A late summer survey of Britain's wildfowl

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Introduction

National surveys of Britain's swans, geese and ducks have concentrated on the autumn and winter, when the populations are at their highest, the resident stocks being augmented by passage and winter visitors which breed further north. The National Wildfowl Counts (Owen *et al.* 1986; Salmon *et al.* 1987) began in 1947 and are organised by the Wildfowl Trust under contract to the Nature Conservancy Council (NCC). They normally cover the period September to March. Counts are carried out by volunteers once a month on wetland sites, coastal and inland. The Birds of Estuaries Enquiry has been organised by the British Trust for Ornithology (BTO), with the support of the NCC and the Royal Society for the Protection of Birds, along similar lines since 1969 (Prater 1981; Salmon *et al.* 1987), but also includes waders and other estuarine species; all months are covered, but the emphasis has been on the mid-winter months. There is free interchange of data between the two schemes.

National surveys of post-breeding and moulting populations in Britain have been undertaken for certain species, e.g. Canada Goose (Ogilvie 1977). Studies have also been made of known concentrations, such as those at Abberton Reservoir and Rutland Water. County bird reports and books also provide information. Otherwise, the size and distribution of late summer wildfowl populations have largely been extrapolated from the results of breeding surveys, e.g. Yarker and Atkinson-Willes (1971), Sharrock (1976) and Tuite and Owen (1984), and from the September count data.

These analyses have suggested that the breeding and moulting numbers of many species were larger than previously thought and have been increasing. This, coupled with the need for comprehensive criteria in assessing sites of national importance, prompted the organisation of a Late Summer Survey in 1985. The National Wildfowl Counts network was asked to cover the period from mid-July to the end of August. At this time most species have finished breeding and are undergoing moult. The main aims were to identify the major moulting resorts and assess the size of Britain's late summer populations.

Preliminary results were given in the reports of the 1984–85 and 1985–86 National Wildfowl Counts (Salmon and Moser 1985, Salmon *et al.* 1987). The present paper reviews the results in detail.

Methods

Observers were asked to make at least one count between 13 July and 31 August 1985. Counts on set days, as with the standard monthly counts, could not be requested because of the interruptions of holidays. In view of the difficulties in identifying ducks in eclipse plumage, recorders were given an option of merely indicating the range in numbers (e.g. 10–50) of each species. In the few instances where this was taken up the mid-point of the range was used. Young were included in the totals. Counters were asked to indicate whether the birds were moulting, what the sex ratios were and which species were known to have bred at the site in 1985.

Results

The survey period was exceptionally windy and wet, with heavy rain and poor visibility. The consequent high water levels meant that moulting birds could more easily hide in the reedy margins of lakes and ponds, resulting in under-counting. Breeding success had generally been poor.

Figure 1 shows the extent of coverage by 10 km grid squares. Records were received for a total of 1,076 localities. This compared well with 1,100–1,700 in the September to March counts in recent seasons. The main gaps were on the coast, including some potentially important areas. The data for predominantly coastal species (e.g. Shelduck and the sea ducks) are thus very incomplete. Coverage of tiny waters, such as farm and village ponds, was also far from complete. The total number of birds present on these waters may well be significant, particularly for the grebes, Mute Swan and Mallard.

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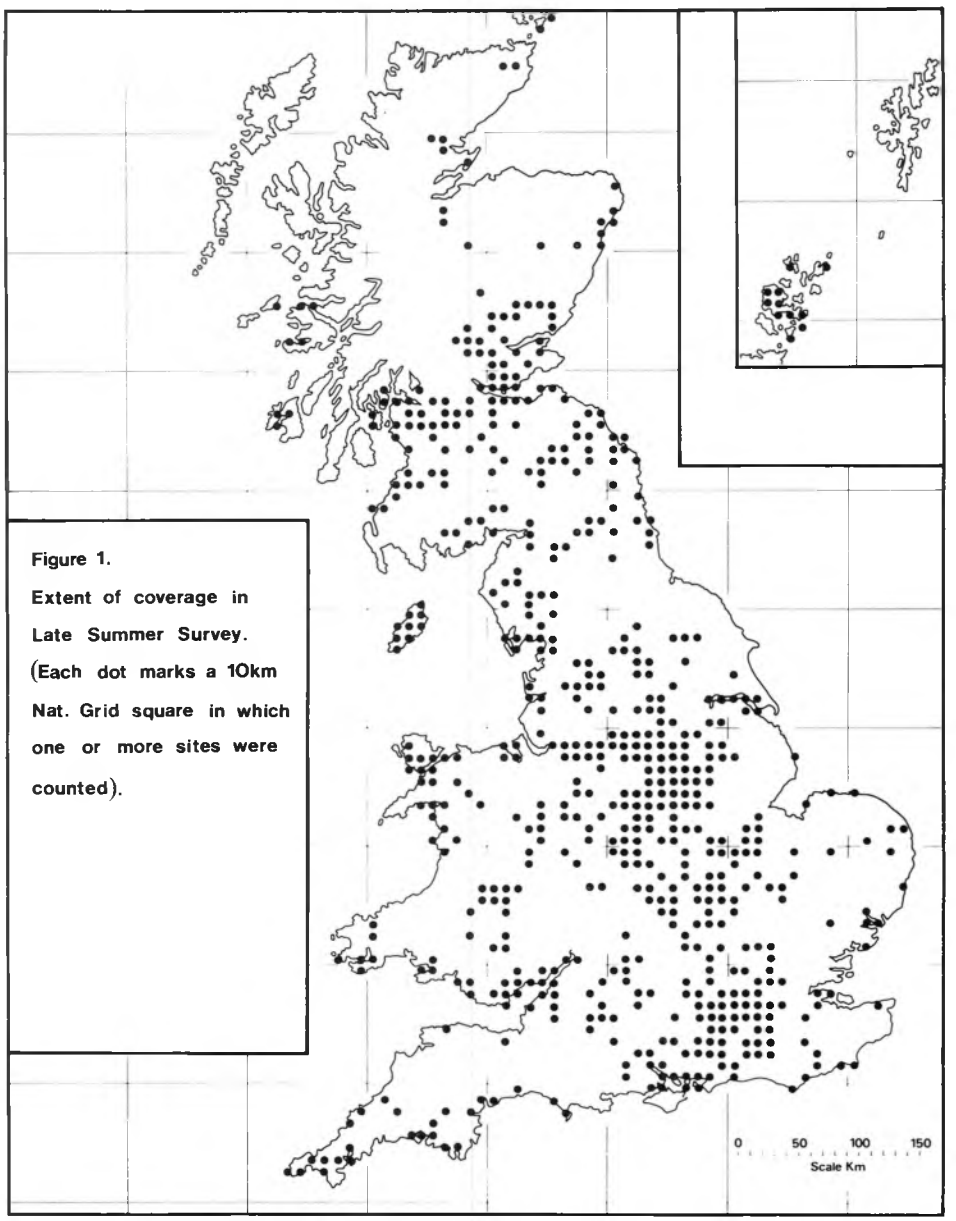

Figure 1.
Extent of coverage in Late Summer Survey. (Each dot marks a 10km Nat. Grid square in which one or more sites were counted).

Table 1 shows the total number of each species counted in Britain. Where a site was covered only once, that count has been accepted regardless of its date. Where more than one count was made, that closest to the middle of the survey period (8 August) has been used. Table 2 shows best estimates which can be made of the late summer populations for a number of wildfowl species, taking all evidence into account.

In the species accounts reference has been made to some of the more interesting breeding areas. Analysis of the data on breeding success and brood sizes which many counters included has, however, not been attempted.

Species accounts

Little Grebe *Tachybaptus ruficollis*

The Survey overlapped with the main period of post-breeding wing moult, August

Table 1. The total number of wildfowl counted in Britain during the Late Summer Survey, 1985. For comparison the highest number found in the September–March 1985–86 counts is given, with the month in brackets. (Figures over 100 rounded to nearest 10, over 1,000 to nearest 100)

	LATE SUMMER SURVEY 1985	PEAK SEPT-MARCH COUNT 1985–86*	
Little Grebe	820	700	(November)
Great Crested Grebe	5,700	6,300	(September)
Mute Swan	7,300	8,900	(January)
Greylag Goose	4,900	117,600	(November)
Canada Goose	24,100	31,400	(September)
Shelduck	9,400	75,000	(January)
Mandarin	200	200	(December)
Wigeon	640	281,700	(January)
Gadwall	2,000	5,100	(December)
Teal	5,600	91,500	(December)
Mallard	79,500	196,000	(December)
Pintail	16	26,600	(December)
Garganey	55	13	(September)
Shoveler	2,500	8,000	(October)
Pochard	6,300	34,000	(January)
Tufted Duck	32,000	49,000	(December)
Eider	14,800	18,300	(October)
Common Scoter	3,800	13,600	(February)
Velvet Scoter	170	620	(October)
Goldeneye	150	11,300	(January)
Red-breasted Merganser	1,100	4,600	(January)
Goosander	210	3,600	(Jan/Feb)
Ruddy Duck	570	2,000	(Dec/Jan)
Coot	45,400	94,300	(November)
Total	244,200	1,139,600	(January)

* Source: Salmon *et al.* (1987); unpublished National Wildfowl Count data.

and September (Cramp and Simmons 1977), but Vinicombe (1986) spoke of a lack of evidence of large-scale moult movements among the resident population. Of the 800 found in the Survey there were only five flocks of twenty or more.

Sharrock (1976) estimated the breeding population of Britain and Ireland at 9,000–18,000 pairs; Vinicombe (1986) that there were at least 11,000 birds in winter. The wildfowl counts obviously enormously underestimate the British stock. Rivers and streams, a habitat much used by Little Grebes, were not well covered. An estimate of the late summer population is not possible from the available data. The largest flocks were on the upper Avon between Amesbury and Upper Woodford, Wiltshire, with 60 on 29 August, and at Chew Valley Lake, Avon (54, 17 July).

Great Crested Grebe *Podiceps cristatus*

Hughes *et al.* (1979) found an increase of 50% in the number of adults in May/June between 1965 and 1975. If this rate has been maintained, there would have been 10,000 adults in the summer of 1985. The present survey, which included juveniles, found about half that number, but this was close to the maximum count in September. A large number may have been on very small waters not included in the counts, and there may have been flocks on unrecorded parts of the coast.

Flocks were reported, all in August, at Chew Valley Lake, Avon (530); Lafan Sands, Gwynedd (260); Pitsford Reservoir, Northants (145) and Gosford Bay, Firth of Forth (112, Hogg *et al.* 1986). At Chew Valley Lake 129 young were raised from a record 76 broods.

Mute Swan *Cygnus olor*

As with most resident species nearly as many were found as in the winter counts, the difference probably being attributable to the slightly less complete coverage in the late summer. The species is underrecorded

Table 2. The estimated late summer populations of wildfowl in Britain in 1985.

Species	Estimated Population
Great Crested Grebe	10,000
Greylag Goose: feral	14,000
native	2,750
Canada Goose	39,000
Mute Swan	18,750
Shelduck	10,000
Mandarin	3,000
Wigeon	2,000
Gadwall	4,000
Teal	20,000
Mallard	500,000
Shoveler	5,000
Pochard	7,000
Tufted Duck	50,000
Eider	70,000
Merganser	8,500
Ruddy Duck	2,000
Coot	60,000

Sources, other than the Late Summer Survey, were Davies (1985); Baillie (1986); Ogilvie (1986); Owen *et al.* (1986); Salmon *et al.* (1985, 1987); Owen and Salmon (1987).

in the monthly counts anyway, since so many are found on small waters and on rivers. The British population was estimated at 18,750 in the summer of 1983 (Ogilvie 1986).

Moult gatherings were reported from: Abbotsbury, Dorset (520, 13 July); Abberton Reservoir, Essex (450, 4 July); Loch of Strathbeg, Grampian (260, 1 August); Grafham Water, Cambs (190, 20 August); Tweed Estuary, Northumberland (170, 17 July); Loch Leven, Tayside (160, 30 August); Rutland Water, Leics (150, 14 July); Fairburn Ings, N. Yorks (150, 21 July); Alvecote Pools, Warwicks (120, 20 July and 24 August); Ouse Washes, Cambs/Norfolk (120, 30 July); Dungeness, Kent (110, 7 August).

Greylag Goose *Anser anser*

The feral population of Britain and Ireland now numbers 14,000 (Owen and Salmon 1988). Large flocks were found at Salhouse Broad, Norfolk (650), Little Paxton Pits, Cambs (420), Holkham Lake, Norfolk (350), Radwell Pits, Beds (300) and Stratfield Saye, Hants (250).

The total native breeding stock, in northwest Scotland, is estimated at 2,500–3,000 (Owen *et al.* 1986), but the only resort covered there in the present Survey was the Isle of Coll, where 78 were found.

Canada Goose *Branta canadensis*

The British stock has been increasing at about 8% per annum since the early 1960s and probably numbered about 39,000 in 1985 (Owen *et al.* 1986). The survey therefore located some 60% of the population. Large concentrations were at Stratfield Saye, Hants (1,750); Eccup Reservoir, W.Yorks (650); Papercourt Pits, Surrey (560); Holkham Lake, Norfolk (500); Shepperton Pits, Surrey (490); Dorchester Pits, Oxon (450) and Cheshunt Pits, Herts (410). Except at Dorchester, which held 460 in September, these were the highest counts for the whole season at each locality.

Shelduck *Tadorna tadorna*

In addition to the well-documented resort at Bridgwater Bay, Somerset, moulting areas have recently been discovered on the Forth Estuary (Bryant 1978), the east shore of the Wash, Norfolk (Bryant 1981) and the Humber (Tasker 1982), suggesting a tendency for birds to stay in Britain rather than cross to the Wadden Sea.

At Grangemouth in the Forth estuary there were 1,800 on 21 August (Hogg *et al.* 1986); the Snettisham shore of the Wash held 1,900 on 19 July; Bridgwater Bay 1,300 on 23 July; Cherry Cobb Sands in the outer Humber 740 on 21 July, including a flock of 170 in moult, and 880 on 31 August; the Kent Estuary, Cumbria, 650 on 21 July. On the Dee Estuary, Cheshire, where there is a regular pre-moult gathering, 5,700 were present on 23 June. As birds left for the moulting grounds the numbers declined to 3,500 on 10 July, 1,500 on 21 July and 1,100 on 18 August.

Other estuaries with gatherings were: the Kent, Cumbria (650); Ribble, Lancs (390); Orwell, Suffolk (220); Dyfi, Dyfed (170); Lindisfarne, Northumberland (150); Severn at Peterstone Wentlooge, Gwent (110); Conwy (100). The estimate of 10,000 for the number present in Britain in late July/August (Table 2) may well be too low.

Juvenile birds were reported from as far as 70–90 km inland on gravel pits in the Tame, Trent and Nene valleys – at Kingsbury Water Park (Warwicks), Elford/Fisherwick (Staffs), Attenborough,

Hoveringham/Bleasby and N.Newark/S.Muskham (Notts), and Ditchford (Northants).

Mandarin *Aix galericulata*

Most were found in the normal centres in the lower Thames basin. Although the total was only 200 it tallies with the usual number from the winter counts. The estimated breeding population, however, is 850–1,000 pairs (Davies 1985), which would imply a post-breeding population of roughly 3,000 (Salmon *et al.* 1987). The discrepancy reflects the secretive nature of this species (especially during the moult period) and the number along river courses. The largest gathering was 55 at Virginia Water, Berks.

Wigeon *Anas penelope*

A low count was to be expected, the native breeding population being small and probably still at the upland nesting areas, which were not covered in the Survey. The post-breeding population is estimated by Owen *et al.* (1986) at 2,000. Only three flocks of any size were reported: at the Loch of Lintrathen, Tayside (68, 10 August), Liddel Loch, Orkney (59, 29 August) and Lindisfarne, Northumberland (53, 17 August).

Gadwall *Anas strepera*

The total count is surprisingly low in view of the estimated size of the post-breeding population, 4,000 (Owen *et al.* 1986). Gadwall in eclipse plumage are particularly difficult to count, while many may have been on small, unrecorded waters. The highest counts were 400 at Rutland Water, Leics on 14 August, 360 at Minsmere on the same day, 230 at Chew Valley Lake, Avon (17 August), and 150 at both Gunton Park and Cley Marshes, Norfolk, on 18 August.

Teal *Anas crecca*

The total of 5,600 was low even compared with the September count of 32,000. This could have been caused by a variety of factors: Teal are particularly inconspicuous during the eclipse period; the high water levels made it especially easy for birds to hide in the reedy margins; the birds were highly dispersed; they were undercounted on the coast. There had also apparently been little immigration into Britain before the end of August, but it is possible that some of the native breeding population, roughly estimated at 3,500-6,000 in Britain and Ireland in the early 1970s (Sharrock 1976), had already moved south. The estimate of 20,000 for the post-breeding population (Owen *et al.* 1986) is still considered valid.

The highest count was no more than 560, at Lindisfarne on 17 August, other concentrations being at the Humber Refuge (340, 24 August); Biggar, Strathclyde (300, 25 August); Rutland Water, Leics (280, 14 August); Ribble Estuary, Lancs (270, 18 August); Hickling Broad, Norfolk (250, 23 August).

Mallard *Anas platyrhyncos*

The total count is small compared with the estimated post-breeding population of at least 500,000 (Owen *et al.* 1986). Mallard are always very undercounted, because they are so highly dispersed, and this must apply even more in the late summer, with birds in eclipse. It is probable that a larger proportion than later in the season comprises birds reared and released for shooting.

Eight large concentrations were found: at Rutland Water, Leics (1,900 16 July); Slimbridge, Glos (1,900, 25 August); Chew Valley Lake, Avon (1,400, 15 July); Dee Estuary, Cheshire (1,300, 18 August); Abberton Reservoir, Essex (1,200, 4 August); Windermere, Cumbria (1,200, 8 August); Kent Estuary, Cumbria (1,200, 18 August); Pitsford Reservoir, Northants (1,100, 21 August).

Garganey *Anas querquedula*

The total was 55, compared with just 13 in September 1985 and only one in March 1986. There is, moreover, likely to have been a higher proportion of repeat counting than with other species. The largest group was on the Ouse Washes (Cambs/Norfolk), with 14 on 30 July.

Shoveler *Anas clypeata*

The September counts of 5,000–6,000 birds in the early 1980s suggested a native breeding population of 1,000–1,500 pairs (Owen *et al.* 1986). The Survey, which located only 2,500, may have suffered because the birds were still on breeding marshes away from

the main water-bodies. It is also possible, however, that some of the native birds had already left Britain. The September stocks may comprise a higher proportion of immigrants than has previously been thought. The late summer population is estimated at 4,000.

Much the largest gathering was at Rutland Water, Leics, with 424 (17% of the total count) on 14 August. Most of these could fly, and were thought to be on passage rather than moulting. Only 59 had been present on 16 July. The moult gathering at Loch Leven, Tayside, peaked (at 180) in mid-September, with only six present at the end of August, but at Loch Gelly, Fife, 6km away, there were 56 on 23 August.

Pochard *Aythya ferina*

The small size of the native breeding population, with 400 pairs in Britain and Ireland (Sharrock 1976), suggests that some of those moulting in Britain come from overseas, and this is to some extent supported by ringing recoveries (Owen *et al.* 1986). Of the total Survey count nearly a third were at Abberton Reservoir, Essex, which held 2,000 on 4 August. This concentration is found every summer, and averaged 2,100 between 1978 and 1987. The next most important place was Rutland Water, with 370 on 14 August.

Tufted Duck *Aythya fuligula*

The results of the annual September counts suggest that the British breeding population has increased substantially; it is now estimated at 7,000–8,000 pairs (Owen *et al.* 1986), compared with 4,000–5,000 in the late 1960s/early 1970s (Sharrock 1976). The total Survey count of 32,000, the third highest of any species, compares with an estimated post-breeding population of 50,000 (Owen *et al.* 1986). Of the total counted 16% was at Rutland Water (3,000, 14 August) and Abberton Reservoir (2,200, 4 August). The next highest counts were at two of the Lea Valley reservoirs, Gt London: Walthamstow (850, 10 August) and King George V (760, 18 August, 90% of which were males in eclipse). Out of 610 in eclipse at Wraysbury Reservoir, Berks/Surrey, on 16 August 70% were males.

Eider *Somateria mollissima*

Baillie (1986) estimates the mainly resident British population at about 60,000-80,000. At Murcar, just north of Aberdeen, Grampian, long documented as the most important moulting site in Britain, 5,300 were found on 21 August, compared with the usual moulting flock of 8,000–9,000. The breeding season at the nearby Sands of Forvie colony had been very poor (Hogg *et al.* 1986). At Lindisfarne, Northumberland, there were 2,800 (July), at Gullane Bay, Lothian, 1,100 (20 August) and the adjacent Brigs of Fidra 1,000 (25 August). The Shetland coast, where 11,500–12,000 moult (Heubeck 1987), was not covered. The only records of more than one or two birds south of Cumbria and Northumberland were from Reculver, Kent (170, 13 July), Towyn, Gwynedd (10, 25 July) and the Burry Inlet, W.Glamorgan (80, August). The Reculver flock was almost entirely composed of immatures which had been in the area since early April.

Common Scoter *Melanitta nigra*

At Murcar a gathering of 3,000 had a male:female ratio of 50:50 compared with a usual 90:10 (M.V. Bell pers. comm.). There was no coverage of the major areas in Carmarthen Bay and the Moray Firth, and the largest records were from Lindisfarne, Northumberland (160, 17 August), and Gullane Bay, Lothian (110, 20 August).

Small groups occurred at several inland localities, including five at Cheddar Reservoir, Somerset, on 24 July, a regular July passage. Estimates of the late summer population of the two scoter species have not been attempted, because of the incompleteness of cover.

Velvet Scoter *Melanitta fusca*

These were recorded at only three sites, much the largest number being 160 (mostly males) at Murcar on 21 August.

Goldeneye *Bucephala clangula*

The wintering grounds of the small Scottish breeding population are unknown (Campbell 1986) and immigrants do not reach Britain in numbers until October, but 150 were found in the Survey – half of them on

the Ribble Estuary on 18 August, most of the remainder in Grampian.

Red-breasted Merganser *Mergus serrator*

The total late summer count was virtually the same as that in September, but a large proportion of the post-breeding population, estimated by Owen *et al.* (1986) at 7,000–10,000, was missed, presumably because coverage of northern and western river courses and on the north-west coast of Scotland was very incomplete. Much the largest numbers found were at the Lafan Sands, Gwynedd (270, 30 August) and Lindisfarne, Northumberland (230, 17 August). No birds were located on the west coast south of the Dyfi Estuary, Gwynedd, or the east coast south of Lindisfarne, and only one on the south coast.

Goosander *Mergus merganser*

The great majority of the few counted were inland. The largest group was 24 at Caistron Quarry, Northumberland, on 20 July. There were virtually no records from eastern Britain south of Aberdeen.

Owen *et al.* (1986) estimated the British post-breeding population at 5,000; Little and Furness (1985) suggest that almost all drake Goosanders in western Europe moult in the Tana Estuary, northern Norway, and that the British contingent leave Britain during May and return in October and November. Any estimation of the July/August population is thus very difficult, and the species has been omitted from Table 2.

Ruddy Duck *Oxyura jamaicensis*

The two main resorts in Staffordshire, Belvide Reservoir, which has held up to 200 in August (Smallshire 1987), and Blithfield Reservoir were not covered, and only 570 were found elsewhere in the country. Ruddy Ducks are much more dispersed at this time of year than in mid-winter, when the peak count totalled 2,000 for the first time in December 1985. The largest late summer record was from Woolston Eyes, Cheshire, with 52 on 23 August, of which 43 were males. The principal wintering site, Chew Valley Lake, Avon, held only 17. Breeding was reported from 18 counties, including the following which have been colonised since Hudson's (1976) review of the breeding status: Greater London, Essex, Hertfordshire, Buckinghamshire, Northamptonshire, Nottinghamshire, Humberside, Derbyshire, South Yorkshire and West Yorkshire. Ruddy Ducks have a very late breeding season, however, and many counters noted that at the time of the Survey it was still too early to confirm breeding at their sites.

Coot *Fulica atra*

This was one of the most widespread species, with 50 or more found at over 200 sites, but only six major gatherings at Abberton Reservoir, Essex (3,000, 4 August), Chew Valley Lake, Avon (1,600, 17 August), Rutland Water, Leics (1,600, 14 August), Fairburn Ings, N.Yorks (1,300, 30 August), Pitsford Reservoir, Northants (740, 21 August) and Bainton Pits, Cambs (508, 23 August). The counts generally show a late autumn/early winter peak, which must include a large element of immigrants, but the species is probably substantially under-recorded in all months. On this assumption the estimate for the late summer population has been put at 60,000.

Discussion

The Survey confirmed that most of the species are present in late summer in considerably smaller numbers than in the autumn and winter. The exceptions are Great Crested Grebe, Little Grebe, Mute Swan, Canada Goose, Mandarin, Garganey and Ruddy Duck, which are probably at their maximum numbers in late summer. Gadwall, Mallard, Tufted Duck, Eider and Merganser have autumn and/or winter peaks which are only slightly higher. The survey identified many important moulting, post-breeding and early autumn passage resorts, and in some cases allowed reassessments of previous estimates of the national populations for the late summer to be attempted. Incompleteness of coverage makes them very rough. Some species are excluded, as outlined above. Assessments for such a short period must in any case be treated with caution, since there are year-to-year fluctuations in the timing of moult and passage, while the breeding season for some species extends well into July.

Repeat surveys would be worthwhile, at five or ten year intervals, in order to confirm the impressions gained in 1985 and review

the status of the principal species, several of which have shown marked recent changes in the regular September to March counts. Because important late summer numbers are present in so many areas the survey should again be on a national basis rather than concentrating on any particular sites. Coverage of the coast would need to be improved, and the counts should be made in two or three target periods, say mid-July, early August and late August, rather than at any time over a six-week period.

Any site regularly holding 1% or more of the estimated British population of a species or subspecies of wildfowl is regarded as nationally important. Until now these population estimates have concentrated on the over-winter period, a minimum estimate of the numbers using a site being provided by the peak number present between September and March (e.g. Salmon *et al.* 1987). Consideration should be given to the drawing up of qualifying levels for different seasons, and to the definition of the term "regular" when applied to months when survey work is not annual. This could aid the identification of sites of national importance for their late summer populations. Sixty-seven sites held at least 1% of the estimated British late summer population for one or more species in the 1985 survey. These were as follows:-

Cornwall, Lynher Estuary; *Dorset*, Abbotsbury, Radipole Lake; *Somerset*, Bridgwater Bay; *Avon*, Chew Valley; *Gloucestershire*, Slimbridge; *Kent*, Dungeness; *London*, King George V, Wm. Girling, Walthamstow Reservoirs; *Berkshire*, Wraysbury Reservoir, Great Meadow Pond; *Hertfordshire*, Hilfield Park and Tring Reservoirs; *Bedfordshire*, Brogborough Pits; *Essex*, Abberton Reservoir; *Cambridgeshire*, Paxton Pits, Grafham Water, Ouse Washes; *Suffolk*, Orwell Estuary, Minsmere; *Norfolk*, Hickling, Ludham and Barton Broads, Gunton Park, Cley/Salthouse, East Wash; *Northamptonshire*, Pitsford Reservoir; *Leicestershire*, Rutland Water,Stanford and Swithland Reservoirs; *Humberside*, Humber Refuge, Cherry Cobb Sands; *North Yorkshire*, Fairburn Ings; *Cheshire*, Rostherne Mere, Woolston Eyes, Fiddlers Ferry Lagoons, Dee Estuary; *Lancashire*, Ribble Est; *Cumbria*, Kent and Leven Estuaries, Humphrey Head-Sandgate, Foulney Island/Cavendish Dock; *Northumberland*, Dinnington Pond, Lindisfarne; *Gwent*, Peterstone Wentlooge; *Dyfed*, Dyfi Estuary; *Gwynedd*, Lafan Sands, Conwy Bay; *Dumfries & Galloway*, Loch Ken; *Strathclyde*, Biggar Floods; *Borders*, Hoselaw Loch; *Lothian*, Tyninghame Estuary, Brigs of Fidra, Gullane Bay; *Central*, Grangemouth; *Fife*, Loch Gelly; *Tayside*, Loch of Lintrathen, Loch Leven; *Grampian*, Dinnet Lochs, Murcar, Balmedie-Ythan, Ythan Estuary, Ythan-Collieston, Loch of Strathbeg; *Orkney*, Lochs of Tankerness, Liddel.

Any site regularly holding at least 1% of the individuals in a bio-geographical population of one species or subspecies of wildfowl qualifies as internationally important under the Ramsar Convention. Only four concentrations found in the present survey reach that qualifying level. The species concerned in each case was the Shelduck, the sites being Bridgwater Bay, the Wash, the Dee Estuary and the Firth of Forth.

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Summary

A Late Summer Wildfowl Survey was organised in 1985, as an extension of the regular monthly National Wildfowl Counts to late July and August. Over 1,000 localities were covered. Many important moulting, post-breeding and early autumn passage resorts were identified, and in some cases re-assessments of previous estimates of the late summer populations were possible. Recommendations are made as to methodology for future surveys, and the possible application of the results to criteria for national importance.

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