. Snettisham: up to 11 Jan 4th to March 20th and one on saltings till April 26th. Lynn Point: 11 Jan 4th where one till April 26th. Downham Market: 8 Jan 17th and Welney: 30/40 Feb 8th with 11 remaining into March.

Pink-footed Goose: Again high totals in Snettisham area including 10,500 in late Jan, 2,500 late Feb, 1,100 March 31st and last April 12th with 11 May 1st and 3 on 11th; 26 back Oct 21st, 5,000 from Nov 24th and 2,500 in Dec. Large numbers in

Brancaster/Docking area including 4,500/5,000 from late Jan and over 3,000 from Dec 13th till end of year. At Holkham 90 in Feb and 300 Dec 14th onwards.
wards.

White-fronted Goose: Largest gaggle at Holkham/Wells where 250 Jan, 300 Feb and last 90 which departed north-easterly March 8th and 150 in Dec. Present in Hickling/Horsey area from Dec 12th where 132 on 15th, 144 on 27th and 82 on 30th. In Yare Valley 8 in Jan, 24 in Feb, 128 Dec 2nd, 135 Dec 4th and 126 till 30th. At Gorleston 45 on stubble Dec 7th, 60 on 10th and 30 on 16th. At Breydon 90 Dec 4th. At Cromer 40 in off sea Dec 2nd and 96 at Weybourne Dec 5th. At Stiffkey 27 Dec 12th-18th. At Welney 30 in Feb and 60 in Dec.

Grey-lag Goose: Hickling/Horsey area, 13 considered fully wild Nov 13th onwards.

Barnacle Goose: In Horsey area 35 Dec 5th, 49 Dec 11th-30th. Hickling 2 Nov 11th-Dec 6th. Ludham Bridge 2 Jan 24th. Cantley 2 Nov 28th. Breydon Dec 6th. Yare Valley Jan 23rd. Halvergate 5 Jan 10th. West Runton cliffs 11 Oct 8th. Cley 6 Dec 4th-19th. Holme 13 Oct 8th/9th. Snettisham 11-12 Dec 7th onwards. Lynn Point 6 Dec 13th and Welney Feb 6th and Dec 3rd.

Brent Goose: Recorded monthly except June/July. Maximum numbers at main localities: Breydon 216, Blakeney 3,000, Cley 2,000, Holkham 1,700, Burnham Overy 8,000, Burnham Norton 3,500, Scolt Head 3,000, Titchwell 950, Hunstanton 400, Snettisham 2,000, Lynn Point 2,000; 1,500 still present in Wash May 17th.

Inland in Yare Valley Nov 18th-28th. A black brant *nigricans* at Cley Eye Nov 7th-Dec 13th. Groups of 1-13 pale-bellied *hrota* Jan-March and Dec at Lynn Point, Wolferton, Wells, Cley and Salthouse. In addition one at Shernborne 5 miles inland with pink-feet. Two leucistic birds flew west Cley Oct 6th and then present in early winter period in Wells/Burnham Norton area.

Shelduck: On Wash at Snettisham 6,340 in Jan, 7,680 in Feb, 4,793 in Oct and 4,912 in Dec. At Breydon 781 June 26th. Breeding records away from coast: single pairs at Cockley Cley, Tottenhill, Pentney, Narford, King's Lynn BF, Stanford Water, Thompson Water, Blackborough End and Aldeby GP. Also 4 pairs at Wissington BF and 245 young at Cantley BF.

Moult migrants north-east off Holme July 24th (50) and off Titchwell on 29th (800).

Wigeon: Highest estimates: Yare Valley 7,500 Jan and 3,000 Dec; Breydon 5,800 Jan; Hickling 1,000 Dec; Blakeney 5,500 Jan; Burnham Norton 3,500/4,000 Jan in cold spell; Snettisham 5,040 Jan, Lynn Point 7,000 Jan (Welney flooded) and Welney 8,000 Feb, 11,171 March and 10,500 Dec.

Mandarin: King's Lynn Jan 17th.

Gadwall: Highest count at Gunton where 427 in Sept. Coastal numbers include 100 at Titchwell Aug and 121 at Snettisham in Feb where 151 Nov. In Brecks 200 Stanford March, 260 Narford Nov and 60 Hillington Dec.

Elsewhere 65 at Welney Oct and 196 Hickling Nov.

Teal: Counts include 2,027 at Hickling Oct 13th where 812 mid-Nov.

Green-winged Teal: A drake at Welney Nov 28th (RGN). Additional 1981 record: Cley 2 drakes April 19th-22nd (EJR SKW *et al*).

Pintail: Largest totals: Breydon 172 Feb, Blakeney harbour 1,000 Jan-Feb, Snettisham 2,690 Feb and 480 Dec, Wolferton 700 Feb and Lynn Point 800 Feb.

Garganey: Spring arrival from March 14th (Cley and Horsey Mere) followed by 1-4 at Lynn Point, King's Lynn BF, Tottenhill, Snettisham, Heacham, Holme, Titchwell, Holkham Lake, Wiveton, Hickling, Surlingham, Upton, Breydon, Berney

Arms and Strumpshaw. Large party 7 at Welney. Only confirmed breeding at Cley where 4 young. Latest: off Blakeney Point Oct 10th.

Shoveler: Largest totals at Welney including 250 Nov.

Red-crested Pochard: Tottenhill GP drake March 27th-April 14th (NB JBK).

Pochard: In Brecks 110 Tottenhill Feb and 160 Narford Nov. At Welney 2,000 in Jan and 450 in Nov. At Snettisham 81 Feb and 70 Oct. In Broads bred at Strumpshaw, Cantley, Filby, Hickling (9 broods). Very incomplete counts elsewhere.

Tufted Duck: Winter counts: Snettisham 76 in Feb and 98 in Dec; Narford 100 in Jan; Colney/Bawburgh 105 in March.

Scaup: Largest number Lynn Point 110 Jan 4th. Elsewhere 23 at Hunstanton and 20 at Paston, both Jan. Mid-summer observations: Snettisham 5 June 21st; Titchwell 2 July 13th-18th and Cley July 13th-17th.

Eider: Highest counts: Hunstanton 142, Holme 90, Thornham 200, Scolt Head 50 and Yarmouth 23. Off Paston 102 west Jan 8th.

Long-tailed Duck: Most regular off Hunstanton/Holme where monthly totals as follows: 64 Jan, 97 Feb, 55 March, 7 Nov and 25 Dec. Elsewhere up to 12 (and once 20) off Lynn Point, Snettisham, Titchwell, Wells, Blakeney harbour, Cley and Salthouse up to April and from Oct. Unusual total of 70 off Scolt Head March 3rd, the drakes performing 'parachute' displays. In addition, 1 Yarmouth March 31st, 5 Horsey Nov 7th and 5 Paston Nov 7th where singles Nov 14th and 20th.

Common Scoter: Inshore counts: Hunstanton/Holme 300 Jan and 500 Nov; Titchwell 1,000 Feb, Scolt Head 800 March/April and Brancaster 500 April.

Velvet Scoter: Recorded monthly (except June/July). Largest parties 12 Paston Jan 9th and 11 Hunstanton Nov 1st.

Goldeneye: Peak counts: Flood Relief Channel 42 Feb; Snettisham 69 Feb; Hunstanton 163 Jan; Holme 80 Jan; Brancaster 200 Jan and 220 Dec; and Blakeney Point 80 Jan. Broads: Breydon 28 Jan, Martham 24 Jan and Hickling 33 Feb.

Smew: Recorded up to March 14th. Largest groups 10 at Swimcoots Hickling and 5 Hunstanton; elsewhere 1-3 at Stow Bridge, Downham Market, Wiggenshall, Watlington GP, Welney, Holme, Titchwell, Morston, Cley, Bayfield Lake, Horsey, Filby, Breydon and Fritton.

Red-breasted Merganser: Largest numbers: Snettisham 63 Jan and 46 Nov; Hunstanton 30 Feb and 37 Dec; Titchwell 31 Nov, Brancaster 35/40 Nov, Paston 33 Oct and Horsey 25 Nov.

Goosander: Winter records at 14 localities including 22 Downham Market Jan 17th.

Ruddy Duck: Narford April 19th, Holkham Lake 2 Aug 6th, Breydon Jan 14th and Hickling 2 Jan 4th-Feb 14th, also May 19th.

Honey Buzzard: Titchwell June 25th and Salthouse in from sea Aug 29th are only observations submitted.

Red Kite: One at Holme Nov 5th, Horsey and Strumpshaw Nov 7th are probably the same individual.

Marsh Harrier: County total of 19 females and 14 males nested or attempted nesting; 42 young reached flying stage. Up to 22 in roost at one site Aug 22nd and 1-4 present Welney Wash area June to Oct. Up to 3 wintered in Hickling/Heigham Sounds area.

Hen Harrier: A great many records at coastal sites up to May 22nd (when 2 at Holme) and from Sept 10th (Holme). Counts include Lynn Point 3, Dersingham 3, Snettisham 3, Holme 5, Kelling Heath 4, Salthouse Heath 3, Hickling 4, Horsey 5,

Winterton 3, Fritton (Waveney Forest) 7. Singles in off sea Hunstanton Nov 5th and Yarmouth on 7th.

Roosting sites include Titchwell Jan 15, Feb 12, March 22 (including 7 males), April 2, Oct 9, Nov 11 and Dec 5; Scolt Head Jan 16, Feb 8, March 9, Nov 11 and Dec 8; Roydon Feb 12; Snettisham Dec 6 and Strumpshaw Jan-March 4 and Nov-Dec 8.

Montagu's Harrier: Male with 2 females reared 4 flying young at one site. Elsewhere Panxworth May 4th, Hickling May 16th, Choseley and Titchwell June 1st, Massingham Heath June 14th, Wolferton Aug 9th and Flitcham Aug 20th.

Goshawk: Hickling Jan 12th, Brecks April 18th and May 15th, Paston May 16th, Winterton July 4th, Syderstone Common Nov 7th and Buckenham Dec 18th.

Sparrowhawk: Recorded at well over 100 sites, but only 5 pairs known to have bred and breeding season records from additional 6 sites. Only notable spring movement 7 west Sheringham April 3rd.

Buzzard: Singles at Cley, Fleggburgh, Fritton (Waveney Forest), Hickling, Holme, Honing, Lound, Morston, Sandringham, Sheringham, and Winterton. Recorded Jan-June, Oct and Dec.

Rough-legged Buzzard: Recorded to May 9th (Horsey) and from Oct 7th (Holme). 1-2 recorded at Blakeney, Brancaster Staithe, Cley, East Tuddenham, Flitcham, Fritton (Waveney Forest), Happisburgh, Heydon, Hickling, Holkham, Holme, Horning, Horsey, Lynn Point, Massingham Heath, Overstrand, Paston, Potter Heigham, Salthouse, Scolt Head, Sheringham, Snettisham, Stiffkey, Titchwell, Waxham, Wells, Weybourne, Winterton and Yarmouth (one resting in Parish Church grounds Oct 16th and 3 south Oct 27th).

Osprey: Extreme dates April 11th-Oct 6th. Singles recorded at Alderfen Broad, Breydon, Cley, Docking, Edgefield, Filby Broad, Hickling Broad, Holme, Horning, Sheringham, Snettisham, Thompson Water, Titchwell and Wayford Bridge.

Kestrel: Exceptional total of 48 hunting over sea walls at Snettisham second week of Aug.

Merlin: Noted at 33 localities to May 20th (Wolferton) and from Sept 21st (Strumpshaw). Majority singles, but 2 at both Roydon and East Somerton.

Hobby: Twenty-nine records between April 27th (Wells) and Oct 3rd (Hickling). Recorded at Breydon, Cley, Dersingham Fen, Happisburgh, Hickling, Holme, Horsey, Hunstanton, Massingham Heath, Paston, Santon Downham, Sheringham, Snettisham, Strumpshaw, Titchwell and Wells. All singles except 2 Snettisham July 12th and 2 Hickling Oct 3rd.

Peregrines: Four records: Blakeney Point Feb 22nd, Cley March 27th, Bacton (displaying jesses and bells) June 28th and Scolt Head Dec 12th.

Quail: Calling at Snettisham June 16th.

Golden Pheasant: Recorded at Cockley Cley, Croxton Heath, Gooderstone, Gt. Hockham, Grime's Graves, Kilverstone, Lynford, Merton Park, Narford, Shadwell, Swaffham Heath, Thetford Warren, Thompson Common, Wayland Wood, Wells and Wolferton.

Water-Rail: Few breeding records received nowadays, but 2 pairs nested Strumpshaw.

Spotted Crake: Cley April 23rd-28th and Titchwell Aug 29th.

Corncrake: Only records: Cley May 8th (SB *et al*), East Wretham 4 occasions July (PS) and Horsey Sept 11th (ADB).

Crane: In Broadland, 2 present throughout year. A third bird from early August and

a fourth present from at least Aug 16th onwards. Cley: one west Feb 7th (ANS).

Oystercatcher: Peak Wash counts were 11,980 March and 14,000 Oct while at Breydon there were 228 April.

Avocet: Holme: Pair reared 3 young; max count 12 mid-July. Cley: 26 pairs reared 55 young; first hatching May 19th and last hatching July 4th. One wintered, mostly on Arnold's Marsh until found dead Feb 27th. Another found long dead Blakeney Point Feb 19th. Hickling: Pair reared one chick.

Also recorded from Snettisham, Titchwell, Sheringham, Bacton (5 east Dec 3rd), Breydon and Hardley Flood.

Stone Curlew: Twenty pairs reported from three areas where extreme dates were March 28th and Nov 20th. Single bird flew west offshore Cley May 6th landing on Reserve. Single in Cley/Salthouse/Weybourne area Aug 21st-Sept 19th.

Little Ringed Plover: At least 26 pairs bred, success generally unknown. Three other sites held birds in summer. Extreme dates April 4th (King's Lynn BF and Colney/Bawburgh) and Sept 23rd (Holme). Maximum count of migrants was 16 King's Lynn BF July 22nd.



Ringed Plover: May passage of small, dark Arctic race with 100 Lynn Point 10th/11th and 200 Breydon 16th as well as smaller groups at Cley and Holme.

At least 8 inland breeding pairs, mostly on gravel pits, together with 8 nesting pairs at Hickling. More breeding information required.

Kentish Plover: Recorded only in spring when female Hickling June 17th-24th; Breydon April 28th and May 1st, 3rd, 16th/17th and 28th and Cley/Salthouse May 14th/15th, 26th/30th and June 4th.

Dotterel: Two very early birds Salthouse April 12th/13th in partial winter plumage. Typical series of May records with 2 Sheringham 15th, 5 Horsey 8th, 1 Salthouse 1st-4th, 2-3 Ringstead 16th-20th and 3 Cley 14th.

A juvenile Sheringham Sept 6th/7th is only autumn record.

Golden Plover: Build up of spring migrants included 1,100 Holkham March 11th; 2,500/3,000 Burnham Norton-Deepdale March 18th, 8,000 Welney and 600 Boughton March 25th.

Grey Plover: Major counts include 520 Snettisham Jan and 365 Dec, 500 Lynn Point Aug 9th, 120 Blakeney Point Sept 6th and 400 Titchwell Sept 19th.

Knot: Peak Wash counts were 38,000 Feb and 44,000 Dec at Wolferton while 20,000 were at Titchwell Sept. Only inland record was from Tottenhill GP May 13th.

Sanderling: At Titchwell 150 July 24th and Sept 5th with 50 Scolt Sept 13th.

Little Stint: Spring passage from March 7th at Cley followed by 2 there April 4th; 3 May 4th, 10-12 May 14th-16th, 6 May 18th, 4 May 19th and 1 May 31st. Also singles



Lynn Point May 10th, King's Lynn BF May 31st-June 1st, June 20th and Titchwell May 18th, 3 Hickling May 29th and 1 June 17th and singles Breydon May 30th and at Holme June 6th.

In autumn recorded from July 4th (Pentney) until Dec 12th (Titchwell). Widely distributed with records from Breydon, Hickling, Cley, Holme, Lynn Point, King's Lynn BF and Snettisham. Maximum counts reported were Sept 9th-12th when 5 Hickling, 10 Cley, 15 Titchwell and 9 Holme.

Temminck's Stint: A strong May passage with records from Tottenhill GP (1) 17th/18th and (2) 22nd; King's Lynn BF (2) 23rd/24th; Holme (1) 29th; Cley (2) 13th-18th, (3) 19th-23rd, (4) 20th, (2) 24th-27th and (1) 28th; Hickling (4) 13th-16th, (6) 17th, (2) 20th.

Autumn migrants at Cley July 13th, (2) July 16th, Aug 6th and Aug 10th; Titchwell July 17th; King's Lynn BF July 28th-Aug 1st; Blakeney Point Aug 7th and Hickling (2) Sept 12th.

White-rumped Sandpiper: An adult Titchwell July 31st (SCJ AP *et al*).

Baird's Sandpiper: An adult Salhouse Aug 23rd-Sept 23rd (JG JJH *et al*).

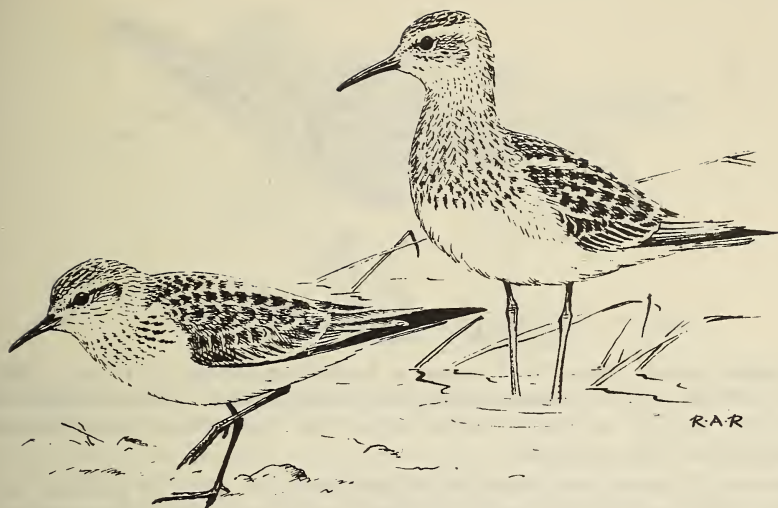
Pectoral Sandpiper: Two at Wisbech SF from at least Sept 5th-7th (NB MR *et al*); Cantley BF Sept 11th (GED) and Hickling Sept 12th (SL).

Curlew Sandpiper: A light spring passage included a very early record of 7 Cley April 3rd with singles May 15th, 21st, 22nd and 2 on 19th. Another early bird Titchwell April 22nd and single Lynn Point June 21st.

Returning July adults at Snettisham from 19th (max 7), Cley from 23rd (max 10), Breydon from 25th, Titchwell from 28th with 8 Lynn Point Aug 10th.

Later waves of juveniles peaked at 42 Hickling Sept 4th, over 50 Cley Sept 11th-14th (many feeding on hatching crane flies on dry grassland of Eye Field), 53 Breydon Sept 15th and 40 Titchwell same day. Latest date Oct 28th Breydon.

Purple Sandpiper: Recorded until May 9th (Hunstanton) and from Aug 7th (Titchwell) at following sites (peak numbers in brackets): Snettisham (1), Hunstanton-Heacham (12), Holme (1), Titchwell-Brancaster (7), Cley (1), Sheringham-W. Runton (4), Bacton-Paston (7) and Yarmouth-Gorleston (5).



Dunlin: Peak Wash counts at Snettisham were 6,000 Feb and 1,220 Dec. First juveniles reported from July 19th (Titchwell).

Broad-billed Sandpiper: Two records from Cley where one present May 26th-29th (BB PJH *et al*) and a worn plumaged adult July 23rd-26th (PKJ PB *et al*). Single at Hickling May 25th (DJH).

Buff-breasted Sandpiper: A bird at Cley on Eye Field May 15th-18th (RM RS *et al*) was only the second spring record for the county.

Ruff: A heavy spring passage with notable concentrations at Hickling: 81 March 24th and 64 April 22nd; Horsey: 50 April 24th and 70 May 2nd; and Cley: 40 March 14th, 50 April 3rd and 40 May 15th. Lekking birds (10 males and 4 females) also at Welney.

Autumn peaks included 11 King's Lynn BF July 11th, 40 Cley Sept 2nd, 17 Wolferton Sept 5th, 30 Titchwell Sept 13th and 44 Hickling Oct 3rd. Wintering birds at Lynn Point (Jan, Dec), Cley (Jan), 16 Heigham Sounds (Jan) and 50 Hickling (Feb).

Jack Snipe: Noted up to April 24th (Titchwell) and from Sept 24th (Holme). Records, mostly of singles, at 12 localities.

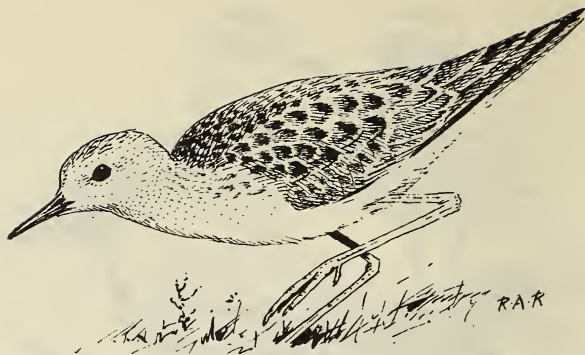
Snipe: Major concentrations at Welney: 300 March, 100 Sept, 100 Oct and 350 Nov. Also 70 Cantley Nov 28th.

Woodcock: Only concentration concerns 15 Horsey Mill Jan 23rd (flushed by shooting party). Also 8 Wells Nov 5th. Widespread records of roding birds.

Black-tailed Godwit: At Welney 13 Feb 6th, 20 Feb 21st and 72 March with 20 breeding pairs and later 15 pairs with young; also 8 present at year end. On the Wash (Lynn Point-Wolferton) from March 29th with peak monthly counts of 20 April, 6 May, 16 June, 100 July, 35 Aug and 22 Sept.

At Cley seen from March 7th with peak counts of 21 April, 18 May, 26 June and 30 July.

Autumn passage at Titchwell from Aug 15th-Nov 27th with peak of 65 Nov 7th. Also at Breydon Jan 9th-Feb 10th, 7 March 26th, 10 April 30th, Sheringham, Overy Staithe, Burnham Norton, Holme (9) and King's Lynn BF.



Bar-tailed Godwit: Major Wash counts at Snettisham include 2,500 Jan, 7,000 Feb and 2,700 Sept with a concentration of 1,000 Scolt Head Feb. Up to 80 Cley Eye field early Sept feeding on freshly hatched crane flies. Only inland record concerns 2 Tottenhill GP May 15th/16th.

Whimbrel: Extreme dates April 26th (Lynn Point) and Nov 5th (Holme). Spring peak 95 Breydon May 9th flying NE. Autumn peaks include 40 Blakeney Point Aug 9th, 25 Titchwell Aug 14th, 70 Holme late Aug, 60 Sheringham Sept 6th flying west and 60 Brancaster/Scolt Sept 13th.

Inland records from Downham Market (2 May 9th) and East Winch Aug 26th.

Curlew: High tide flock 700 Lynn Point Aug 23rd. Small breeding population includes 7 pairs Stanford PTA as well as 1-2 pairs Roydon Common.

Spotted Redshank: Winter records from Cley (Jan, Dec), Breydon and Titchwell (Dec). On the Wash (Lynn Point-Wolferton) recorded from March 20th until Nov 27th with an exceptional peak of 172 Aug 21st. First young of the year seen Breydon Aug 1st. Other peak counts include 5 Breydon May 1st, 6 Cley May 2nd, 20 Cley July 11th/13th, 15 Titchwell Aug 28th, 10 Cley Sept 30th and 5 Cley Oct 9th.

Redshank: Major Wash counts at Snettisham 1,515 Feb and 2,728 Oct.

Marsh Sandpiper: A summer plumaged adult at Cley July 11th-13th (MF BB *et al*). The third county record.

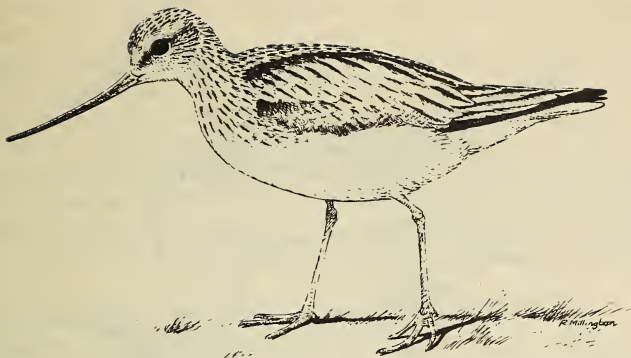
Greenshank: Singles recorded both winters at Cley and Holme/Thornham/Titchwell. Light spring passage from March 18th (Snettisham) and 28th (Titchwell-2).

Strong autumn passage with largest counts being 41 Snettisham July 21st, 17 Brancaster flying west Aug 1st, 7 Stiffkey Aug 7th, 6 Bawburgh/Colney and 29 Breydon Aug 8th, 50 Snettisham Aug 19th, 18 Cley Aug 21st, 8 Lynn Point, 18 Holme, 30 Brancaster and 11 Wells all Sept 6th, 17 Holme Sept 11th and 25 Titchwell Oct 6th.

Green Sandpiper: Recorded in first winter period at Carbrooke, Pott Row, Leziate and Tottenhill while only at Marham Fen and Lynn Point in second winter period. Maximum autumn counts of 6 King's Lynn BF Aug 3rd, 18 Pentney Aug 6th, 10 Colney/Bawburgh GP Aug 8th and 25 Cley Sept 11th.

Wood Sandpiper: Stronger spring passage than usual with records from Cley May 12th-21st, 2 Hardley Flood May 14th-20th, 3 Hickling May 16th, King's Lynn BF May 28th, Lyng Easthaugh May 31st and Salthouse June 8th.

Autumn passage from July 5th (King's Lynn BF) to Sept 16th (Titchwell) with an unusually late bird Salthouse Oct 30th. Recorded from the following sites with peak counts in brackets: Cantley (4), Hickling (4), Cley (4), Burnham Overy (1), Titchwell (12), Snettisham (1), King's Lynn BF (3) and Pentney (6).



Terek Sandpiper: One in Cley/Salthouse area May 18th-20th (JMcL JO'S *et al*) was the fourth county record.

Common Sandpiper: No early spring dates reported though a concentration of 8 Tottenhill GP May 13th. Autumn parties included 10 King's Lynn BF Aug and 15 Pentney Aug 8th. A late individual Snettisham Nov 28th. Single autumn birds at Horsey and Cantley remained until year-end.

Turnstone: Wash counts from Snettisham include 500 Jan and 240 Dec. Also up to 150/200 Brancaster Staithe in winter.

Red-necked Phalarope: A disappointing year, single flying west at Sheringham May 3rd being the only record.

Grey Phalarope: A poor year, only reported from Thorpe Mere in Brecks Nov 13th, Cley Nov 24th and Mundesley Dec 8th.

Pomarine Skua: Lynn Point: 17 Oct 7th and 5 Oct 14th; Hunstanton: Oct 6th, 13 Oct 12th, 3 Oct 14th, Oct 15th and 5 Nov 15th; Holme: Sept 6th and 22nd and Oct 8th; Titchwell Dec 6th; Blakeney Point Sept 6th and 3 Oct 6th; Cley: 2 Sept 5th, Sept 7th, Sept 9th, Sept 11th, Sept 20th, 4 Sept 21st, 3 Oct 6th and 2 Oct 7th; Sheringham Aug 31st, 2 Oct 7th, 20 Oct 13th and 21 Oct 14th; Paston: Oct 3rd, 2 Oct 23rd, Nov 7th and Dec 26th; Horsey: 5 Oct 7th and 1 Oct 15th.

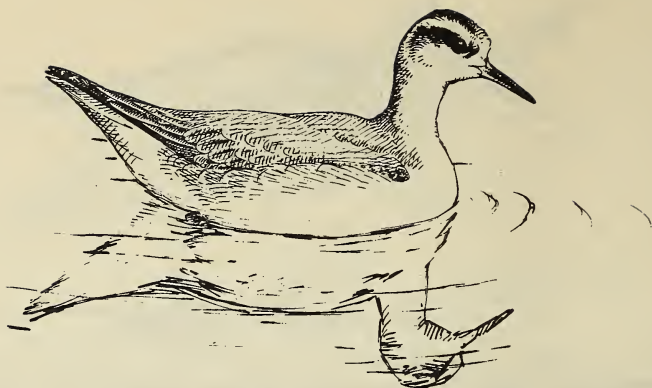
Arctic Skua: Single Jan record: Sheringham on 6th and single in spring: Scolt Head May 20th. Autumn movement from July 19th with singles to mid-Dec: Lynn Point 33 Sept 6th, 183 Oct 7th including 120 flying up river Ouse; Hunstanton 70 Aug 31st; Holme 66 Aug 31st, 56 Sept 6th, 40 on 11th and 70 on 22nd; Cley/Salthouse 60 Oct 6th; Sheringham 45 Sept 6th, 200 east Oct 7th and further 200 east in two hours Oct 13th; Mundesley 47 Oct 14th; and Horsey 92 Oct 7th.

Away from coast Breydon Sept 5th.

Long-tailed Skua: Titchwell immature Aug 21st (SCJ TPI), Cley Aug 23rd (JPS), Blakeney Point Sept 6th (AWS), Hunstanton chasing a short-eared owl Oct 16th (HRR) and Sheringham immature Oct 13th/14th (MPT PL).

Additional 1981 record: Paston Nov 15th (MF).

Great Skua: A Jan record: Sheringham on 6th and a spring record: Holme April 12th. In autumn from end Aug. Largest movements: Lynn Point 34 Sept 6th and 144 Oct 7th including group of 46; Hunstanton 42 Oct 14th; Holme 56 Sept 6th and 30 Oct 7th; Sheringham 30 Oct 7th and 35 Oct 14th; Horsey 102 south in 4½ hours Oct 7th. Dec records: Titchwell 2 on 6th, Holme 3 on 11th, Hunstanton 2 on 11th and Cley 2 on 11th with one on 18th.



Mediterranean Gull: A large number reported although no doubt some duplication as individuals moved around the coast. The east coast remains the most consistent area for sightings, especially Breydon where 2 (1st summer) May 15th followed by 1-6 birds between May 22nd-31st with all six together on 23rd. A juvenile was seen Aug 14th. Nearby at Yarmouth an adult Oct 15th-Nov 7th, a (1st winter) bird from Oct 23rd-Nov 6th and a (2nd winter) bird Nov 6th-28th.

Other east coast records from Overstrand adult Feb 7th, Bacton/Paston (1st winter) March 27th, 1-3 Oct 23rd-Nov 14th (two 1st winter and one 2nd winter) and Buckenham (1st winter) Nov 7th.

At Cley/Salthouse/Weybourne reported on 12 dates July 13th-Oct 10th, at least 3 individuals and probably more, but ages not given for all records submitted. Also at Snettisham (adult) April 8th, Holkham (adult) May 15th, 2 Holme (adult and 1st winter) Sept 4th and Titchwell (1st winter) Nov 7th.

Little Gull: Recorded all months including some winter records (Jan-March and Dec) from Paston. A light spring passage April/May including some adults, from Hickling, Lynn Point, Snettisham and Titchwell where max 25 May 15th.

Summering immatures reported June/July from Hickling (6), Cley (5), Titchwell (17), Holme (6), Snettisham (3) and Lynn Point (4). First sooty mantled juveniles arrived Breydon Aug 8th and Lynn Point Aug 23rd.

Widespread autumn sea passage usually associated with strong winds from north or east. Max counts from selected areas include Holme 10 Sept 6th, Holme 17 and Cley 40 Oct 6th, Salthouse 50 Oct 6th/7th, Lynn Point 22 and Sheringham 25 Oct 7th, Holme 35 Nov 6th, Paston 25 Nov 7th, Titchwell 61, Sheringham 24 and Lynn Point 12 all Nov 9th, Titchwell 50 and Horsey 81 Nov 13th and Hunstanton 44 Nov 15th. Obviously some duplication of records as birds travel along coast.

Sabine's Gull: Spring adult in full plumage Yarmouth April 15th (PRA), Cley/Blakeney Aug 10th (BCF), Sept 6th (AWS JR), 2 Sept 11th (JG NK) and 1 Sept 13th (RM). Hunstanton Oct 14th — juvenile with oil on belly landed on beach (JBK).

Black-headed Gull: Only breeding reports received: 100 pairs Scolt head and 347 pairs Snettisham. 18,000 Lynn Point Oct 4th flew inland up River Ouse at dawn.

Lesser Black-backed Gull: Bred at Titchwell (1 pair) and Blakeney Point (8 pairs). Concentrations of 260 Hickling June 17th, 97 Filby Broad Aug 29th with 106 Dec 11th same place and 30 Beetley tip Dec 16th.

Herring Gull: Six pairs bred Blakeney Point.

Iceland Gull: Remains very scarce. Single Paston April 18th (MF) and Holme April 19th (HBO).

Glaucous Gull: Widespread in small numbers, both winter periods, with late individuals at Snettisham and Titchwell (May 29th) and Holme (June 13th). First return migrant Holme (Aug 31st). Reported from Breydon, Winterton, Waxham, Paston, Bacton, Mundesley, Cley, Blakeney Point, Morston, Holkham, Titchwell, Holme and Hunstanton. Max counts 3 Hunstanton Jan 11th and 3 Mundesley-Paston Nov 21st. Inland birds at Beetley tip Feb 11th and Welney (no date).

Kittiwake: At Hunstanton 1,750 flew into the Wash Nov 15th in northerly gale. On south Wash at Lynn Point 126 Oct 7th some flying off inland up River Ouse in northerly gale.

Gull-billed Tern: Single at Mundesley Aug 15th (MF KB).

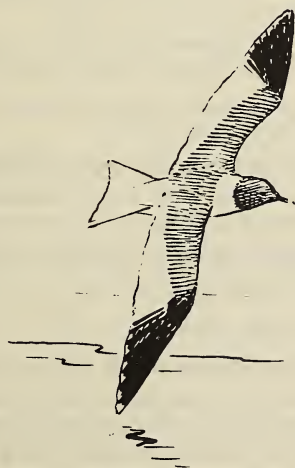
Sandwich Tern: Earliest Mundesley March 13th though general arrival from March 23rd (Cley and Blakeney Point) and March 26th (Scolt). Late birds at Holme Nov 6th, Cley Nov 7th, Titchwell Nov 15th and Bacton Dec 3rd.

Blakeney Point 3,200 pairs reared over 2,000 chicks while at Scolt Head 250 pairs reared 200 young.

Roseate Tern: Fairly typical series of records with 1-2 Scolt Head June 1st-4th (NCC), Sheringham June 26th (MPT), Cley July 3rd (JBK NW) and a late bird Holme Sept 6th (CAEK).

Common Tern: First Blakeney Point April 3rd and Snettisham on 14th. Late dates include Lynn Point Nov 7th, Wells Nov 10th and Dec 6th and Holkham Nov 14th.

Breeding pairs reported from Breydon (36), Cley (15), Blakeney Point (260), Scolt Head (160), Titchwell (135), Snettisham (64), Hoveton Great Broad (5), Hardley Flood (39), Hickling (16), Crome's Broad (1), Martham Broad (1), Ormesby Broad (6), Ranworth Broad (35), Blickling (2), Colney GP (1) and Pensthorpe GP (1). A county total of 777 pairs.



Arctic Tern: Light spring passage with 16 flying north Lynn Point April 26th, 4 Titchwell April 28th and 1 May 29th and 2 Breydon May 24th. Blakeney Point, 2 pairs, one seen feeding chicks; Scolt Head one unsuccessful pair. Three at Titchwell July 28th could well have been prospecting this increasing tern colony.

A protracted autumn passage though numbers generally small. At Snettisham 17 Aug 30th, 8 Sept 1st and 10 Oct 8th. Regular at Lynn Point Sept/Oct, mostly juveniles, max 6 Oct 7th. Frequent at Cley, max 6 Aug 28th and Oct 7th with other sightings from Holme, Titchwell, Sheringham and Breydon. Nov birds at Titchwell 3rd and 5th; Holme 5th/6th and 2 Lynn Point 7th.

Little Tern: First recorded April 12th (Blakeney Point) with latest date Sept 29th (Holme).

Breeding records from Yarmouth/Caister (9), Winterton/Horsey (10), Hickling (8), Blakeney Point (110), Bob Hall Sand (40), Overy Staithe/Wells (53), Scolt Head (70), Brancaster (17), Titchwell (67) and Thornham (25). A county total of 409 pairs. None bred Stiffkey due to disturbance by motor-cycles.

Concentration of 70 Ouse Mouth July 12th sheltering from strong northerly wind.

Black Tern: No early dates reported. A light spring passage peaking between May 11th-15th; largest counts were 15 Titchwell, 13 Hickling, 11 Cley, 10 Snettisham, 6 Filby, 5 Colney but also records from Hardley, Rockland, Ranworth, Pentney, King's Lynn BF and Lynn Point.

A protracted autumn passage, numbers usually small, between July 4th (Titchwell) and Nov 8th (Titchwell). An influx occurred late Sept when 14 Cley 20th, 30 Lynn Point 25th/26th and 10 Cley 26th. Also reported from Yarmouth 11 Sept 6th, Breydon, Hickling, Ranworth, Paston, Holkham and Holme.

White-winged Black Tern: Single at Cley July 13th (BB WFB BCF).

Black Guillemot: Cley Jan 26th, Feb 10th, 22nd and 25th, March 7th and 12th, May 4th-9th, Aug 3rd-31st, Sept 21st-26th, Oct 4th/5th, 9th and 21st; Sheringham March 23rd and April 24th; Paston Sept 18th.

Little Auk: Cley Jan 17th and 27th, Holme dead Jan 30th, Scolt Head dead March 2nd, Sheringham April 13th and Holme Oct 23rd.

Puffin: Five observations: Sheringham Aug 25th, Blakeney Point (2) Sept 2nd, Blakeney Point Sept 11th, Sheringham Oct 14th and Hunstanton Oct 15th.

Collared Dove: Among largest counts Egmore Airfield 150 Jan 14th, King's Lynn Docks 190 April 18th and Welney 100 in Nov.

Turtle Dove: During May westerly movements recorded as follows: Holme 200 on 16th, Titchwell 500 and Cley 700 on 19th when 'hundreds' passing Snettisham and Holme 200 on 29th. Late birds at Brancaster (2) Oct 6th and Ormesby on 16th.

Ring-necked Parakeet: Singles in Norwich and East Tuddenham.

Cuckoo: An early arrival Scratby April 7th (SB).

Barn Owl: Recorded at over 100 localities.

Little Owl: Recorded at 50 localities including 5 breeding sites.

Long-eared Owl: Partial breeding season survey when located at 13 sites with minimum of 29 young (JBK); also bred Fritton. Spring migrants: Lynn Point April 12th, Weybourne May 7th and Winterton March 21st and 27th.

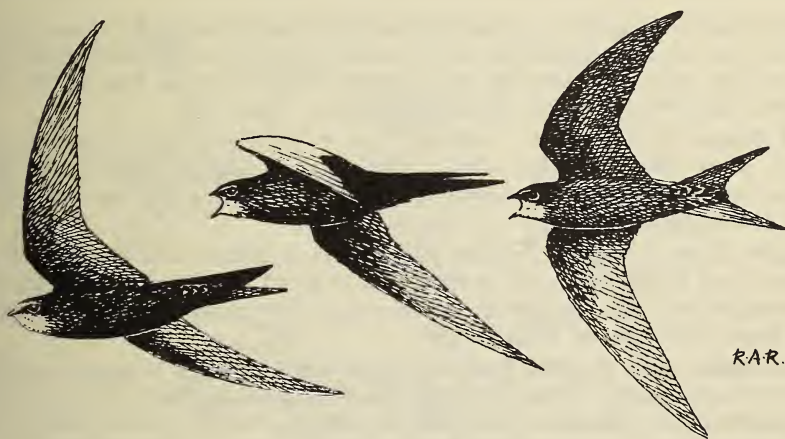
Autumn migrants: Holme early one Aug 10th, 2 Oct 7th and singles Oct 8th, 9th and Nov 24th; Blakeney Point Oct 6th off sea; Paston in off sea Oct 9th; Snettisham Oct 24th and Waxham Oct 29th. 1-4 wintering birds at four sites in NW Norfolk.

Short-eared Owl: Bred Snettisham and almost certainly at Scolt Head; also a pair displaying Titchwell mid-April. Migrants in off sea at Titchwell Sept 26th, Sheringham Oct 4th, Blakeney Point Oct 6th (2), Hunstanton Oct 6th/7th and Titchwell Oct 7th.

No large winter concentrations but Holme 8, Massingham Heath 8, Snettisham/Wolferton 5, Overly Staithe 5 and Burnham Norton 6.

Nightjar: Away from regular breeding sites in West Norfolk only noted at Fritton, Winterton, Weybourne and Kelling and Salthouse Heaths (see 1981 Report for notes of detailed 1981 B.T.O. Survey).

Swift: A major movement of 2,000 westwards Titchwell May 3rd and a mid-summer movement of 'thousands' at Wolferton/Snettisham June 23rd. Many late birds in October with single still at Titchwell Nov 5th and Reepham Nov 11th.



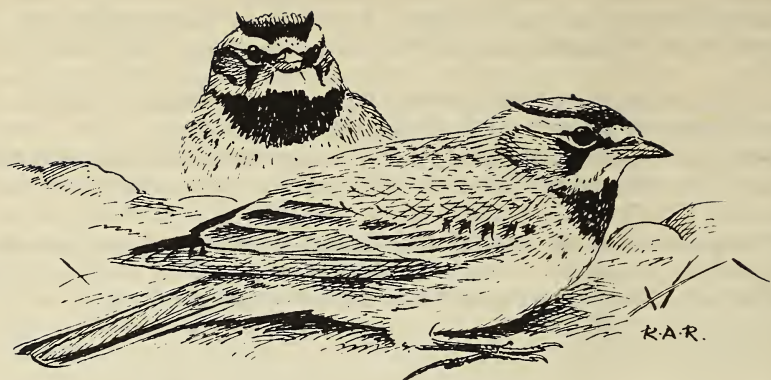
Bee-eater: A previously unpublished record of an individual at Cley July 20th 1974 (SKW).

Roller: A similarly unpublished record of one found dead at Little Melton Sept 24th 1973, the specimen now being at Norwich Castle Museum (EGG).

Hoopoe: Singles at Caister May 2nd, Titchwell May 15th/16th, Brancaster May 16th and Wells/Holkham Oct 7th--17th.

Wryneck: In spring singles at Holme April 24th/25th, Weybourne May 7th/8th, Roydon Common (dead) May 9th, Holkham May 11th, Foulton Common May 11th-23rd and Cley June 2nd. Only a small number of autumn migrants: Hockering (dead) Aug 1st, Holme and Blakeney Point Sept 5th, Winterton Sept 7th, Holme Sept 17th/18th, 2 Sheringham/Weybourne Oct 12th and Rackheath Oct 13th.

Woodlark: Majority of records from Brecks especially at Grime's Graves and Santon Downham, with up to 8 at latter locality in May and August. Only one migrant record, Holme April 5th.



Shore Lark: Only regularly recorded between Blakeney Point and Salthouse with up to 24 in first winter period and up to 12 in second winter period. Elsewhere Breydon Jan 1st-13th, Winterton Dec 6th, Horsey May 16th-19th, 2 East Runton Oct 18th, Titchwell May 9th and 5 Nov 6th and Holme Oct 28th.

Sand Martin: Earliest record 5 Helledon March 20th. Breeding colonies included 1,000 pairs Blackborough End, 580 pairs Tottenhill and 313 pairs Buckenham/Strumpshaw. A complete albino Cley July 13th. At least 6 still along cliffs at Sheringham Nov 7th.

Swallow: Early arrivals at Ormesby March 27th and Ranworth March 29th. At Holme about 10,000 roosting in reedbed Sept 25th had all left before dawn the next morning. Many birds remained in various parts of the county well into November with latest at Paston and Wells on 29th.

House Martin: First recorded Rockland Broad April 5th when 14 present, an early date for such numbers. Total of 150 nests Saddlebow Bridge near King's Lynn B.F. A complete albino East Runton Oct 18th. As with Swallow many birds remained well into November at a variety of inland and coastal localities. At Whitlingham 15 still present Nov 22nd reducing to a single bird Dec 2nd. Also one Wells Dec 7th.

Richard's Pipit: Coastal records as follows: Winterton Oct 7th, Horsey/Waxham Oct 15th, Oct 24th, 2 Oct 30th, Oct 31st and Nov 6th, East Runton Oct 18th-Nov 29th with another Nov 27th/28th, one of the two birds appearing at Cromer Nov 29th, Sheringham Oct 12th and 23rd, Morston Oct 3rd and Holme Sept 29th.

Additional 1981 record: Winterton Nov 9th.

Red-throated Pipit: Cley May 18th/19th (JBK *et al*).

Rock Pipit: Birds showing characteristics of Scandinavian race at Breydon March 11th, up to 3 Horsey March 20th-27th, 3 Titchwell March 20th, 2 on 21st with one remaining until April 12th. First recorded in autumn Titchwell Sept 18th.

Water Pipit: Records from Weybourne Jan 19th, Martham Broad Feb 21st, 5 Cantley BF March 6th reducing to 3 April 17th, 2 Cley March 20th, Titchwell March 25th, Horsey Oct 14th, Nov 27th and Dec 15th, Salthouse Oct 27th and Dec 30th, Wells Dec 14th-30th and Buckenham Dec 30th. Also singles on 7 dates at Hickling during the year with 2 Nov 4th. (NB: Observers are requested to carefully examine all records of this sub-species especially in the spring as individuals can closely resemble birds of the Scandinavian race '*littoralis*').

Yellow Wagtail: First recorded at Wolferton and Titchwell April 5th. Up to 200 at the regular Stow Bridge roost mid August — early September. Extremely late birds at Winterton Nov 28th and Narborough Dec 23rd.

Blue-headed Wagtail: Spring records as follows: Welney April 15th, Brancaster April 19th, 3 Horsey April 24th, May 3rd, 3 May 19th and one May 22nd, Cley May 1st, 2 May 2nd, then singles May 3rd, 4th and 13th, Holkham May 2nd, 2 Winterton May 4th and one May 8th, Salthouse Heath May 5th, Salthouse May 8th, Hap-pisburgh May 14th and 17th, Paston May 30th and Hardley June 6th.

Grey-headed Wagtail: Cley May 13th with two present May 15th; also two Salthouse May 15th.

Grey Wagtail: Breeding season records at Marlingford, Bawburgh, Costessey and Narford. Only confirmed breeding from 4 sites: River Nar; Little Ouse (Brandon Stauch); Wissey (Ickburgh) and Yare (Keswick).

Pied Wagtail: 250 at the Bacton Gas site roost Nov 1st and Dec 1st.

White Wagtail: Concentrations of 7 at Cley April 24th and 16 Hickling April 25th.



Waxwing: Singles at Titchwell Nov 21st and Yarmouth Dec 12th with 6 at Burgh Castle on latter date.

Black-bellied Dipper: The 1981 individual remained at Bawburgh Mill until March 3rd: presumably the same bird at Honingham Feb 3rd and 21st.

Nightingale: Only one record of an obvious coastal migrant: Lynn Point Aug 15th.

Black Redstart: Wintering birds at Yarmouth Jan 3rd and Dec 23rd, Gorleston Dec 17th and Cantley BF Dec 22nd-31st. Passage migrants, with spring records predominating, March 19th-May 19th, Aug 1st-4th and Sept 23rd-Nov 14th. Up to 9 singing birds (4 adult males) in breeding season at Yarmouth and one at Norwich.

Redstart: Breeding confirmed at Sandringham, Santon Downham and Holkham Park. Singing males in breeding season also at Beechamwell Warren, Wootton Woods, Sheringham and Felbrigg. A late migrant at Wells Oct 29th.

Whinchat: Present in breeding season at West Tofts, Tottington, Bridgham, Weeting and Stanford. Late migrants at Paston Oct 31st, Cley Nov 15th and Holkham Nov 29th.

Stonechat: A pair successfully fledged 3 young at Weybourne; also 4 pairs Winterton — Horsey.

Wheatear: An interesting concentration of at least 75 birds on a burnt area of Salthouse Heath May 5th. Four young successfully reared at a new breeding site at Bacton. At least 6 birds still present early November, the latest at Titchwell on 9th.

Ring Ouzel: Three early migrants Wolferton/Snettisham March 11th. A widespread spring passage March 19th-May 25th with maximum of 6 Snettisham April 6th and 5 Paston April 9th-12th. Only a small autumn passage compared with spring with total of 10 migrants Sept 25th-Oct 24th including 4 Wells Oct 11th.



Fieldfare: Late May records from Bacton on 22nd and Kelling on 25th. First autumn arrivals Sept 6th at Blakeney Point and Wells, but main arrival not until Oct.

Redwing: Hundreds of birds dead at Scolt Head in mid-January as a result of cold weather. Late spring migrants still present at Bunwell May 7th-12th and Yarmouth May 14th.

Mistle Thrush: A large flock of 70 at Lynford July 23rd.

Cetti's Warbler: Singing males at Barnham Broom (a new locality), Buckenham Carrs (2), Hassingham (2), Hickling (2), near Martham Broad, Ranworth (March only), Rockland (3), Strumpshaw area (12-14) and Wayford Bridge. Also singles at UEA Broad March 2nd and Titchwell (singing) Oct 21st.

Savi's Warbler: At Hickling 4 singing males in April and 6 pairs probably nested. Also singing males at Filby Broad May 3rd and at Martham Broad and Horsey in June.

Reed Warbler: A late bird at Titchwell Nov 13th.

Icterine Warbler: A scarce migrant in 1982 with two on Blakeney Point Sept 5th and one at Waxham Sept 12th.

Barred Warbler: Coastal migrants as follows: Caister Sept 11th, Waxham Sept 5th, 12th/13th, Oct 3rd and Oct 11th-13th, Cley a well-watched individual Sept 8th-14th, Blakeney Point Sept 10th, Holkham Oct 11th, Holme Sept 2nd and 8th/9th and Hunstanton Oct 11th.



Broadland Herons are declining rapidly and a full survey has been organised for 1983. (Photo: R. Jones).



These comparative studies of medium-sized deer illustrate the feature article and classified notes. The Roe Deer buck (above) in Thetford Chase was photographed by P. Richards. The smaller Chinese Water Deer in typical wetland habitat at How Hill by P. D. Lee.



Lesser Whitethroat: Late migrants at Wells Oct 11th, Horsey Oct 15th and Paston Oct 28th.

Garden Warbler: A large influx at Wells/Holkham Oct 6th/7th, together with Blackcaps with several loose 'flocks' of 10-15 birds of both species as well as many individuals and smaller groups.

Blackcap: A 'fall' of at least 60 Blakeney Point Oct 6th and many more at Wells/Holkham Oct 6th/7th (also see Garden Warbler above). Wintering birds at Rockland Jan 3rd-6th, West Somerton Feb 14th, Thetford Jan-Feb and in December singles at West Walton, Brancaster Staithe and Morston with 5 at Holme throughout the month.

Pallas's Warbler: In 1981 there was an unprecedented number of records of at least 8 birds, but this total was easily surpassed in 1982. At Wells/Holkham at least 14 birds present, the first individual being seen Oct 7th, 2 on 8th with 4/5 on 9th and 4 on 10th/11th. A further influx took place on 15th with 9/10 birds present, 6 remaining on 17th (when several singing) and 2 on 18th. At Holme a single was present Oct 9th-11th with two new arrivals Oct 15th-17th. At Weybourne one Oct 10th.

Yellow-browed Warbler: At least 7 individuals seen in October — Yarmouth 12th/13th, Sheringham 10th-15th (trapped), Blakeney Point 6th, Blakeney Village 10th, Stiffkey 16th and Wells/Holkham most days 8th-23rd (at least 2 birds involved, one recorded singing).

Radde's Warbler: Singles at Wells Oct 9th-11th (GDE, TPI, CS *et al*) and another Holkham Nov 1st-6th (JPK *et al*). The eight and ninth county records.

Dusky Warbler: Singles trapped at Sheringham Oct 10th (re-trapped 11th) (MPT) and Happisburgh Nov 3rd (BMEU). The ninth and tenth county records.

Bonelli's Warbler: Wells Sept 12th/13th (GED *et al*). Only the fifth county record.

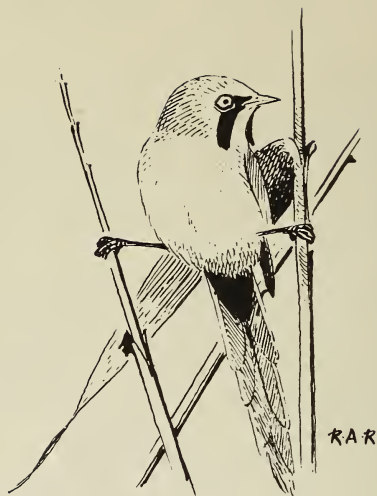
Wood Warbler: Coastal spring migrants Blakeney Point May 10th and Holme May 14th/15th. Singing males in May at Fritton (Waveney Forest) (3), North Walsham, Sheringham Hall (2), West Runton-Aylmerton (3), Kelling (4), Buckenham, Bridgham Lane, Roydon Common, Sandringham, Swaffham Forest and Narborough. Breeding only proved at Fritton where two nests located in June, one successful. Also one at East Wretham for 10 days in June and one Barnham Broom July 31st. No records received of any autumn migrants.

Chiffchaff: No records received of any wintering birds. Extreme dates March 15th (Holme) and Nov 24th (Holkham). In October many small grey '*tristis*' type birds appeared on the north and east coasts including at least 20 Holkham on 15th.

Willow Warbler: In October several large grey birds of the northern race were recorded with singles at Horsey on 10th and Holkham on 15th and up to 3 at Yarmouth 12th-14th. A very late individual trapped at Holme Nov 5th.

Firecrest: Spring migrants at Paston April 2nd, Sheringham (2 trapped) April 15th, Cley April 25th and May 7th, Wells/Holkham 1/2 on many dates March 26th-May 15th, Holme April 3rd, 2 on April 9th and singles 10th/11th and West Walton April 5th. At Sheringham Hall on May 31st a male paired with a female Goldcrest, the female watched carrying material on several occasions to the same spot at the top of an isolated larch, either accompanied by the male Firecrest or whilst the male was singing from a nearby tree. Unfortunately neither bird was present a week later. In autumn an early migrant Holme Aug 27th/28th. Subsequently singles at Lound Oct 6th, Wells/Holkham Oct 7th/8th and 30th, Sheringham Oct 16th, Scratby Nov 7th, Waxham Nov 13th and Ridlington Nov 14th.

Spotted Flycatcher: Latest records from Holkham Oct 11th and Yarmouth Oct 13th.



Red-breasted Flycatcher: In autumn singles at Blakeney Point Oct 6th, Caister Oct 7th and Wells Oct 8th/9th with probably another individual Oct 15th.

Pied Flycatcher: Only three spring records received: Titchwell May 10th/11th, Blakeney Point May 12th and Yarmouth May 14th. In autumn no major 'falls' of migrants; the latest at Holkham Oct 17th.

Bearded Tit: Breeding records (in pairs) include Belton marshes (1), Fritton marshes (4), Haddiscoe Island (5), Wheatacre marshes (1), Horsey (6), Hickling (102), Overy Staithe, Burnham Norton (few) and at a W. Norfolk site where 3 pairs reared 20 young (some double brooded). Irruptive behaviour noted on north coast in autumn with birds moving eastwards Brancaster Staithe Sept 25th, at Wells 15 Oct 11th and 12 Oct 19th and Heacham 9 Oct 29th. Movements most noticeable at Holme with 3 flying high towards Hunstanton Sept 30th and 5 settled briefly on dead pine Oct 1st; also there 28 Oct 3rd, 35 12th, 8 24th, 12 25th, 18 28th, 4 30th, 9 Nov 4th and 6 13th. At Strumpshaw maximum of 50 Jan-Feb, but none bred and up to 100 Nov-Dec. Elsewhere 4 Breydon Oct 24th, 5 UEA Broad Dec 17th, and at nearby Earlham marshes flock (21 ringed) end Dec.

Golden Oriole: Only two records of spring migrant males, Holme May 16th and Winterton May 28th.

Red-backed Shrike: One spring migrant Weybourne May 15th. Only recorded breeding in Brecks where birds continue to suffer disturbance by birdwatchers and more seriously by egg collectors. In autumn singles Winterton Aug 8th, Costessey Sept 9th-13th, Waxham Sept 12th and 19th and Cley Oct 1st.

Lesser Grey Shrike: One at Ringstead May 24th (NB, JBK).

Great Grey Shrike: In period January-March regularly recorded at Strumpshaw and Roydon Common with other records from Bodney, Brandon, Fakenham, Foulden, Gooderstone, Great Melton, Grime's Graves, Hempton, Horning, Rockland, Santon Downham, Sculthorpe, Thompson Fen and Worstead. A 'grey' shrike which appeared at Toftwood, East Dereham Aug 23rd caused considerable controversy at the time — it was subsequently found dead at the end of the year and the specimen identified by the B.T.O. and British Museum as a Great Grey Shrike of the Indian race,

presumably an escape especially due to it's relative tameness and unusual habitat in a primarily built-up area. Autumn migrants arrived at Holkham (3), Burnham Market, Brancaster, Holme and Snettisham Oct 10th-18th. Wintering individuals then only seen at Snettisham Nov 9th and in Dec and at Pentney Dec 20th.

Magpie: Maximum of 37 at Roydon Common roost Feb 7th.

Rook: Estimated counts of 7,500 at Tottenhill Feb 1st and 10,000 mixed Rooks/Jackdaws flying into roost from the south at Buckenham Jan 9th.

Carrion Crow: Maximum of 280 at Roydon Common roost Feb 25th.

Hooded Crow: As in 1981 only regularly recorded in first winter period at the Roydon Common roost where maximum of 8 Feb 6th. During this period also isolated records of 1-3 birds from 12 other localities. Usual small scale movement of passage migrants on north and east coasts April-May with maxima of 5 at Paston and Winterton April 3rd. A pair, one with a damaged wing, bred at Waxham and successfully reared one young. In second winter period records from 8 localities but only regularly seen at Breydon (1-2) and Winterton/Waxham area (up to 3).

Rose-coloured Starling: Adults at Old Hunstanton May 22nd (VE) and Little Walsingham June 24th (JBK), the latter bird having been present since at least the 17th.

Tree Sparrow: Largest flock submitted 350-400 Thornham in Jan.

Serin: A male at Holkham April 24th (SCJ).

Siskin: Apart from unprecedented numbers in NARVOS area (see separate report) and Brecks where 'hundreds' also seen in March and where breeding also took place, up to 120 at Fritton Feb, 150 UEA March and 100 at Strumpshaw Jan-March. Only very small numbers reported Oct-Dec.

Twite: 800-1,000 in Scolt Head area in winter months. Elsewhere flocks of 140 Wells and 300 Holme in Jan, 250 Blakeney Point March, 2-300 Stiffkey Oct, 400 Titchwell Nov and 130-140 Warham Dec. A single inland at Massingham Feb 12th and also 32 Hickling Feb 24th. No records between April 12th (Lynn Point) and Sept 30th (Holme).

Mealy Redpoll: Only a small number of records received: two Winterton Feb 16th, 6 Lenwade Feb 20th with one Nov 13th and Wells March 13th with 7 there March 20th.

Crossbill: Breeding noted at Wells/Holkham, Swaffham Forest, Sandringham and various Breck localities. Elsewhere 2 Titchwell May 17th and an influx in Oct with 2-3 Lound on 6th, up to 9 Wells/Holkham 15th-23rd (including several large-billed individuals, at least one of which is still under consideration by British Birds Rarities Committee as a Parrot Crossbill), 5 Sheringham 17th and one west Titchwell on 18th. Also 11 Fritton Nov 22nd.

Hawfinch: Only regularly recorded at East Wretham where at least 3 pairs bred, and maximum of 15 Feb 18th, and Weybourne where an individual remained Feb 25th-May 28th. Elsewhere isolated records of 1-3 birds from a variety of scattered localities including Brandon Pava, Castle Acre, Colton, Eaton, East Tuddenham, Grimston, Keswick, Lexham, Massingham Heath, Santon Downham, Swaffham Forest, Thetford Warren and Watton.

Lapland Bunting: In first winter period only regularly recorded at Burnham Norton where maximum of 100-120 Feb 1st. Elsewhere, occasional records from Winterton, Lower Bure marshes, Cley (up to 10), Salthouse (up to 6), Morston (up to 20), Stiffkey and Wells. Several late spring migrants including males in summer plumage at Sheringham (2) April 15th and another May 14th, Cley April 16th, Salthouse April

17th/18th, Brancaster GC April 19th and Horsey May 9th. In second winter period up to 20 at Burnham Norton; elsewhere isolated records of 1-3 birds at various coastal localities from Oct 11th and one Hickling Nov 13th.

Snow Bunting: Along north coast flocks of up to 200 Holme Jan and Nov-Dec, 120 Burnham Overy Staithe Dec and at least 200 Blakeney Point/Cley Jan-March and 250 Oct. Late spring migrants at Holme (2) May 2nd and Scolt Head May 4th. In-land records at West Acre (6) in Oct and Roydon Common Nov 13th.

Little Bunting: One trapped at Sheringham Oct 11th (MPT). Additional 1981 record: Holkham Oct 18th (JPG RMOC JPS *et al*).

Red-headed Bunting: Singles Holme May 18th-22nd and Titchwell May 27th. Whilst this species is not on the formal British list (ie only Category 'D') the Local Records Committee consider such records should be published for possible future reference.

Corn Bunting: Flocks of 100 Burnham Norton and 50 Lynn Point in Jan and 60 West Walton in March.



The following, not mentioned in the Classified Notes, were recorded in 1982 (breeding species in *italics*): Mute Swan, Canada Goose, Egyptian Goose, Mallard, Red-legged Partridge, Grey Partridge, Pheasant, Moorhen, Coot, Lapwing, Common Gull, Great Black-backed Gull, Guillemot, Razorbill, Stock Dove, Woodpigeon, Tawny Owl, Kingfisher, Green Woodpecker, Great Spotted Woodpecker, Lesser Spotted Woodpecker, Skylark, Tree Pipit, Meadow Pipit, Wren, Dunnock, Robin, Blackbird, Song Thrush, Sedge Warbler, Whitethroat, Goldcrest, Long-tailed Tit, Marsh Tit, Willow Tit, Coal Tit, Blue Tit, Great Tit, Nuthatch, Treecreeper, Jay, Jackdaw, Starling, House Sparrow, Chaffinch, Brambling, Greenfinch, Goldfinch, Linnet, Redpoll, Bullfinch and Reed Bunting.

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THE NORFOLK MAMMAL REPORT 1982

Editorial

The Editor is pleased to present the 27th Norfolk Mammal Report.

During these 27 editions the report has grown from its modest beginnings on sheets of duplicated typescript asking questions rather than providing answers. Much information has been gathered in and included in the annual reports yet some of those original queries have yet to be answered. Species have changed in status and the habitat itself, the county of Norfolk, is not as it was when the original team launched this work. The peak years, from the publishing point of view, was in the early 1970's when the combined Bird and Mammal Reports made a document of 64 pages. Financial pressures subsequently reduced the size but we trust its essence has been concentrated and distilled rather than being squeezed out.

A great deal of work is involved in compiling such a report but its annual deadline is a spur to those involved in collating the information and has a most important role in keeping the record really up to date. Its production is an achievement for those concerned and an encouragement for all involved in all parts of the county, and beyond, who are feeding in the facts on which it is based. We hope that those who were part of this funnel of information through their membership of The Norfolk Naturalists Trust will continue to supply data and receive their copy of the report through other channels.

The importance of this annual undertaking is touched upon by Dr. Jonathan Reynolds in a letter to the Editor in which he remarks that Norfolk has a unique record in its documentation of the rise and decline of the Grey and Red Squirrel populations. We are most fortunate to have the kind co-operation of our friends at the Coypu Research Laboratories and have been able to publish annual instalments of a most accurate account of the fortunes of this mammal invader. These two examples are demonstrations of what can be done and what we would like to see done for each mammal species given the necessary number of eyes and notebooks. The two are essential parts of the process. We are constantly striving to open peoples eyes to what is about them and take pleasure in seeing, but what is seen should be recorded and passed on. Gaps in our knowledge still loom large. A few of the questions in those early papers have been answered but it is in the nature of things that as more is discovered and documented so more queries are raised. A point that cannot be restated too often is that commonplace of today may be the rarity of tomorrow and without proper documentation saving an endangered species can be much more difficult. Naturalists of all specialities can help each other by exchange of information. For example, sea watchers with their powerful binoculars, looking for avian migrants, can do more than mammal specialists to record seals and cetaceans. This is providing their observations are submitted! We hope to see more from this particular source of information.

In spite of being based in Denmark and working in various parts of Scandinavia, Dr. J. Reynolds is continuing his work on our squirrels. All records submitted are being passed on to him for processing. As many details as possible of all sightings of both species are required. Map references are most helpful, if not, a precise description of the locality where seen. Dr. Ian Keymer continues his line of research on the Red Squirrel and information on dead or obviously dying specimens should be phoned to him as a matter of urgency at the Veterinary Investigation Centre, Norwich, Tel: Norwich 46278 or at home, Saxthorpe 365.

The formation of a Bat Group, under the wing of the Norfolk and Norwich Naturalist's Society, marks another major step forward. Recent legislation protecting these species throws a heavy responsibility and work-load onto the few experts we have. They monitor bats' presence and step in to advise the public when this presence causes conflict of interests. These are fascinating animals and anyone wishing to join the group will be given every assistance in learning to identify the species and to study their life-styles with the hope that a pool of helpers will eventually be able to pass on their new-found knowledge to householders and others who feel they need assistance. Anyone who is interested should contact John Goldsmith, as below, for further information.

Our short article this year is by Rex Whitta, Chief Forest Ranger of Thetford Forest based at the Forestry Commission Office at Santon Downham. He describes the system employed to mark and observe the Roe Deer that are a feature of that area. Rex has spent the greatest part of his working life, day and night, in the forest and his superb knowledge of its inhabitants comes from a keen eye and interest allied to a daily involvement. His regular contributions have been acknowledged but it is a special pleasure this year to have the opportunity to thank him for his contribution to Norfolk wildlife.

Other specialist contributors include Dr. L. M. Gosling, Coypu Investigation Centre, Percy Trett, who has given information on sea mammals and John Goldsmith who is at the focal point in the Castle Museum, Norwich. All other contributors are gratefully acknowledged. We apologise for any omissions from the list of contributors at the end of the report. We also thank John Last who has provided yet more sketches to enliven our pages.

Please send notes for the 1983 Report as early as possible in the New Year preferably by the end of January 1984. They should be addressed to R. C. Hancy, 124 Fakenham Road, Taverham, Norwich NR8 6QH. If you wish to discuss any observations on mammals please ring Norwich 860042. John Goldsmith continues to answer queries on all vertebrates directed to him at the Castle Museum. His number is Norwich 611277, ext. 287.

Monitoring the Movements of Roe Deer in Thetford Forest

Rex Whitta

Thetford forest, situated on the borders of Norfolk and Suffolk, takes its name from the ancient borough of Thetford which stands at the heart of Breckland. The latter is an extensive tract (c. 1000 sq kilometres) of heath and sandy soils much of which prior to afforestation had become unstable and impoverished. About a fifth of Brecklands total expanse — generally the least stable and rabbit infested areas — was acquired for afforestation soon after the inception of the Forestry Commission in 1919. Planting began in 1922 and the bulk of the present area was afforested by 1937, mainly with Scots Pine. Today Thetford is the largest lowland forest in the country and its premier pine forest. It is the most mature of the forests raised by the Forestry Commission and currently contributes nearly 9% of the Commission's total out-turn of useable wood.

Rainfall is low, averaging 600mm a year, and continental influences pertain in varying degree. Frost, a marked factor, has been recorded in every month of the year. Wind was not accorded great significance before the gale of January 1976 which brought down over 200,000 m³ of timber.

The terrain is flatish with elevations between 3 and 55 metres. Four small rivers which flow across the area towards the Wash form shallow valleys.

A diverse wildlife has developed with the forest and arguably it is the greatest sanctuary that has existed in Breckland since Primeval times. The ranges of habitat will be extended with the felling and restocking programme and improvements will be sought in balance with the many objectives of timber production. Nature Reserves and sites of special scientific interest within the forest are protected but it is in the broad areas of the forest that wildlife populations have their greatest opportunity to thrive.

A fairly long term research project has been initiated by the Forestry Commission at Thetford Forest with the aim of obtaining information on the movements of Roe Deer and the way in which these animals use the pine forests of Thetford. In March 1974 a small area approx. 166.54 ha was netted for Roe Deer using the same method that has been successfully used by the Forestry Commission Research Team in the SW of England for a number of years, which basically consist of driving Roe from an area of thicket into 2 5m nets where they become entangled. Forestry Commission Rangers and selected men who are familiar with handling deer are placed at intervals along the whole length of the net. Rangers are equipped with talk through radios to enable them to contact the control point which is sited in the centre of the catching area. When the deer are in the net the nearest handler runs to the scene and throws the spare net over the animal and covers the beasts head with his jacket after which the deer will lay still. When help arrives only then should an attempt be made to disentangle the deer from the net. The first thing to be done is to remove the head from the net and cover the eyes and head with a dark blindfold. Next the forelegs are disentangled and tied with a strong cloth, then remove the hindlegs and tie. When both forelegs and hindlegs are tied they should then be tied together making the deer completely immobile.

Each Ranger is given a radio call sign to use to call control where two vehicles are on standby to collect any deer caught in the nets and return with the animals to the control point where at least 4 people are in attendance who will record the following details.

- | | |
|--|------------------------------------|
| 1. Weight | 6. Take temperature and pulse rate |
| 2. Sex | 7. Length of ears |
| 3. Approx. age (Kid - Young -
Mature - Old) | 8. Length of legs and body |
| 4. Time of arrival at tent | 9. Colour of collar fitted. |
| 5. Condition on arrival. | |

The collars are made of PVC plastic, 3cm wide and 3mm thick with a circumference of 42.5 cm for Bucks and 36 cm for Does.

After all the details have been recorded the Roe deer are then taken away from the control point and released in compartments well away from areas which have still to be driven by the beating party. By repeating this exercise annually it is hoped to build a population of marked animals in the study area. Follow up observations of marked animals have been plotted on 1-2500 scale maps. Totals of Roe caught since 1974 are listed below.

	Buck	Doe		Buck	Doe
1974	6	4	1978	7	13
1975	6	8	1979	7	10
1976	5	8	1980	5	8
1977	10	12	1981	6	4
			1982	3	9
			Total —	55	76

Approx. 12 beasts have been recaptured all in excellent health. Body weights have increased from the original — the weight recorded in some cases as much as 4.5 kilo to as little as 1.5 kilo.

Some incidents and accidents have taken a toll of the total number of collared animals caught.

Killed by dogs	—	6
Road accidents	—	6
Found dead	—	10
		<u>22</u>

It is possible that the total number of deaths could be higher.

The movement from the project area of collared beasts seems to be slight at the moment. One Roe buck with a red collar was seen a number of times 4 miles to the NW of the project area, since then however it has appeared again in the compartment where it was netted.



Further notes on Red & Grey Squirrel populations

Dr. J. C. Reynolds

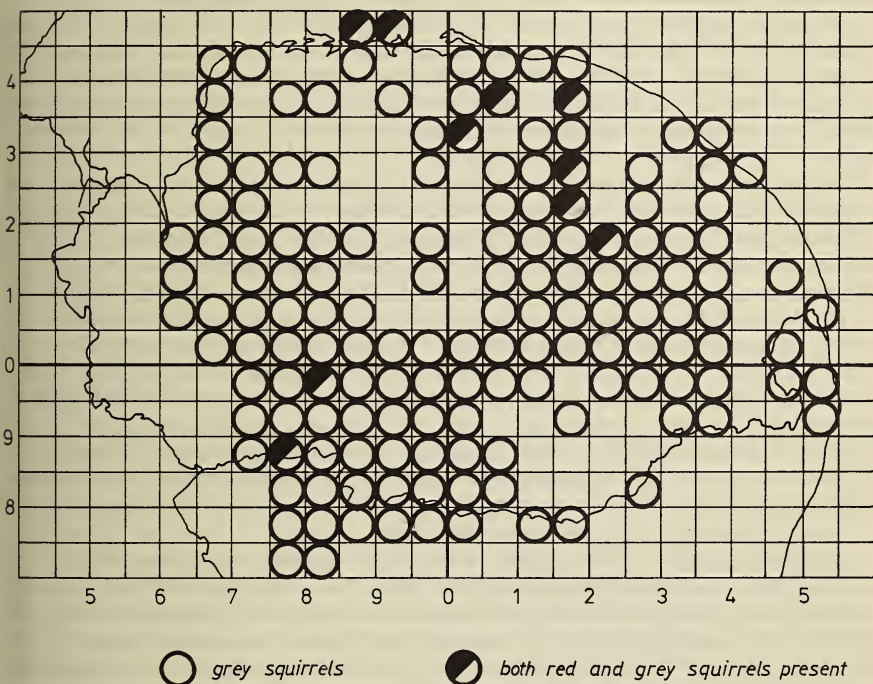
Despite the dedication of so many contributions to the *Norfolk Mammal Report*, it is no straightforward matter to establish the geographical distribution of our two squirrel species in Norfolk each year. Consider the accompanying distribution map for 1982, for example. During 1982, grey squirrels were recorded from only 58 grid squares. Two of these squares had not previously been known to hold grey squirrels, so that the range of the species seems still to be expanding slightly. On the other hand, 91 of the grid squares thought to hold grey squirrel populations in 1981 were not re-recorded in 1982. It is of course most unlikely that this really reflects a dramatic decline in the species, and more reasonable to assume that the grey squirrel is currently present in all 149 squares (as shown on the map) though we can't be certain.

With the red squirrel the matter is more difficult, since there is a very real possibility of populations disappearing from one year to the next, so that the few populations recorded in 1982 may be all that remain. However, 6 of these populations were not detected in 1981, though they *were* recorded in 1980 or 1979 and were most likely present throughout. Clearly, the level of recording activity is not as much as is desirable to produce accurate distribution maps annually.

Now of course it is the *changes* in distribution of the two species which are of particular interest, so that there is very good reason not to combine data for two or more years. Mapping the changes (retrospectively) for the period 1960-80 has already given us invaluable information on the very independent fortunes of the different isolated red squirrel populations, and on the occurrence of viral disease in these populations

relative to the range of the grey squirrel at the time. As the red squirrel populations apparently continue to dwindle and disappear the situation becomes more crucial and the information more wanting. Yet of all the remaining red squirrel areas in Britain, Norfolk has by far the best system of pooling information by means of the Mammal Report. So *please* help us to understand what is going on in the squirrel world by sending in all your sightings for 1983.

Many members may wish specially to seek out red squirrels. Those with access to the areas marked on the 1980, 81, and 82 maps can very valuably check the continued presence of the species. Except in the coldest periods of winter it is generally best to arrive in a woodland at first light, when the squirrels are moving about. Walk very slowly and quietly, don't talk, and above all *listen* for sounds of movement or feeding. But such serious behaviour may spoil a good walk for many people, and I must emphasize that we wish to hear of all your casual sightings of squirrels, both red and grey. They all help to fill in the picture.



Classified Notes

INSECTIVORA

So far as the Hedgehog (*Erinaceus europaeus*) is concerned, it was the young of the species that again took the centre of the stage. Many were born late in the season and in spite of the practical concern shown by many correspondents it was not possible for these youngsters to reach the body-weight needed for survival during the winter. This figure is considered to be in the region of 400g. Tinned dog food features high on the list of preferences of many of the autumn feeding hedgehogs of all ages.

An adult caught in a garden net in Taverham had to be disentangled and was found to be unwilling host to two engorged ticks as well as the usual infestation of fleas. An adult can carry up to 500 of the highly specific flea, *Archaeopsylla erinacei*. A youngster found in very poor condition returned to vigour after careful nurturing but subsequently lost all its spines due to a skin condition. Its hibernation was intermittent and it did not survive to spring.

Of the 35 dead hedgehogs found on the B1149 road from Holt to Norwich Airport between April 14th and November 24th, 21 were not fully grown (IJK). This contributor found 28 on other sites between March 22nd and December 20th. JEG reports 83 road traffic accidents from February 8th and going on to November 22nd. Between these two reports, only the month of January was completely clear.

The Mole (*Talpa europaea*) is now added to our list of mammals recorded as surviving passage through a potato harvester! An odd distinction and unusual in that most individuals would have been able to avoid the encounter and make their escape. One found dead at Ringland with no apparent injury was on the edge of a stubble-burned field. Is there a connection or is it co-incidence? Careful examination of such sites as soon as possible after the fires may provide some information as well as autumn exercise. Generally, there is no danger to this species which is the subject of some rather rueful reports. An itinerant recorder lists nearly 400 kilometre squares on the Ordnance Survey maps with mole hills!

Cats and Barn Owls provide most of our Shrew records, the cats because they do not eat them, and owls because they do. More Common Shrews (*Sorex araneus*) were seen in Breckland and owl pellet analysis from East Walton to Great Yarmouth provide cross-county examples of these and the Pigmy Shrew (*Sorex minutus*). Included in the list of live sightings is one from Buxton where a shrew was picked up by car headlights as it scuttled over the road. A Common Shrew at Barton Turf Fen was seen to take refuge under the log bridge that had been completed only minutes before by the Conservation Corps.

A late record from 1981 of a dead Water Shrew (*Neomys fodiens*) in Barford village proved its presence there as did the one found in King's Lynn in 1982. Hoveton Great Broad Nature Trail provided a special extra when one was observed for several minutes. Water shrews are variable in colour below. One described as black below but with white ear spots was watched for some time at Snettisham Beach. Owl pellets give us two more sites in West Norfolk at Bawsey and Hilgay.

Chiroptera

The male Whiskered bat (*Myotis mystacinus*) found in Breckland early in the year has already been reported and no others were found during the year. Natterer's bat (*Myotis nattereri*) is one of that group of mid-sized bats needing careful checking for identification so it is not surprising that our records for the year consist of hibernating individuals and two unfortunates that were found as road casualties. One of these was picked up near Holt and the other between Spixworth and Catton.

The apparent decline in the number of Noctule bats (*Nyctalus noctula*) has been a topic for discussion and is exemplified by the report that there have been no recent observations of the group previously seen regularly at Horstead. Their presence is suspected at Barnham Broome but has to be confirmed.

Many of our positive records of Long-eared bats (*Plecotus auritus*) are due to kills by cats. They come from North Runcton, Congham, Dersingham and Taverham. Another was picked up in a garden at Grimston and was later released.

An early Pipistrelle record (*Pipistrellus pipistrellus*) comes from Wells Pine Wood on March 13th. An early record and unusual in that it was made at noon, in full sun, and the bat was watched hawking for some time. It was however preceded by Pipistrelles at East Tuddenham which were seen from February 2nd through the year to late November. Summer roosts have been recorded in the same house in Mulbarton for nine successive years. During autumn they are often seen catching insects that have been attracted to the light from the lounge windows. More of these reports of summer colonies are received but this is due to increasing interest in bats in general and constant requests for information. It must be concluded that the species is declining. The formation of the Bat Group, mentioned in the Editorial, may help to collect much more detailed and up-to-date data but the Group will depend upon non-specialist readers making immediate reports that can be followed up and investigated.

Lagomorpha

The Rabbit (*Oryctolagus cuniculus*) as a species seems to have struck a balance with its previously most efficient destroyer, myxomatosis. Outbreaks in every month of the year appear to have little effect on overall numbers in the county. The decline in one area is balanced by the increase in another. Where follow-up campaigns are strictly enforced after outbreaks of the disease there are few rabbits but perhaps it is natural to relax so that after a short time the remaining population finds itself in ideal circumstances to bring about a rapid local increase. At Keswick and Mulbarton this seems to have taken place and rabbits were often seen feeding on lawns, ignoring people and cars. A dead black rabbit was found by the roadside at Saxthorpe and another black one turned up at Feltwell. When warrening was a local industry, black rabbits were highly esteemed and farmed so that the pelts could be used in the fur trade. The Ordnance Survey still provides reminders of the old warrening days. At Holme a doe rabbit viciously attacked a large rat which was carrying off one of her youngsters. The rat dropped the baby and fled, still hotly pursued by the angry mother. A stoat was seen to chase a rabbit into a burrow at Sandringham and disappeared down the tunnel chasing its prey. Moments later, the stoat was seen to dash madly away from the burrow having been "seen off" by another of its occupants. Rabbits are not always the timid creatures of popular fancy.

There has been even more interest in the problems of the Brown Hare (*Lepus capensis*) and more contributors have been deliberately looking out for them, especially in the spring when they are usually seen on the open fields. As a result we have far more records of the species than ever before. These observations, and in some cases a lack of them, tend to confirm previous notes that the hare has declined significantly in many areas. Yet in other districts hare shoots still take place with worthwhile bags. This is one of our more easily observed mammals and well worth study as there is so much yet to be understood. One of our more interesting sites is an open area of grazing between woods and arable land where hares can sometimes be seen feeding in the company of deer. A riverside meadow on the outskirts of Norwich which is backed by a small wood has its regular hare habitues. We have become used to what we describe as Accident Black Spots for hedgehogs but careful recording of animals found dead on the road produced the statistic of five hares killed during the year on a one hundred yard stretch of the B1149. This was presumed to be a regular crossing place between arable land on the one side and pasture on the other.



Rodentia

Many of our confirmed reports of the Red Squirrel (*Sciurus vulgaris*) come in from Dr. I. F. Keymer as a result of his continuing research into Red Squirrel disease. So by the nature of things these individuals are usually dead ones. Dr. Keymer is carrying on with the work and would be pleased to hear from anyone who has seen a squirrel that is affected. His 'phone numbers are given in the Editorial. Rex Whitta believes that Thetford Forest contains more or less the same population as last year. Caravanners near Shaker's Wood were delighted to see Red squirrels behind their camp site on several occasions. Apart from this Breckland population our remaining reds seem to be in scattered locations to the North-West of Norwich through Holt to Wells-on-sea. In other words, the woods and plantations known collectively as Wensum Forest.

All the Squirrel records have been converted into map references and only 11 of these are of the red while over 90 refer to the Grey squirrel which has been seen in all types of terrain including the centre of Norwich. One of the few remaining walnut trees in that city produced a crop of nuts that was appreciated by one Grey squirrel. We are becoming used to the extreme boldness of this animal but it still comes as a surprise to hear of one casually walking by a garden bonfire that was being stoked. During the hard weather at the beginning of 1982, Grey squirrels were seen by observers in Breckland to be seeking out birds that had succumbed to the harsh conditions. Birds species eaten at that time included Blue tit, Yellow hammer, Greenfinch, Blackbird and Redwing. Holly and Elm bark were stripped to get at the nutritious layer underneath and some hawthorn hedges were attacked to their tips.

In better times, fruit cages in Taverham proved to be no more than a temporary barrier to this determined and sharp-toothed thief. At Cranworth in June wheat stalks were being bitten through to bring down the still 'milky' ears to a more comfortable eating level. Their obvious presence in Great Yarmouth was widely discussed during the summer and led to some debate as to when the first one was noticed. It now appears that the single seen for several consecutive days in and around the churchyard and cemetery during October 1980 was a captive taking advantage of a spell of liberty. The report of a 'red' during the following year was probably the erythristic form of the grey which can and often does cause confusion.

Control of this species has proved extremely difficult but we have heard of an Attleborough cat that is doing its best.

After two years of high Bank Vole (*Clethrionomys glareolus*) numbers, 1982 seems to have been low, judging by the lack of reports sent in. There are fluctuations in numbers in vole populations and when at their peak this species is frequently seen in daylight. Short-tailed field voles (*Microtus agrestis*) on the other hand, feature in many lists. Our feline contributors from Hempsall presented our recorder there with 13 individuals at intervals during the year. It is not often that voles are found in such a bare and coverless expanse as a road but such was the case at Hunworth when a lone individual was taken by surprise by a dog being walked. The vole rushed to the nearest cover available which happened to be the trouser bottom of our contributor. Once there it slipped under the space between sole and heel of his boot and remained there until retrieved for examination.

Water Voles (*Arvicola terrestris*) along the Ouse have declined over the years but Breckland reports suggest that there are more to be seen there than for some time. A total of 18 localities were listed for the rest of the county which continues the rather hopeful trend we have been noting for the species during the recent years. One was observed preening at Great Melton. It was watched for some time and then moved off by climbing over a mesh fence erected by a water course. The black colour form was seen regularly at Wortwell. There they seem to particularly favour the ditches and courses where they abut the road which of course makes them more easily observed. They presumably do not move along the channels to where the water is affected by run-off from the fields and is less suitable for the vegetative upon which the water voles depend.

The life-styles and secretive natures of the smaller rodents mean that they are all very much under-recorded. This is notably so each year of the Wood Mouse (*Apodemus sylvaticus*). We have only 14 references for 1982 of this presumably county-wide mammal. However, many of the observations we do have tell of this mouse being found in or very close to buildings and even dwellings. Is the alien House Mouse losing ground to our native Wood Mouse? A colony is well established in the grounds and out-buildings of a large school in Thorpe Hamlet, Norwich. They

are frequently found dead in the service yard there and are regularly seen during daylight hours on the grassed playing areas when the children are outside. This suggests they have moved some distance from home base before the sudden eruption of some hundreds of noisy humans has confused them and possibly cut off their line of retreat. At Saxthorpe they are a nuisance in the greenhouses. In Taverham they regularly make use of the fallen leaves that have been collected and stored in concrete bins for composting down. Until the process is well under way they can be found on the surface when the lid is lifted and watched quite slowly re-entering their tunnel system. In April, a female was seen transferring three young, one at a time, their eyes still closed, from a nest site by a parked car to a hole a short distance away. A most unusual observation.

The closely related Yellow-necked mouse (*Apodemus flavicollis*) was not recorded during the year. Please contact the Editor as soon as possible if its presence is suspected.

Harvest Mice (*Micromys minutus*) were found at Stanford, New Buckenham, Hempnall, Saxthorpe, Itteringham, Aldburgh, Wortwell, Bawsey, Lynn Point, East Walton and Hilgay. Half of these were caught by cats or the remains found in Barn Owl pellets.

Few contributors mention the House Mouse (*Mus musculus*) and one who does sends us a nil return. At Buxton the custom of this mouse is to visit the larder in winter from time to time but in summer is never seen, presumably moving outside for the season.

More information on the Brown Rat (*Rattus norvegicus*) would be helpful. Its relationship with man may be too close and is certainly a sensitive one and can give rise to strong emotions. Just to mention the animal may cause revulsion. Even its entry into the language as a term of abuse discourages the casual observer from treating it on its merits. The rat does indeed cause an immense amount of damage, can carry disease and has few natural enemies. It is resourceful and adaptable so the battle is always delicately poised. Numbers correlate with local control measures linked with the presence of exploitable resources. An interesting line for contributors would be to note probable focal points of rat activity even when found well away from buildings and to report accordingly. J.E.G. found 66 road casualties when on her motorised wanderings which compared with 88 in both 1980 and 1981. The figure for 1979 was 93.

Dr. L. M. Gosling reports on the Coypu (*Myocastor coypus*) from spring 1982 to Spring 1983. Before quoting his report in full, a light-hearted aside is the story of the policeman in Gorleston who persuaded a coypu to come out from its retreat under a car by using a broomstick. The coypu was chased down the street and was eventually trapped in a dustbin! Dr. Gosling writes:

"About 9200 coypus were killed during 1982, 91% of these by Coypu Control trappers and the remainder by other agencies including Ministry of Agriculture, Fisheries and Food research staff, Anglian Water Authority operators and various occupiers. As before, the majority were caught in the wetlands of East Norfolk and Suffolk although small numbers continued to be trapped in an area that extended throughout Essex and to the eastern parts of the fens. The main change in distribution was the relative decline in South-East Suffolk while numbers in East Norfolk remained high in spite of intense trapping. This difference is because coypus are more easily trapped in the extensive coastal marshes that are typical of the southern part of the range, than in the fen, reed-swamp and carr habitats of broadland.

The changes in population size during 1982 were characteristic of the pattern that follows a cold winter when this is combined with continuous heavy trapping. The

number of adult females was reduced by over 60% in a prolonged decline which only ended in June. As argued in last year's mammal report the main reason for this sort of decline is that trapping can make a big impact when the addition of new adults to the population is reduced by the effect of cold weather on breeding. This was particularly clear in the later months of the decline when coypus were in good condition but when there were few young animals surviving in the population to take the place of the adults that were trapped. After June, when there may have been as few as 1500 adult females, numbers started to rise again and by the autumn they had almost doubled. The winter of 1982/83 was mild and there were moderate levels of breeding throughout. In spite of this, the population declined slowly after about October as the more effective trapping, that is characteristic of the winter months, made its impact.

Trapping effort totalled about 210,000 trap nights during 1982. Among the non-target captures were 10 mink, most of which were trapped on the River Waveney. All of these were killed. While mink are only caught incidentally during coypu trapping the habitat of the two species is similar and there is little doubt that these captures are slowing down the mink's colonization of East Anglia."

Carnivora

The Fox (*Vulpes vulpes*) is said to be very common in many parts of the county. The slight doubt expressed last year about its numerical strength seems to have been removed. Unless it gives itself away by its activities the presence of a fox can often go undetected. Yet they do turn up when least expected. 8.30 a.m. is not the crack of dawn but one was seen in a Marsham garden when our contributor looked out of his window. Gardens often contain attractive items for scavengers but the town fox phenomenon has still not reached us. The nearest we have are reports of foxes along disused railway tracks as they approach towns and the one seen on Mousehold Heath, Norwich, which is hardly a built-up area even though it is surrounded by housing estates and industrial complexes. It may have been the same one that was seen on the road in the neighbouring Heartsease estate which lies between the heath and open countryside, but there is plenty of wooded cover on the open side of this estate and it could have been one of any number in the district.

The Badger (*Meles meles*) is probably in a state of equilibrium with the environment. Habitat change is its greatest threat and while that is stable the species should remain stable. Our record card for the other large carnivore, the Otter (*Lutra lutra*) has, however, fewer positive records than ever and the future must surely be very bleak for this attractive creature except for the few in extremely favourable situations. The danger is that these will shrink even further from ever increasing pressures. After the massive publicity given to the Otter and its problems and needs in recent years some people have still not taken in and understood the message. We forbear to suggest it is deliberately ignored but the fact remains that disturbance in otter havens themselves has taken place and if this goes on our last hopes will evaporate.

Stoats (*Mustela erminea*) features in many strange stories and from the very full record card for the year they were plentiful throughout the county. In fact, one contributor suggests they are "back to pre-1953" figures in his part of Breckland. A group of 2 adults and 4 young were seen at play on a dusty road at Holme. The youngsters drank from a puddle and chased tails in circles. This is the event that inspired our artist, John Last, to provide his magnificent back-cover illustration. A



dead Wigeon at Cley was dragged about 100 feet in ten minutes or so, the mini-Samson resting for a couple of seconds every few feet. A dyke had to be swum into the bargain! Two dead stoats were found in a Hardley dwelling, having been killed by the cat. The astonished householder was even more disconcerted when she opened the airing cupboard door to find a live one inside!

Far fewer reports of Weasels (*Mustela nivalis*) were received suggesting a temporary low point. 23 localities were recorded including the one caught in a mole trap.

The American Mink (*Mustela vison*) has come into the news with a vengeance. Wide publicity was given to the accounts of mink being caught at Mendham Mill on the Waveney which ties in with previous records. The other main area listed is in the extreme west of the county. The other topic of mink news in a national context was the release into the wild of mink from a fur-farm by "well-meaning extremists". In this part of the country we have been made well aware of problems caused by introduced species getting out of hand after escape or release into the wild.

Cetacea

Visiting sea-mammals have again called in on our Lincolnshire neighbours before appearing along the Norfolk coast. A school of Pilot whales (*Globicephala melaena*) caused great concern and efforts were made to turn them back to open waters. Their presence was first noticed when more than 20 were stranded on a sand-bank off the mouth of the River Haven near Boston. Fisherman returning to port were the first to see them. A nine foot specimen was later found between Sea Palling and Happisburgh, near Castle Farm, Eccles. We lack a satisfactory explanation for the occasional phenonemon of schools of whales persisting in driving themselves into dangerous shallows.

Porpoises (*Phocoena phocoena*) were seen at Mundesley, Bacton, Holkham Beach and Blakeney Point. Four were watched for at least half an hour off Cley on September 14th as they swam slowly westwards in a calm sea. These, like most sea-mammals, were seen by bird-watchers. In this instance the record was passed on. Other sea-watchers please note! Your reports would be most appreciated.

Pinnipedia

Grey Seals (*Halichoerus grypus*) were found in good numbers off our eastern coast and reports came in from scattered vantage points along the North Norfolk coast, including Cromer. Grey seal pups are born late in the year when conditions in the North Sea are bleak indeed. Two pups were found on Winterton beach near work on coastal defences, a situation much too noisy and disturbed for the cows to nurture their young. Others were found at Great Yarmouth and Gorleston just before and just after Christmas.

Plenty of Common Seal (*Phoca vitulina*) pups were noted during and after their much earlier birth time in the summer. Scroby Sands have not yet built up sufficiently to provide a foothold during high tide so young pups were having a difficult time. Fortunately they are able to swim and when conditions are not too unkind they are able, with mother in attendane, to cope and survive. More seals were seen swimming up-river in Breydon Water and occasionally beyond.

Artiodactyla

Red deer (*Cervus elephas*) are normally much more elusive and difficult to see than the stag that suddenly appeared in the headlights of a car at Reepham. It was seen clearly for a moment, but where did it come from and where did it go? These glimpses of our largest mammal are not frequent but are becoming fairly regular occurrences which suggests that its place on our list is reasonably secure. Thetford Forest contains our largest herd but Wensum Forest in its scattered localities may contain a significant proportion of the population. The much smaller herds of Fallow deer (*Dama dama*) are holding on. All the fallow are descended from introduced animals and escapees have been roaming for centuries though present day herds are generally from releases and escapes during this last century.

The Roe deer (*Capreolus capreolus*) was a native species but had to be reintroduced here in Norfolk last century. It has found conditions much to its liking in our major forests and is the deer most frequently seen. It is a most attractive animal. A dead deer found on the roadside just to the west of the Stracey Arms on the A47 Acle to Great Yarmouth road was strangely found to be a roe. This must remain the mystery of the year as there are no other records for this area and it is most unusual to find this species in such open habitat. The initial assumption was that it was a Chinese Water Deer (*Hydropotes inermis*) until examination proved otherwise. It would have been untypical for even this species to be so far away from the dense cover it favours. Early risers in Broadland may catch a glimpse of them grazing on autumn vegetation but they usually retreat before the mists clear. Information on dead specimens is urgently required. Please phone Dr. L. M. Gosling or John Goldsmith as soon as possible.

Muntjac (*Muntiacus reevesi*) must be increasing judging by the reports that have come in. Informants have given perfect descriptions of the Muntjac as they have described their mystery animal caught in car headlights. Breckland is still their stronghold but more are being found in Central districts. The longest, clearest sighting was at Kelling where one was watched for several minutes, which was an exceptional observation.

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Black-tailed Godwit portrait by the late R. A. Richardson. Richard's memory is perpetuated at Cley by his observation hide overlooking the Reserve and by an annual award to promising young artists organised by *British Birds* magazine.

