

The numbers of Canada Geese in Britain, 1976

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A census of the Canada Goose was organized in Britain in July 1976. The results were combined with counts made during the previous winter, 1975–1976, to produce best estimates for the many more or less discrete sub-populations into which the British birds can be divided. There have been two previous censuses, in July 1953 when the total lay between 2,200 and 4,000, and in 1967–1969 when it had risen to 10,500 (Blurton Jones 1956; Ogilvie 1969).

Ogilvie (1969) reviewed the immediate past status of the species in Britain and showed how the large-scale transportation of birds during the 1950s and 1960s contributed to the great increase and spread that took place during the interval between the two censuses. At the same time much new habitat was being created in the form of gravel pits and reservoirs of which the geese were not slow to take advantage. Although transportation of birds has virtually ceased, new waters continue to be formed and although large flocks are still to be found on park lakes, their original homes from the introductions of the late seventeenth century, considerable concentrations of geese are now on gravel pit complexes, particularly in the Thames valley. This is in part a reflection of the ideal nature of many gravel pits for the geese, with plentiful islands for nesting and often no shooting of any kind, and partly the result of more systematic attempts by owners of private lakes to reduce the size of their flocks.

The division of the geese into discrete sub-populations, first noticed by Blurton Jones (1956), still prevails in many areas. However, the steady spread of the birds has led to the boundaries between some areas becoming blurred or even disappearing. This trend is bound to continue, and even now some of the divisions given may not, in fact, be valid. Extensive ringing might reveal more about this matter but it is not of such great importance that any special effort in this direction should be considered.

Method

The starting point for the census was the returns of the National Wildfowl Count Scheme run by the Wildfowl Trust. In particular the relatively complete cover of the

majority of important wetlands in the country during the annual mid-January International Waterfowl Census was used to compile a list of sites where Canada Geese occurred, at least in winter. To this were added all sites counted during the 1967–1969 census. Each counter was then circulated with a note requesting a count of the numbers of Canada Geese using the particular water or waters during the last week of June or the first half of July. This period coincides with the time when the maximum number of geese will be flightless during the annual moult, hence reducing to a minimum movement of birds between waters during the census. Information was sought on the number of goslings present and the estimated number of breeding pairs. In many areas, however, the goslings were already so well grown that their certain identification was difficult. Counters were also asked whether complaints against the geese were made in their area and, if so, what action was taken.

The results received from the summer census were not complete for all areas, and the same technique as in 1967–1969 was adopted. Winter and summer counts for each sub-population were compared and the larger of the two totals selected. Provided the areas of the various sub-populations have been accurately defined, this combining of winter and summer counts should not lead to major errors. It should be borne in mind, though, that a census in July, including goslings, is at a time of peak population, whereas shooting and other losses lead to a lower total in the winter.

In the last eight years there has been a marked trend towards breeding by scattered pairs on small pools and on islands in rivers. In Yorkshire there are now many pairs breeding on high moorland, remote from any permanent water. Inevitably this means that the summer census is incomplete, with its emphasis on the larger waters and more obvious flocks. The extent of this scattered breeding is difficult to estimate but could amount to a few hundred pairs overall. In the period 1968–1972, Canada Geese were proved to breed in 505 10-km squares in Britain and Northern Ireland, plus one square in the Republic of Ireland (Sharrock 1976). About 70 of these squares did not contain a flock counted during the 1976 census, or

were not adjacent to a square containing a flock. The area with the most noticeable scattered breeding away from recorded flocks was in north Suffolk and Norfolk

where 20 of the 70 squares occur. Cambridgeshire and Lincolnshire also had a number of isolated breeding records.

Table 1. Numbers of Canada Geese in Britain, 1953, 1967–1969 and 1976.

All counts in 1967–1969 and 1976 rounded to the nearest 10.

Sub-population area No. Name	Total 1953	Total 1967– 1969	1976 Winter 1975– 1976	Census July 1976	'Best' Total
1. S Deven	—	220	92	223	220
2. W Somerset	—	—	40	46	50
3. Avon	—	—	19	32	30
4. SE Dorset, SW Hants	—	180	501	x	500
5. S Hants	—	80	136	123	140
6. W & N Sussex, S Surrey	50	290	298	342	340
7. E Sussex	—	—	51	45	50
8. SE Kent	—	30	35	81	80
9. E Kent	—	—	63	14	60
10. Central & W Kent	—	340	355	277	360
11. Berks, Hants, Bucks, etc.	163	570	x	2,472	2,470
12. E Wilts	—	—	96	37	100
13. W Wilts	62	50	8	19	20
14. N Wilts, E Glos	—	—	x	70	70
15. Central Glos	—	100	80	20	80
16. Gwent	—	20	9	0	10
17. Pembroke	—	40	85	49	90
18. Anglesey	—	200	200	x	200
19. Oxfordshire	—	—	135	146	150
20. Beds & N Bucks	—	—	x	205	210
21. E Herts	—	—	49	65	70
22. London	—	130	96	x	100
23. Essex	—	140	115	226	230
24. Suffolk	—	30	125	85	130
25. S Norfolk	225	300	246	198	250
26. W Norfolk	40	120	144	x	140
27. N Norfolk	460	760	x	1,697	1,700
28. Cambs, Lincs, Northants	—	—	596	661	660
29. Leics	229	60	x	327	330
30. S Notts	200	460	x	379	380
31. N Notts	—	—	x	848	850
32. Derbyshire	437	890	550	570	570
33. W Midlands	104	860	x	2,233	2,230
34. SW Salop, Montgomery	84	400	x	355	360
35. N Salop, S Cheshire	598	780	x	1,589	1,590
36. N Cheshire	219	660	x	666	670
37. S Lancs	156	170	279	218	280
38. S Yorkshire	127	200	x	154	150
39. E Yorkshire	—	40	x	192	190
40. Central Yorkshire	398	1,310	x	1,547	1,550
Beaulf Firth	50	250	x	920	920
41. Cumbria	—	140	305	360	360
42. Northumberland	—	20	41	31	40
43. Scotland	194	100	58	137	140
44. N Ireland	120	70	210	x	210
Totals	3,906	10,510			19,400

— = sub-population did not exist.

x = no count.

Results of the census

The numbers of geese estimated for each sub-population are set out in Table 1. The national total amounts to about 19,400. The highest count made during the winter 1975-1976 and the figure obtained during the July 1976 census are given, where both are available. The higher of the two has been rounded to the nearest ten to represent the total for that sub-population. Also given are the comparable figures for 1953 (maximum only) and 1967-1969. It will be noted that some of the sub-populations recognized in

the earlier censuses have been combined, while in a few cases it has been thought worth splitting some groups at least for the time being. It is possible that the 1967-1969 sub-divisions erred on the side of caution.

Figure 1 maps the current distribution of the Canada Goose indicating the probable boundaries of the various sub-populations and also some of the possible links between them. It is quite likely that there is rather more movement of geese than shown. However similar totals in the two seasons are taken as a reasonable indicator of dis-

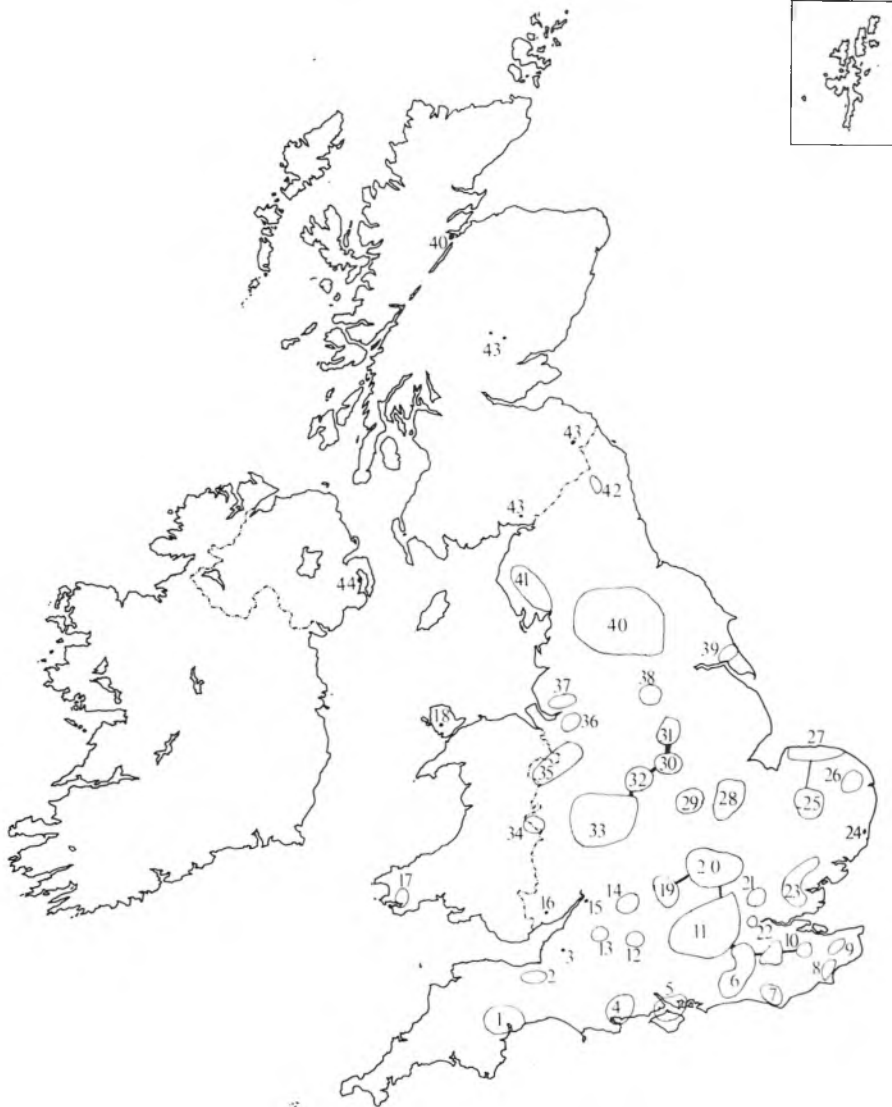


Figure 1. Distribution of Canada Geese in Britain, 1976, showing approximate boundaries of sub-populations and some possible links between them.

creteness. No attempt has been made to quantify the status of individual sites in Figure 1. The flocks move around quite freely in their area and insufficient data is available to be able to plot the relative importance of each water.

Distribution of Canada Geese in Britain

The sub-population headings below correspond with those in Table 1 while the identifying number is given both in the Table and on the Map (Figure 1). Blurton Jones (1956) gave a maximum and minimum figure for several sub-populations in the 1953 census. Only the maximum count is given here, together with that for 1967–1969 (abbreviated to 1968 to save space).

1. *S Devon*: Shobrooke Park and other waters in Exe valley.

1953: 0; 1968: 220; 1976: 220.

Apparently no change in the past eight years, though breeding has spread to new sites.

2. *W Somerset*: Clatworthy reservoir and Cothelstone Pond.

1976: 50.

A new sub-population since 1968.

3. *Avon*: Chew Valley reservoir.

1976: 30.

A new group becoming established.

4. *SE Dorset, SW Hampshire*: Poole Harbour; Crichel Lake; Kingfisher Lake, Ringwood.

1953: 0; 1968: 180; 1976: 500.

A rapidly increasing group. The inclusion of Kingfisher Lake is speculative but seems probable.

5. *S Hampshire*: Needs Oar Point; Baffins Pond, Portsmouth; Hayling Island.

1953: 0; 1968: 80; 1976: 140.

The connection across Southampton Water is not proved but seems likely. Wintering birds from this group occur on the Isle of Wight.

6. *W & N Sussex, S Surrey*: Pulborough floods; Warnham Mill; Knapp Castle; waters around Dorking.

1953: 50; 1968: 290; 1976: 340.

The exact relationships between the various flocks in this area are unclear and those in Sussex may be separate from the birds in Surrey. Equally there may be connections with group (7).

7. *E Sussex*: Arlington reservoir and nearby waters.

1976: 50.

This sub-population has been separated from (6), with which it was lumped in past censuses, on the grounds of distance, and of consistency of summer and winter counts but there may be some contact.

8. *SE Kent*: Dungeness and New Hythe.

1953: 0; 1968: 30; 1976: 80.

A steady increase. The connection between the two sites is not proven, nor is the lack of such connection between these birds and group (9).

9. *E Kent*: Waters around Chilham and Ashford.

1976: 60.

An apparently new group, perhaps linked to those to the South (8), and those to the West (10).

10. *Central and W Kent*: Gravel pits and lakes near Sevenoaks, Maidstone and Tunbridge Wells.

1953: 0; 1968: 340; 1976: 360.

Little growth in the past eight years partly because of a deliberate attempt to control numbers by shooting, and to replace the Canada Geese by Greylags *Anser anser*.

11. *W Surrey, N Hants, SE Berks, S Bucks, SW Herts, W Middlesex*: A large complex of gravel pits and lakes in and around the Thames valley from Newbury and Reading to Slough and south to Guildford; includes Windsor Park.

1953: 163; 1968: 570; 1976: 2,470.

The 1968 figure was an acknowledged minimum and even the latest count is almost certainly incomplete, perhaps by some hundreds. Very large flocks occur on some waters, particularly gravel pits. It might be possible, with detailed study, to split the group into separate units, perhaps based round Reading, Guildford and Slough.

12. *E Wiltshire*: Axford; Wilton Water; Ramsbury.

1953: 62; 1968: 50; 1976: 100.

Winter counts suggest movement between the four waters in this area.

13. *W Wiltshire*: Corsham; Laycock pits; Bowood.

1976: 20.

A probable new group but perhaps wanders from (12).

14. *N Wilts, W Glos*: Buscot Lake: Cotswold Water Park pits.
1976: 70.

Buscot Lake was included in (12) in 1968 but is almost certainly separate. The birds from here are beginning to colonize the nearby very extensive gravel pit workings of the Cotswold Water Park, perhaps the largest unexploited area of Canada Goose habitat (c. 65 pits totalling over 600 ha of water) in southern England.

15. *Central Glos*: Frampton gravel pits.
1953: 0; 1968: 100; 1976: 80.
This flock has not been allowed to increase any further.

16. *Gwent*: Ynysyfro reservoir.
1953: 0; 1968: 20; 1976: 10.
These birds seem to be the remnants of an introduction in the Newport area in the 1960s which appears not to have been very successful.

17. *Pembroke*: Little Milford and Fowborough.
1953: 0; 1968: 40; 1976: 90.
Steadily increasing.

18. *Anglesey*: various waters on the island.
1953: 0; 1968: 200; 1976: 200.
Little change in recent years.

19. *Oxfordshire*: gravel pits south and south-west of Oxford; Blenheim Lake.
1976: 150.
A new and flourishing group though small numbers in the area were overlooked at the last census.

20. *Bedfordshire and N Bucks*: several gravel pits and lakes, particularly Wootton, Luton Hoo and Eversholt.
1976: 210.
Very small numbers may have been present in the area in 1968. These present counts could be incomplete and could also be divisible into smaller groups. There are possible links to the south with (11).

21. *E Herts*: Lea valley reservoirs and gravel pits.
1976: 70.
A small group but with much potential habitat in its area.

22. *London*: Hyde Park; River Thames at Kew; Wimbledon Park.
1953: 0; 1968: 130; 1976: 100.

Little change though some may have been missed.

23. *Essex*: Hanningfield reservoir and smaller waters in the north.
1953: 0; 1968: 140; 1976: 230.

The Hanningfield flock continues to grow, small flocks further north may not be connected.

24. *Suffolk*: Minsmere.
1953: 0; 1968: 30; 1976: 130.
An isolated population that appears not to have spread.

25. *S Norfolk*: Breckland waters.
1953: 225; 1968: 300; 1976: 250.
The 1976 count was almost certainly an underestimate; counting all potential waters simultaneously is very difficult. The connection between these birds and the population based at Holkham, North Norfolk (27), suggested at the time of the 1968 census, has recently been confirmed by ringing. The full extent of interchange is not yet known and for the time being they are considered separately, which they almost certainly are for breeding.

26. *W Norfolk*: Broads.
1953: 40; 1968: 120; 1976: 140.
Although formerly stemming from the Holkham flock (27) now thought to be completely separate.

27. *N Norfolk*: Holkham Park; Bayfield Lake; Cley marsh.
1953: 460; 1968: 760; 1976: 1700.
A further large upsurge in numbers has taken place coupled with more use of sites away from Holkham for breeding.

28. *Cambs, Lincs, Northants*: mainly flooded pits near Peterborough and various lakes in Northants; plus outliers, which may be separate, as at Grimsthorpe.
1953: 229; 1968: 560; 1976: 660.
In the previous censuses these birds were lumped in with those in Leicestershire (29) but there is some evidence that they are currently separate. There may even be subdivisions within this group.

29. *Leicestershire*: various reservoirs, gravel pits and park lakes.
1976: 330.
Previously included in (28). Considerable spread to gravel pits in recent years.

30. *S Notts*: gravel pits in the Trent valley.

1976: 380.

Considered in 1968 as part of Dukeries population (31) but extensive ringing has shown that there is a fairly good separation between them.

31. *N Notts*: Lakes and gravel pits in the Dukeries.

1953: 200; 1968: 460; 1976: 850.

Numbers in the south part of the country, now split off as (30), were very low in the two previous censuses.

32. *Derbyshire*: park lakes at Kedleston, Osmaston, etc.

1953: 437; 1968: 890; 1976: 570.

Ringing has shown some connections with (30) to the east and particularly with (33) to the west but there still seems to be a fair amount of traditional loyalty to these long-standing haunts.

33. *West Midlands*: includes N Worcs. Warws, S & E Staffs and E Salop.

1953: 104; 1968: 860; 1976: 2,230.

This area combines two divisions of the 1968 report. The figure given is the result of a comprehensive count of major waters but it is considered that perhaps as many as a further 250 birds, mainly breeding pairs and their young, were scattered over numerous small pounds and other waters. Extensive ringing in this vast area is revealing much about the amount of mixing taking place within it. Certainly various sub-divisions could be proposed but even if an analysis of the ringing evidence were available it is likely that the picture will continue to change very rapidly.

34. *SW Salop, Montgomery*: Welshpool area and nearby small waters in Salop.

1953: 84; 1968: 400; 1976: 360.

Little apparent change though the relationship with birds in the rest of Salop still not definite.

35. *N Salop, S Cheshire*: the Ellesmere group of waters; Combermere; Barmere; Cholmondeley Castle; and numerous small waters near Oswestry and south to Shrewsbury.

1953; 598; 1968: 780; 1976: 1,590.

This area combines two tentative sub-populations of the 1968 report. It is quite likely that there are links south to (33) and north to (36). Many birds breeding on small waters may have been overlooked.

36. *N Cheshire*: Rostherne; Tabley Mere; Tatton Mere; etc.

1953: 219; 1968: 660; 1976: 670.

Possibly one or more flocks were missed.

37. *S Lancs*: lakes and flashes between Liverpool and Bolton.

1953: 156; 1968: 170; 1976: 280.

Some spreading out from the former stronghold of Knowsley Park.

38. *S Yorkshire*: a couple of lakes near Barnsley.

1953: 127; 1968: 200; 1976: 110.

Some formerly used waters seem to have become unsuitable.

39. *E Yorkshire*: Hornsea Mere and East Park lake, Hull.

1953: 0; 1968: 40; 1976: 190.

A considerable increase. There may not be any connection between the two sites.

40. *Central Yorkshire*: park lakes, reservoirs and gravel pits in a large area north of Leeds; plus moult migrating birds on Beaulf Firth.

1953; 398; 1968: 1,310; 1976: 1,550, Yorks.

1953: c. 50; 1968: 250; 1976: 920, Beaulf.

Detailed work continues on this sub-population by the Canada Goose Study Group of Yorkshire (see Thomas 1977). The above count is thought to be a fairly accurate one, though may have omitted a relatively small number of breeding pairs which rear their young on remote moorland. The moult migration to the Beaulf Firth has continued to grow with, for the first time, an offshoot of 30 birds on Loch Leven, Kinross, in summer 1976 (included under Beaulf above). Despite large-scale ringing in Nottinghamshire, Derbyshire and the West Midlands (31, 32, 33, 34) in recent years, the number of movements between those areas and Yorkshire or the Beaulf Firth has been very small.

41. *Cumbria*: the Lake District south to the Lune valley.

1953: 0; 1968: 140; 1976: 360.

Considerable expansion has taken place into the Lake District in recent years.

42. *Northumberland*: Colt Crag and Hallington reservoirs.

1953: 0; 1968: 20; 1976: 40.

Although there are many waters in this area few are really suitable for the geese.

43. *Scotland*: Kinmount, Dumfries,

Stranraer Locks, Wigtown; and other scattered waters.

1953: 194; 1968: 100; 1976: 140.

Kinmount accounts for 70 of the birds and Stranraer Lochs 10. The remainder are spread between Berwickshire, Dunbarton and Perthshire. It is not thought that there is any connection between these various Scottish flocks.

44. *N Ireland*: Strangford Lough.

1953: 120; 1968: 70; 1976: 210.

This isolated group continues to grow and is beginning to spread out from the Lough. Elsewhere in Ireland, as reported by Merne (1970), the Canada Goose occurs as a regular wild visitor to the Wexford Slob with from one to eight each year. These birds are thought to come from north-east Canada. There are also a number of water-fowl collections in Ireland with free-flying Canada Geese but so far it is not thought that any feral flocks have become established away from them.

Rate of growth

Between 1953 and 1968 the population of Canada Geese in Britain grew at an average annual rate of 7–9%, depending whether one takes the upper or lower figure given by Blurton Jones (1956). Between 1968 and 1976 the annual growth rate was almost exactly 8%. Thus the population has continued to increase over the last eight years at the same rate as it did during the previous fifteen. There has been no sign of a slowing down overall which might indicate either the approach of habitat saturation, or the institution of effective controls. This is not to say that locally either possibility may not exist. Certainly the numbers in some of the sub-population areas have hardly changed over the past eight years, while others have increased considerably more than the national average. For example North and South Nottinghamshire, North Norfolk and SE Dorset, SW Hampshire, have all grown at a rate of at least 12% per annum, while even if it is assumed that the 1968 total for the Thames valley Reading–Slough area was one-third too low, it still requires a growth rate of 15% per annum to bring it to the 1976 level.

Although control of Canada Geese is increasing in some areas (see below) their steady colonization of gravel pits where action against them tends to be less well coordinated, does provide them with the potential for further considerable growth. If an 8% per annum growth rate is projected, there will be a doubling of the present total by 1985.

Complaints and controls

These matters have already been examined in detail by Ogilvie (1969). Participants in the present census were asked whether there were complaints by farmers, fishermen or others against the geese in their area, and if so what measures were taken to alleviate any problem. This information was received in confidence and only summary statements can be given.

There seems little doubt that Canada Geese do cause a certain amount of agricultural damage in Britain, though the scale of it is difficult to assess. Various crops including grass, growing and mature corn, and brassicas, are all said to suffer. Certainly, the fact that the geese are present throughout the year means that all stages of farming activity are vulnerable compared with the much more restricted potential damage from migrant geese, which are only in the country from October to April.

In the event of serious damage being proved, the law, as it stands at present, does allow shooting out of season to prevent damage. But the onus is on the farmer to show that damage has occurred, or is likely to. So far, no farmer or landowner has had to prove the need for his actions. However, in England, though not in Scotland, anyone shooting birds out of season does run the risk of a private prosecution. To regularize action against any bird causing damage, agricultural or otherwise, it is hoped that a change in the law will be forthcoming which will enable affected farmers and others to apply for a licence to carry out control measures.

A prerequisite of the issuing of any sort of licence, and indeed of instituting the present controls used, should be that determined efforts have been made to scare the birds from the crops at risk. There was little evidence from the counters returns that farmers had been attempting systematic scaring of the geese from their crops with the aid of bangers, or other devices.

Canada Geese may be shot during the open season, 1st September to 31st January inland, extended to 20th February on the coast. Considering that the species is a major sporting bird in its native North America, and was transplanted to many areas in Britain in the 1950s and 1960s ostensibly to provide sport, it is surprising how little shot it is. Admittedly very many flocks are so tame as rarely to provide a 'sporting' shot, but there appear to have been few attempts to turn them into sporting birds. It was feared that there would be an unacceptably large

kill in southern Sweden when the species was taken off the protected list a few years ago, but many previously quite tame flocks rapidly became nearly as wild as other geese (S. Fredga, pers. com.).

Attempts to control Canada Geese often concentrate on taking eggs or preventing them from hatching. Taking eggs of British wildfowl is actually only legal if they are for hatching. 'Pricking' eggs, with a sharp object so that the contents are damaged and do not hatch, is widely practised. However, it is necessary to prick all the eggs in every clutch, and to ensure that the geese do not subsequently relay. Preliminary evidence from Yorkshire suggests that less than 50% of eggs laid would in any case produce fledged goslings, while losses over the next two to three years before breeding age is reached will reduce the number by a further 35–45% (Thomas 1977). Thus the technique, employed on one estate, of pricking just one egg out of each clutch is a complete waste of time, while even the definite destruction of all eggs will take several years before there is any noticeable effect on numbers.

This census has confirmed that the population of Canada Geese in Britain can still be divided into a great many discrete groups. Consequently the control of Canada Geese in an area where damage can be shown to be done is a local problem requiring local solutions. If a landowner or farmer has too many geese feeding on his land then he can, quite legally, systematically reduce their numbers by winter shooting. If he does not, or cannot, do it all himself, then there are responsible member clubs of the Wildfowlers' Association of Great Britain and

Ireland, who would be willing to help. If such methods were adopted more widely, and preferably cooperatively between neighbouring landowners, the problem of too many Canada Geese would be quickly solved.

In conclusion it must not be thought that every flock of Canada Geese is accused of doing damage. Of the approximately 400 waters covered during the census, complaints were reported from only a quarter, further proof that we are dealing with a localized problem. Some of the flocks on the other 300 waters may reach a size when damage occurs. Perhaps the landowners concerned should start to consider now what the optimum number of birds is, and keep their flock at that level.

Acknowledgements

I am extremely grateful to all the many counters who completed and returned the census forms. Some of them were asked at very short notice, as I became aware of previously uncounted flocks. I particularly thank the Canada Goose Study Group of Yorkshire, and Dr C. D. T. Minton, for providing me with such complete information on the numbers in Yorkshire and the West Midlands respectively.

Summary

A census of the Canada Goose *Branta canadensis* in Britain was carried out in July 1976. The total has now reached about 19,400 compared with 10,500 in July 1968. The population is still divided into more or less discrete sub-populations and details are given of these. Complaints of agricultural damage were received from about one-quarter of all waters covered in the census. Control measures are reviewed.

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