	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Sites of national importance in Great Britain								
Medway Estuary	(9)	[37] 32	15	302	42	Jan	98	
Alde Complex	178	(52)	165	4	12	Feb	90	
Arun Valley	133	68	98	52	78	Jan	86	
Walmore Common	106	135	(68)	43	16	Dec	75	
Dee Estuary (Eng/Wal)	72	107	79	48	56	Jan	72	▲
R. Avon: F'bridge to Ringwood	109	114	91	21	21	Dec	71	
Sites of all-Ireland importance in Northern Ireland								
Loughs Neagh & Beg	80	117	77	53	16	Jan	69	
Lough Foyle	94	90	14	10	5	Jan/Feb	43	
R. Lagan: Flatfield	32	[31] 49	38	-	-		40	
Canary Road	43	-	26	-	-		35	
Upper Lough Erne	0	122	7	0	0		26	

WHOOPER SWAN

Cygnus cygnus

International threshold: 160
Great Britain threshold: 55
All-Ireland threshold: 100

GB max: 6,711 Jan
NI max: 3,663 Jan

% young: 16.8 brood size: 2.3

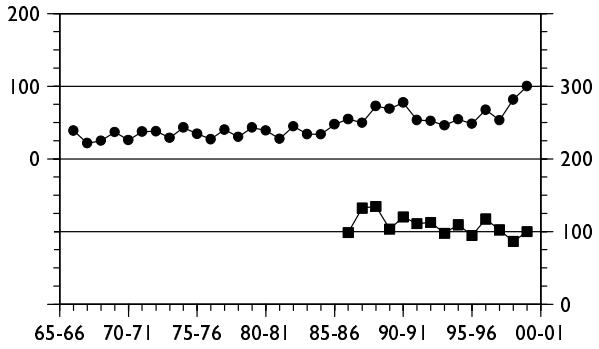


Figure 12. Annual indices for Whooper Swan in GB (circles, left axis) and NI (squares, right axis)

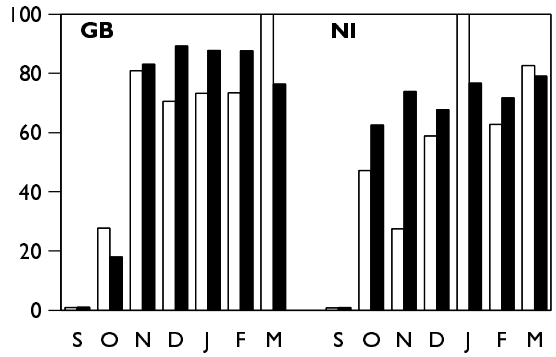


Figure 13. Monthly indices for Whooper Swan in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

The results of the International Swan Census in January 2000 suggest that the population of Whooper Swans that breeds in Iceland has increased by over 30% since 1995, from around 15,840 to 20,655 individuals (Cranswick *et al*. in press). Individually, numbers in Great Britain and Northern Ireland have increased by around 34% and 32%, respectively; jointly, they represent over 50% of the international population. The results of the census indicate that WeBS typically records less than 60% of the Whooper Swan numbers in Great Britain and Northern Ireland.

National annual indices continue to increase in Great Britain and were up marginally in Northern Ireland after two successive years of decline. Monthly indices show that birds arrived later than usual in the province, peaking in January. Census results show that reproductive success in 1999 was relatively low. At key sites in Great Britain, 16% of birds in flocks were juveniles at WWT Caerlaverock, 18% at WWT Martin Mere, and 17% at WWT Welney (WWT, unpubl. data).

Peak counts at the Ouse Washes and WWT Martin Mere in 1999-2000 were notably higher than average and numbers using the river Clyde between Carstairs Junction and Thankerton Bridge are now of international significance. Six new sites provisionally qualify as nationally important for this species. Counts at the Humber Estuary and Threave Estate were outstanding and contributed largely to promotion in site status.

Assessment of the importance of staging sites for migrating waterbirds is typically based on peak counts of birds, which underestimates the total number of birds passing through a site. A new technique for estimating the total numbers of Whooper Swans using a staging site, based on series of counts and concurrent re-sightings of marked individuals (Frederikson *et al*. 2001), may be useful for identifying important staging sites for waterbirds.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Sites of international importance in the UK								
Ouse Washes	1,288	[31] 1,211	1,299	[24] 1,623	[24] 2,120	Dec	1,508	
WWT Martin Mere/Ribble Est.	[32] 740	[32] 827	[32] 1,041	[32] 1,130	[32] 1,335	Jan	1,015	
Upper Lough Erne	980	1,094	799	989	985	Jan	969	
Loughs Neagh & Beg	906	1,169	1,113	830	641	Jan	932	
Lough Foyle	1,521	671	566	642	657	Feb	811	
Loch of Strathbeg	(221)	158	310	476	262	Nov	302	
R. Foyle: Grange	266	380	150	-	-		265	
Solway Estuary	[32] 220	[32] 350	[32] 221	[32] 188	[32] 223	Mar	240	
R. Clyde: Carstairs to Thankerton	-	60	(157)	125	393	Nov	193	
Black Cart Water	[33] 149	[33] 163	[33] 180	[33] 244	[33] 187	Jan	185	
Sites of national importance in Great Britain								
Loch Leven	94	97	98	134	144	Feb	113	
R. Nith: Keltonbank to Nunholm	-	75	(115)	100	146	Dec	109	
Loch of Spiggie	180	-	-	-	24	Nov	102	
Loch Insh & Spey Marshes	115	82	-	-	-		99	
Loch of Wester	-	98	114	(123)	45	Nov/Jan	95	
Loch a'Phuill	-	-	23	101	142	Nov	89	
Wigtown Bay	72	59	75	102	134	Mar	88	
R. Tweed: Kelso to Coldstream	88	48	(138)	105	50	Feb	86	
Loch Eye/Cromarty Firth	(89)	120	52	28	126	Oct	83	
R. Tweed: Rutherford	110	36	-	29	[31] 108	Dec	71	
Loch of Lintrathen	(1)	67	(77)	(36)	68	Dec	71	
Threave Estate	(31)	2	85	-	117	Mar	68	▲
Tyninghame Estuary	44	65	44	113	76	Dec	68	
Merryton Ponds	67	72	74	58	70	Jan/Mar	68	
Lower Derwent Valley	42	96	61	45	81	Dec	65	
Milldam & Balfour Mains Pools	46	87	76	[31] 49	[31] 53	Dec	62	
Humber Estuary	(5)	(13)	12	16	155	Mar	61	▲
Linton Pond	60	-	-	-	-		60	▲
Loch Heilen	51	51	99	38	-		60	
Dornoch Firth	31	13	73	89	84	Dec	58	▲
Barons Folly	20	(123)	[31] 73	0	71	Mar	57	▲
Sites of all-Ireland importance in Northern Ireland								
R. Lagan: Flatfield	135	[31] 76	152	-	-		121	▲

Sites no longer meeting table qualifying levels

Loch of Skaill

Internationally or nationally important sites not counted in last five years

Easterloch/Uyeasound
Islesteps
R. Teviot: Kalemouth to Roxburgh
R. Tweed : Magdalenehall

Other sites surpassing table qualifying levels in 1999-2000

Strangford Lough	177	Dec	Clyde Estuary	59	Mar
Duddon Estuary	78	Mar	R. Earn: Millands Marsh & Floods	59	Nov
Tarbat Ness to Rockfield	70	Feb	Glaslyn Marshes	57	Jan
Loch Connell	63	Mar	Shearington Pond	56	Dec

SWAN GOOSE

Anser cygnoides

Escape

Native range: Eastern Asia

Two sites held more than one bird: there were 19 at Etherow Country Park in January, and 12 were recorded at Esthwaite Water in July (having held 15 in 1997-98 and none in 1998-99). Singles were noted at a further six sites in 1999-2000.

BEAN GOOSE

Anser fabalis

International threshold (*fabalis*): 800
Great Britain threshold: 4*†
All-Ireland threshold: +*
* 50 is normally used as a minimum threshold

GB max: 313 Nov/Dec
NI max: 0
% young: 4.6 brood size: n/a

Typically, the only flocks of any size were those at the Middle Yare Marshes, Norfolk and the Slamannan Plateau, Stirling, although the fortunes of these two flocks of Taiga Bean Goose *A. f. fabalis* were rather different. Still the largest of the two, the Yare flock was lower than the current five year peak mean and again present for a very short period due to increasingly early departures. The exact arrival date was unknown; the first count on 12 November revealed 125 birds and the peak count of 227 was recorded just once, on 31 December. Three days later, 199 of these left the area, equalling the earliest recorded date of departure for the majority of the flock (M. Parslow-Otsu *in litt.*). The final departures occurred between 1st and 4th February. Productivity in this flock was estimated at 4.6% young (M. Parslow-Otsu *in litt.*), a typically low proportion of juveniles.

In contrast, the Slamannan flock increased for the fourth consecutive winter and the peak count was 23% higher than the current five year peak mean. The first birds, a flock of 100, were noted on 6 October, rising to 167 by 23 October with a peak of 188 on 12 November. This flock remained until at least 2 February, when 180 were counted, with the last birds, a group of 103, seen on 19 February (A. MacIver in litt.).

Elsewhere, Bean Geese were very scarce during 1999-2000. Just two locations held more than four birds and for the second year in succession none were recorded at North Warren & Thorpeness Mere.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
Middle Yare Marshes	[22] 195	[22] 224	[22] 266	[22] 296	[13] 227	Dec	242
Slamannan Plateau	[5] 123	[5] 127	[5] 157	[5] 168	[5] 188	Nov	153
Heigham Holmes	103	0	0	0	-		26
North Warren & Thorpeness Mere	48	36	12	0	0		19
Lower Derwent Valley	[31] 11	18	11	42	7	Jan	18
Ouse Washes	[31] 22	34	[31] 9	7	9	Feb	16

† *as the British threshold for national importance is so small, a qualifying level of 10 has been chosen to select sites for presentation in this report*

PINK-FOOTED GOOSE

Anser brachyrhynchus

International threshold: 2,250
Great Britain threshold: 2,250
All-Ireland threshold: +

GB max: 212,493 Nov
NI max: 3 Oct
% young: 17.8 brood size: 2.2

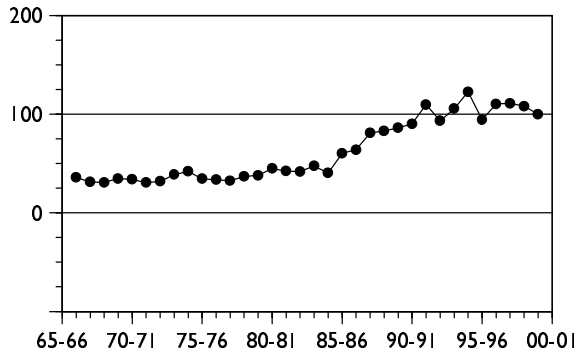


Figure 14. Annual indices for Pink-footed Goose in GB

The 40th national grey goose census in October and November 1999 (Hearn 2000a) revealed a lower than expected total. The October census, the best time to count this population, produced a low total, thought to have arisen due to a late arrival of part of the population during the autumn. Consequently, the November census produced the highest estimate of 212,493. However, this is believed to be an undercount due to the omission of some sites from this count, but even if these sites are taken into account, it is likely there was a small decrease in population size between 1998 and 1999. Nevertheless, this does not affect the long-term trend of this population, namely one of stability for the past ten years.

Peak counts at the most important sites tended to be slightly lower than their current five year peak mean. The most notable of these was the roost at Snettisham, where just 57% of the peak mean was recorded in 1999-2000. However, this decrease was accommodated at the two other roosts in north Norfolk (Holkham Bay and Scolt Head) where increases of 8% and 52% respectively were recorded. The other major roosts in Norfolk, Horsey Mere and Breydon Water/Berney Marshes, also continue to attract increasing numbers of Pinkfeet. Although no counts were received from the former of these sites, anecdotal reports suggest this to be the case.

Other notable changes were recorded at Loch of Lintrathen, where the number of roosting Pinkfeet has increased in each of the past four years. In 1999-2000 the number there was 138% greater than the current five year peak mean, and this site achieved international importance for the first time. Marked increases were also recorded at Loch Mullion (up 144% on the mean), Fala Flow (up 54%) and Gladhouse Reservoir (up 38%).

In addition to Snettisham, notable decreases were also recorded at a number of key sites, reflecting the relatively dynamic nature of this species' winter distribution. At Dupplin Lochs, another fairly low peak count was recorded and at Aberlady Bay, although annual peak counts at these sites are often erratic and do not indicate declining trends. In contrast, numbers at Cameron Reservoir were low for the third time in the past five years and use of this site may be in decline. At Loch Eye/Cromarty Firth, there can be no doubt that Pinkfeet are abandoning the site as a roost. Numbers there have decreased dramatically over the last five years and the peak count in 1999-2000 was just 2% of the mean. Other low counts at sites such as Drummond Pond and Loch Mahaick are not unprecedented, but the complete lack of use of Loch Tullybelton was most unexpected. On the Solway Estuary, despite a large increase on the very low count of 1998-99, the peak still remained relatively low.

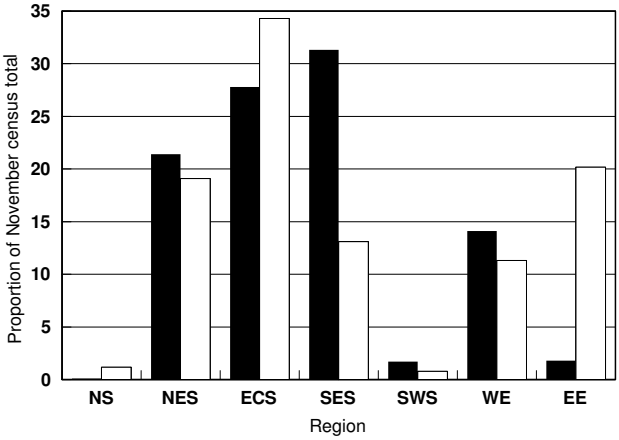


Figure 15. The regional distribution of Pink-footed Geese in Britain in October (black bars) and November (white bars) 1999. Key: NS - north Scotland, NES - northeast Scotland, ECS - east central Scotland, SES - southeast Scotland & northeast England, SWS - southwest Scotland & northwest England, WE - west England, EE - east England.

Productivity during 1999 was moderate, with 17.8% young in autumn flocks (mean for 1990-99 is 17.6%) and the mean brood size of 2.2 young per successful pair exactly matched the average for the past ten years. Hunting mortality in Iceland completed the set of average measures for 1999, with the total of 13,614 shot being very similar to the mean of 13,292 for 1995-99 (Icelandic Wildlife Management Institute).

Recent research on Pinkfeet has largely concerned the Svalbard population, although the results are directly applicable to the birds in the UK. Therkildsen & Madsen (2000) concluded that the marked increase in acreage of winter wheat in Denmark, which is a reliable and profitable food source even in severe winters, has allowed Pinkfeet to modify their wintering strategy and spend increasing periods of time further north than previously possible.

Finally, the proposed development of a hydroelectric power station at Eyjabakkar, in south-east Iceland, as reported in Pollitt *et al*. (2000), has been shelved indefinitely. This is excellent news for the protection of what remains to be the largest known concentration of moulting Pink-footed Geese.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
SW Lancashire	[34] 31,530	[34] 41,680	[34] 28,960	[34] 36,260	[34] 29,955	Oct	33,677
Loch of Strathbeg	[34] 48,500	32,000	[34] 33,556	37,078	31,031	Nov	36,433
West Water Reservoir	[34] 31,500	[31] 55,000	38,700	[34] 21,670	[34] 28,000	Oct	34,974
Dupplin Lochs	[34] 35,000	[34] 40,500	[34] 29,850	[34] 42,500	[34] 22,800	Oct	34,130
Snettisham	[34] 39,130	[34] 35,930	[34] 40,350	35,555	[34] 19,450	Feb	34,083
Holkham Bay	[34] 19,230	[34] 26,000	[34] 33,700	[34] 34,100	[34] 31,190	Dec	28,844
Montrose Basin	[34] 18,500	[34] 17,150	[34] 35,000	[34] 33,012	[34] 18,480	Oct	24,428

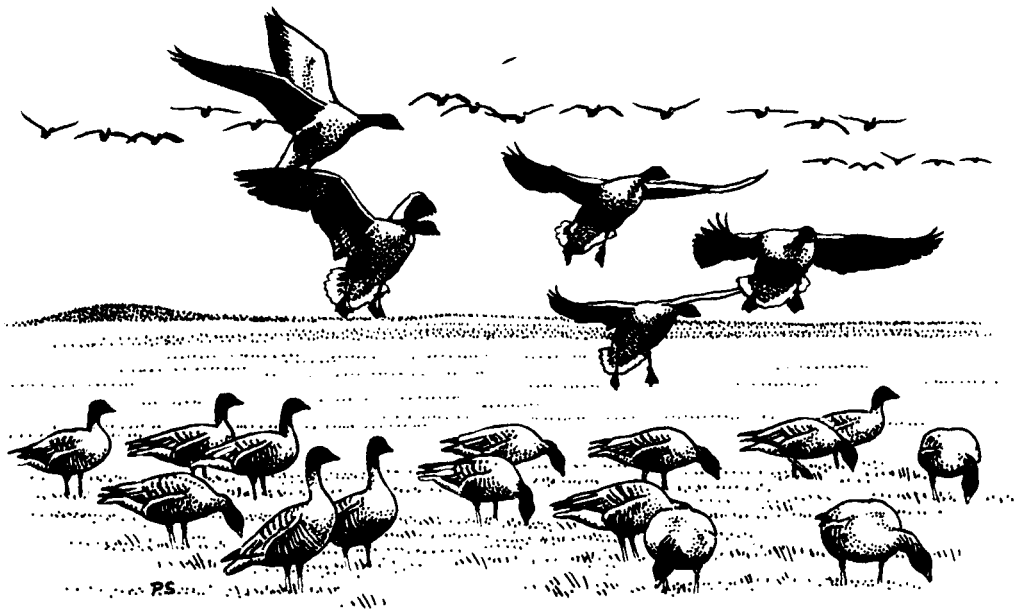
	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Scolt Head	[34] 15,635	17,900	18,800	[34] 28,510	[24] 35,180	Dec	23,205	
Hule Moss	[31] 24,900	19,400	[34] 19,675	11,253	[31] 19,100	Oct	18,866	
Ythan Estuary/Slains Lochs	[34] 25,000	[34] 17,400	[34] 12,200	[34] 16,400	[34] 15,500	Oct	17,300	
Loch Leven	[34] 17,900	[34] 18,150	[34] 14,740	[34] 14,100	[34] 11,540	Oct	15,286	
Carsebreck & Rhynd Lochs	[34] 13,500	[34] 12,000	[34] 13,560	[34] 18,500	[34] 15,400	Oct	14,592	
Solway Estuary	[34] 22,523	[34] 19,586	[34] 17,971	[34] 3,710	[34] 6,434	Mar	14,045	
Aberlady Bay	[34] 11,320	[34] 4,650	[34] 6,540	[34] 13,260	[34] 4,840	Oct	8,122	
Carse of Stirling	[34] 6,700	-	-	-	-		6,700	
Cameron Reservoir	[34] 11,260	[34] 3,460	[34] 11,280	4,104	3,168	Oct	6,654	
Wigtown Bay	7,229	7,280	5,234	5,029	6,459	Feb	6,246	
Tay Estuary	[34] 6,117	[34] 8,897	[34] 3,765	[34] 5,355	[34] 4,630	Nov	5,753	
Fala Flow	[34] 2,437	[34] 5,000	[34] 7,500	[34] 2,100	[34] 7,550	Oct	4,917	
R. Clyde: Carstairs to Thankerton	-	-	8,000	948	5,650	Mar	4,866	
Loch Tullybelton	[34] 1,395	[34] 4,658	[34] 8,000	[34] 8,100	[34] 0	Oct	4,431	
Loch Long	[34] 650	-	-	[34] 7,200	[34] 5,417	Nov	4,422	
Loch of Lintrathen	-	[34] 920	[34] 2,800	[34] 3,350	[34] 10,400	Nov	4,368	▲
Gladhouse Reservoir	[34] 3,290	6,200	[34] 5,000	[34] 1,300	[34] 6,000	Oct	4,358	
Upper Cowgill Reservoir	[34] 4,560	[34] 6,060	[34] 6,000	[34] 1,000	[34] 2,900	Oct	4,104	
Morecambe Bay	5,503	8,671	3,000	189	2,235	Mar	3,920	
Breydon Water & Berney Marshes	1	1,100	5,500	5,500	6,600	Feb	3,740	
Holburn Moss	[34] 300	2,100	4,500	[34] 4,350	[34] 2,000	Nov	2,650	
Drummond Pond	[34] 110	[34] 7,000	[34] 3,300	[34] 2,644	[34] 170	Oct	2,645	
Tay-Isla Valley	[34] 2,785	[34] 2,911	[34] 229	[34] 4,000	[34] 2,700	Nov	2,525	
Loch Eye/Cromarty Firth	[34] 9,350	[34] 1,570	465	[34] 295	51	Feb	2,346	
Loch Mahaick	[34] 600	[34] 2,700	[34] 6,465	[34] 1,300	[34] 600	Oct	2,333	
Loch Mullion	[34] 750	[34] 0	[34] 3,000	[34] 2,000	[34] 5,500	Oct	2,250	▲

Sites no longer meeting table qualifying levels
Haddo House Lakes

Internationally or nationally important sites not counted in last five years
Crombie Reservoir
Forth & Teith Valleys

Other sites surpassing table qualifying levels in 1999-2000

Whitton Loch	[34] 2,716	Oct
Humber Estuary	[34] 2,410	Nov
Duddon Estuary	3,000	Mar
Loch Flemington	[34] 2,500	Nov



EUROPEAN WHITE-FRONTED GOOSE

Anser albifrons albifrons

International threshold: 6,000
Great Britain threshold: 60
All-Ireland threshold: +

GB max: 3,862 Jan
NI max: 0

% young: 21.0 brood size: 2.2

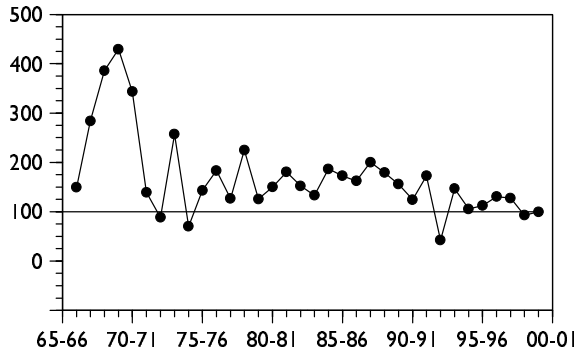


Figure 17. Annual indices for European White-fronted Goose in GB

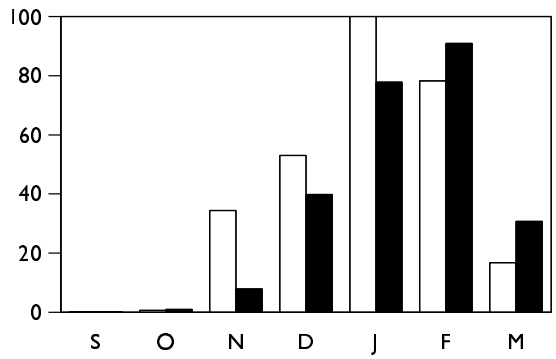


Figure 18. Monthly indices for European White-fronted Goose in GB (white bars 1999-2000; black bars 1994-95 to 1998-99)

Despite a slight increase in the index value, the peak total of European Whitefronts remained low; in fact, the fifth lowest year since the mid 1960s. This trend was repeated at the Severn Estuary, the key site in Britain, where there was a slight increase compared to the previous year, but numbers remained below 2,000.

Of the thirteen other sites of national importance, counts at seven were lower than their current five year peak mean and four were higher. No counts were received from two others. The most notable decrease was at the Swale, currently the second most important site in Britain, where just 35% of the five year peak mean was recorded, while numbers slumped further on the Lower Derwent Valley. Numbers were also very low on the Thames Estuary, although this was compensated to some degree by increases on other sites in southeast England, such as the Crouch-Roach Estuary and Hamford Water.

The arrival in 1999-2000 was slightly earlier than average in recent years, almost 40% of the peak count already present by November and increasing to a peak in January, rather than the more usual February. As is typical of recent years, birds departed rapidly during late February and early March.

Following poor breeding success in 1998, productivity in 1999, measured among birds at WWT Slimbridge, rose to 21%, though this was relatively low for a year with high lemming abundance in the arctic.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Severn Estuary	2,170	2,780	2,501	1,840	1,931	Jan	2,244
Swale Estuary	2,088	1,604	1,402	973	455	Jan	1,304
Heigham Holmes	1,043	(640)	475	740	-		753
North Norfolk Coast	476	491	290	383	343	Jan	397
North Warren & Thorpeness Mere	450	302	220	[31] 500	[31] 350	Mar	364
Alde Complex	427	317	60	230	323	Dec	271
Dungeness Gravel Pits	8	355	240	320	[31] 340	Mar	253
Walland Marsh	[7] 300	328	198	198	230	Feb	251
Minsmere Levels	83	215	236	196	-		183
Lower Derwent Valley	244	114	152	60	18	Oct	118
Middle Yare Marshes	180	47	107	84	155	Jan	115
Breydon Water & Berney Marshes	64	69	90	91	51	Jan	73
Thames Estuary	59	146	69	76	7	Jan	71
Crouch-Roach Estuary	70	60	23	4	147	Jan	61 ▲

Internationally or nationally important sites not counted in last five years
Kessingland Levels

Other sites surpassing table qualifying levels in 1999-2000

Brent Reservoir	110	Jan
Hamford Water	74	Jan

GREENLAND WHITE-FRONTED GOOSE

Anser albifrons flavirostris

International threshold: 300
Great Britain threshold: 140
All-Ireland threshold: 140

GB max: 20,660 Nov
NI max: 117 Jan

% young: 9.5 brood size: 3.2

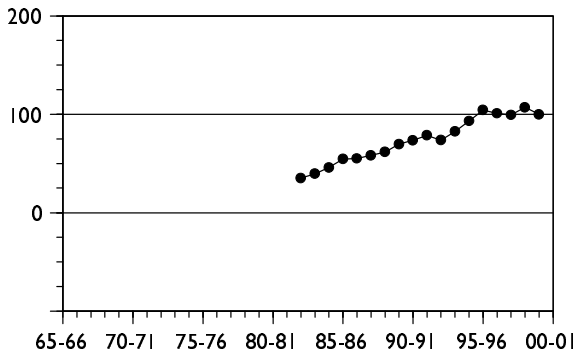


Figure 19. Annual indices for Greenland White-fronted Goose in GB

The peak count for Britain, obtained during the autumn international census by the Greenland White-fronted Goose Study (Fox & Francis 2001), revealed a slight decrease on the previous year, but no significant change in the population for the past five years. The total population estimate in the spring, including those birds wintering in the Republic of Ireland, was fewer than 32,000, suggesting a decrease of around 10% following the poor breeding success in 1999 (Fox & Francis 2001).

Most internationally important sites experienced decreases compared to the previous year. However, with the exception of Stranraer Lochs, where just 69% of the current five year peak mean was recorded, these were small and can be largely accounted for by the increases at nearby Islay and Rhunahaorine. Similarly, only minor changes were recorded at the sites of national importance, with slightly more decreases than increases. The most southerly regular wintering site remaining in Britain, the Dyfi Estuary, finally slipped from the list of nationally important sites.

The first arrival into Britain was a flock of 15 birds on Islay on 29 September. The main arrivals took place between 5th and 15 October, though some arrived as late as the first week of November. In spring, most geese departed from Islay on 15th and 16 April.

Productivity was well below the average for the past 15 years. On Islay, the proportion of young was estimated at 10.4% (*cf* mean of 15.1% for 1982-98) and in the rest of Scotland it was 8.0% (*cf* 15.0%), giving an overall value of 9.5%. This was primarily due to severe weather conditions in west Greenland during the summer. Irish wintering birds, which breed further north than Scottish birds, experienced even worse weather conditions and only produced 5.5% young, the worst breeding season on record (Fox & Francis 2001).

Hunting mortality in Iceland during autumn 1999 accounted for 3,285 birds, slightly higher than the mean for 1995-99 (3,180).

Recently published research has shown how Greenland Whitefronts benefit from associating with pre-breeding Greylag Geese on the Icelandic spring staging areas (Kristiansen *et al*. 2000a). By doing so, they are able to spend less time looking for predators and have up to 9% more time for feeding and other activities compared to birds in single species flocks. Kristiansen *et al*. (2000b) also showed how these birds are capable of fine-grained selection of the most profitable forage (in terms of nitrogen content) even during bouts of high peck rates. Not only do they select for the highest quality forage species, but they also select the part of each plant with the with the highest nutrient value and the individual plants with the largest nutrient value.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Islay	[26] 14,495	[26] 12,964	[26] 13,414	[26] 13,560	[10] 14,474	Nov	13,781
Tiree	[10] 1,387	[10] 1,455	[10] 1,464	[10] 1,444	[10] 1,347	Mar	1,419
Rhunahaorine	[10] 1,360	[10] 1,272	[10] 1,193	[10] 1,532	[10] 1,585	Mar	1,388
Machrihanish	[10] 1,339	[10] 1,629	[10] 931	[10] 1,579	[10] 1,322	Mar	1,360
Coll	[10] 962	[10] 1,047	[10] 1,052	[10] 1,122	[10] 1,014	Apr	1,039
Stranraer Lochs/West Freugh	[10] 550	[10] 535	[10] 680	[10] 1,000	[10] 440	Nov	641
Keills Peninsular & Isle of Danna	[10] 414	[10] 333	[10] 441	[10] 425	[10] 290	Mar	381
Loch Ken	[10] 360	[10] 318	[10] 450	[10] 357	[10] (330)	Jan	371

	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Sites of national importance in Great Britain								
Appin/Eriska/Benderloch	[10] 376	[10] 217	[10] 318	[10] 270	[10] 227	Dec	282	▼
Westfield Marshes	[10] 352	[10] 210	[10] 206	[10] 230	[10] 255	Nov	251	
Loch Lomond: Endrick Mouth	[10] 230	[10] 245	[10] 261	[10] 306	200	Nov	248	
Loch Heilen/Loch of Mey	[10] 258	[10] 199	[10] 217	[10] 215	[10] 280	Oct	234	
Bute	[10] 210	[10] 224	[10] 223	[10] 219	[10] 192	Mar	214	
Colonsay/Oronsay	[10] 206	[10] 169	[10] 288	[10] 163	[10] 204	Mar	206	
Clachan/Whitehouse	[10] 191	[10] 184	[10] 203	[10] 196	[10] 232	Mar	201	
Ulva	-	-	-	[10] 191	[10] 103	Nov	147	▲

Sites no longer meeting table qualifying levels
Dyfi Estuary

LESSER WHITE-FRONTED GOOSE

Anser erythropus

Vagrant and escape
Native range: SE Europe and Asia

Singles were seen at Lunford Lake in August and perhaps the same on the Fleet/Way in October, at Weirwood Reservoir in September and October and at Ogden Reservoir in May and July. All are likely to have been escapes.

GREYLAG GOOSE

Anser anser

ICELANDIC POPULATION

International threshold: 1,000
Great Britain threshold: 1,000
All-Ireland threshold: 40*
* 50 is normally used as a minimum threshold

GB max: 73,344 Nov
NI max: 24 Nov

% young: 13.9 brood size: 2.8

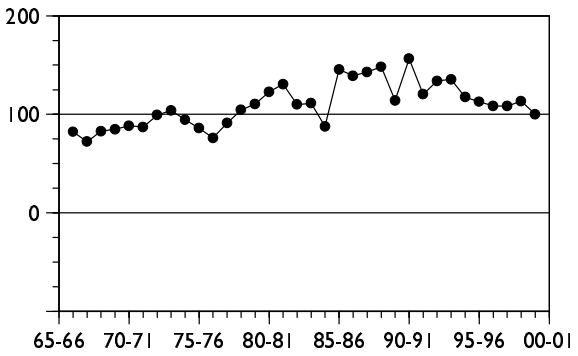


Figure 20. Annual indices for Icelandic Greylag Geese in GB

The 40th national grey goose census in autumn 1999 revealed a maxima of 75,866 Icelandic Greylag Geese during November (Hearn 2000a). This represents a decrease of 9% over the previous year and continues the downward trend started in the early 1990s. The index shows that, with the exception of an undercount in 1984, this is the lowest level for the population since 1978. Numbers in Ireland increased slightly to 2,522, largely due to improved coverage of sites during this census. The vast majority of these birds are located at sites in Eire, with only 24 counted in Northern Ireland. It should be noted that the figure published in Pollitt et al. (2000) as the maximum for Northern Ireland (1,913) was in fact the all-Ireland peak count. The NI peak count in 1998-99 was 154 birds.

The arrival during autumn 1999 was typical of recent years, with just under two-thirds of the November peak count recorded during the October census. Their distribution was characteristically concentrated in north Scotland, with a notable increase in east central regions by November.

Of the key sites of international importance, both the two major roosts in Aberdeenshire supported below average numbers for the second year in succession. Whilst Lochs Davan & Kinord remain the principle site for the population and the numbers there have shown signs of returning to former levels after the very low peak of 1998-99, the importance of this site appears to be declining. However, it is still not possible to exclude the influence that the change in counting effort that took place two years ago may be having. Nearby, a third successive decrease was recorded at the Loch of Skene, meaning just 58% of the current five year peak

mean was seen there. Although this was considered to be an undercount, it is likely that a complete count would have still recorded a decrease and the overall trend at this site appears clear.

Similar declines are occurring at other key roost sites in Aberdeenshire and further south, for example at Haddo House Lakes, where 24% of the current five year peak mean was counted, and Loch of Lintrathen with 49% of the current five year peak mean. However, the long-term trend at these sites is currently less clear.

In Orkney, which has dramatically increased in importance for Icelandic Greylag Geese in recent years, numbers appear to have stabilised to some extent. This area is the most important of several where difficulties in determining the origins of the Greylags continue to hamper the accurate estimation of population size in this and the other two populations of Greylag Goose occurring in Scotland. Research and monitoring that provides a much improved understanding of the dynamics of these populations is urgently needed.

Two sites attained international importance. The first, Threipmuir & Harlaw Reservoirs supported an remarkable count of more than 5,000 birds. At the other, on the Rivers Eamont & Eden, a more modest increase was recorded but this is another area where doubts exist about the provenance of the Greylags and it is possible that at least a proportion of these birds are of naturalised origin.

Other notable counts were received from nine sites that do not qualify for international importance including a large count at the Ythan Estuary, an area that normally supports very few Greylags. Of interest is a count of 1,282 birds at Lough Foyle in March. Whilst most birds in Northern Ireland are thought to be of naturalised

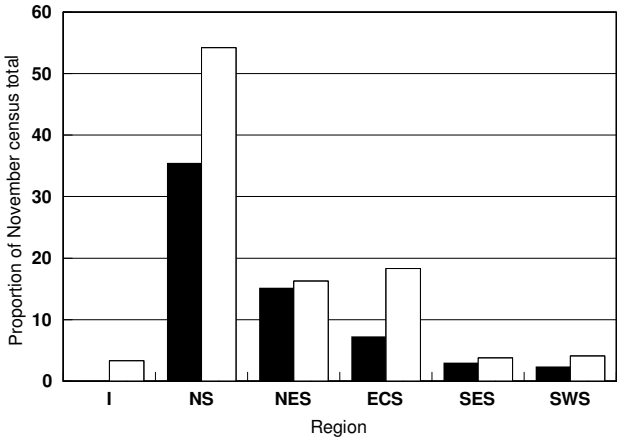


Figure 21. The regional distribution of Icelandic Greylag Geese in Britain and Ireland in October (black bars) and November (white bars) 1999. Key: I - Ireland, NS - north Scotland, NES - northeast Scotland, ECS - east central Scotland, SES - southeast Scotland & northeast England, SWS - southwest Scotland & northwest England.

stock, the size and timing of this count suggests that these may have been a pre-migratory gathering of Icelandic birds.

Productivity during 1999 was slightly below average with 13.9% young (*cf* a mean of 16.7% for 1990-99), though mean brood size of 2.8 young per successful pair compared favourably with a mean of 2.5 for the past ten years.

Hunting mortality in Iceland continued to fall to its lowest level since records began in 1995. However, it remains high and 33,901 were shot, compared to an average of 37,111 for the past five years. This decrease is a consequence of increased awareness among hunters there of the vulnerability of this population. However, despite this, the long-term trend for Icelandic Greylags is still one of decline and it may become necessary to enforce stricter hunting regulations to bring about a real change in fortunes for this population.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Lochs Davan & Kinord	[34] 36,525	[34] 26,185	[34] 24,346	[34] 4,400	[34] 10,000	Nov	20,291
Orkney Islands	[34] 9,931	[34] 9,338	[34] 13,361	[34] 18,110	[34] 17,933	Nov	13,735
Loch of Skene	12,300	[34] 12,876	[34] 11,200	9,890	[34] (6,110)	Oct	11,567
Caithness Lochs	[34] 12,376	[34] 5,378	[34] 7,200	[34] 12,731	[34] 10,017	Nov	9,540
Loch Eye/Cromarty Firth	[34] 8,716	[34] 5,320	[34] 5,416	[34] 9,181	[34] 5,674	Nov	6,861
Loch Spynie	[34] 5,500	[34] 5,500	[34] 3,000	[34] 6,500	[31] 3,000	Dec	4,700
Bridge of Earn	[34] 3,000	-	-	-	-		3,000
Loch of Lintrathen	2,300	[34] 960	[34] 7,200	[34] 2,750	[34] 1,440	Oct	2,930
Haddo House Lakes	[34] 4,900	[34] 4,360	[34] 1,110	[34] 3,000	[34] 670	Nov	2,808
Dornoch Firth	[34] 1,937	1,132	3,211	2,352	[34] 3,351	Nov	2,397
Findhorn Bay	[34] 3,150	[34] 1,860	[34] 2,350	[34] 1,760	[34] 2,600	Oct	2,344
Tay-Isla Valley	[34] 1,661	2,096	[34] 1,155	[34] 4,640	[34] 2,075	Nov	2,325
Bute	[34] 4,280	[34] 1,797	[34] 1,200	[34] 1,055	[34] 1,780	Feb	2,022
Tay Estuary	[34] 1,358	[34] 1,080	[34] 650	4,350	[34] 2,221	Nov	1,932

	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Drummond Pond	[34] 1,680	[34] 1,021	[34] 1,834	[34] 2,350	[34] 1,900	Nov	1,757	
Carse of Stirling	[34] 1,535	-	-	-	-		1,535	
Threipmuir & Harlaw Reservoirs	[34] 700	620	397	219	5,192	Mar	1,426	▲
Loch Fleet Complex	[34] 960	[34] 1,200	[34] 843	[34] 2,970	980	Oct	1,391	
Munlochy Bay	[34] 200	600	[34] 945	[34] 3,702	[34] 1,299	Nov	1,349	
Strathearn (West sites)	[34] 2,665	[34] 0	-	-	-		1,333	
Loch of the Clans	-	[34] 1,942	[34] 300	-	-		1,121	
Loch Garten	[34] 1,987	[34] 587	[34] 735	-	-		1,103	
Stranraer Lochs	[34] 760	-	[34] 645	2,717	[34] 176	Oct	1,075	
R. Eamont & Eden: H'pot to E'hall	-	601	1,023	1,344	1,300	Mar	1,067	▲
Kilconquhar Loch	1,135	1,300	1,216	797	[34] 844	Nov	1,058	
Birgham Haugh	-	1,035	-	-	-		1,035	

Internationally or nationally important sites not counted in last five years

Fincastle Loch
R. Spey: Boat of Balliefirth
R. Eamont: Watersmeet to Pooley Bridge
R. Tay: Dunkeld
Corby Loch

Sites no longer meeting table qualifying levels

Lower Bogrotten
Upper Tay Sites
R. Eden & Eamont confluence
Lindisfarne
Holburn Moss
Carlhurlie Reservoir

Other sites surpassing table qualifying levels in 1999-2000

Ythan Estuary/Slains Lochs	2,880	Dec
Loch Ken	1,742	Dec
Muir o' Lea Lochan	1,356	Mar
Eden Estuary	1,200	Mar
Carsebreck & Rhynd Lochs	[34] 1,060	Nov
Milton Loch	1,000	Feb
R. Forth: Meiklewood	1,000	Mar
Summerston	1,000	Nov

NORTHWEST SCOTTISH POPULATION

International threshold: 50
Great Britain threshold: 50

GB max: 6,434 Aug **% young: 29.1** **brood size: 2.9**

As with some other goose populations that frequent remote parts of Scotland, the annual monitoring effort currently in place for native Greylag Geese does not allow a full estimation of population size to be made each year. The index derived from the counts that are undertaken suggests that the population did increase during the previous twelve months, the peak total being 8% higher than in 1998-99. However, the full census conducted in 1997 recorded a minimum of 9,618 birds (Mitchell *et al*. 2000) and so it is likely that the population now consists of at least 10,000 individuals.

The six key sites for this population listed in the table include a new addition, Colonsay/Oronsay. A notable count was also made at Kentra Moss/Loch Shiel in December. Of the five other sites, the count on North Uist was 23% greater than the five year peak mean. Numbers on South Uist and Tiree also remained above average, but decreases were recorded on Coll and, to a lesser extent, Benbecula.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Tiree	[27] 1,451	[28] 2,475	[27] 2,417	[2] 3,137	[28] 3,109	Nov	2,518
North Uist	[21] 1,345	[21] 1,630	[21] 1,670	[21] 1,318	[21] 1,808	Aug	1,554
South Uist	[21] 1,157	[21] 1,270	[21] 1,046	[21] 1,336	[21] 1,362	Aug	1,234
Coll	[27] 707	[28] 1,016	[28] 953	[28] 912	[28] 587	Mar	835
Benbecula	[21] 264	[21] 440	[21] 595	[21] 567	[21] 374	Aug	448
Colonsay/Oronsay	-	[28] 175	[28] 225	[28] 208	[28] 174	Mar	196

RE-ESTABLISHED POPULATION

Naturalised re-establishment†

GB max: 21,004 Jan
NI max: 1,663 Mar

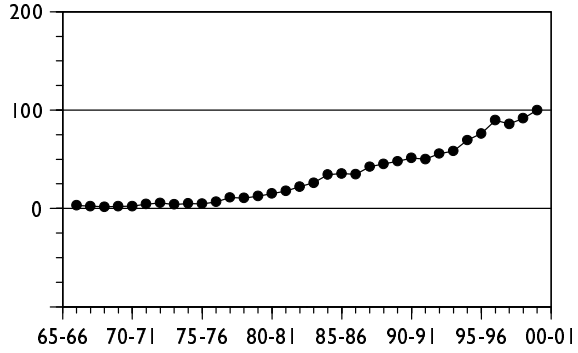


Figure 22. Annual indices for naturalised Greylag Geese in GB

The long-term increase in re-established Greylags continued during 1999-2000, reaching yet another all-time high. Similarly in Northern Ireland, there was a large increase on the previous peak count of 967. However, the accuracy of this estimate is compromised by uncertainties over the true status of some Greylag Geese there. Efforts to gain a better understanding of this are currently being developed and the national census of naturalised geese that took place during summer 2000 will provide an important starting point.

As in previous years, the most important area for this population was the North Norfolk Coast, where, despite a slight decrease in the peak count, the five year peak mean increased still further. A similar trend was noted at the Lower Derwent Valley, the second most important site and the only other to consistently hold more than 1,000 birds, although the decrease in numbers since the previous year was considerably sharper, with just 69% of the current five year mean recorded. However, such fluctuations in local population size are typical of re-established Greylag Geese and many of the other sites listed also showed such unpredictable increases or decreases in the number of birds.

In contrast, some sites do show clearer trends, for example the increases at Nosterfield Gravel Pits, although presumably the same birds were involved in the high count on the new workings, and Hornsea Mere, and the decreases at Llyn Traffwll, Wynyard Lake, Emberton Gravel Pits and Hamford Water.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 300 or more birds in Great Britain †							
North Norfolk Coast	1,204	1,669	2,177	1,892	1,837	Aug	1,756
Lower Derwent Valley	1,304	1,200	1,063	1,200	763	Nov	1,106
Bolton-on-Swale Gravel Pits	572	955	635	508	880	Sep	710
Tophill Low Reservoirs	481	561	450	990	850	Dec	666
Bough Beech Reservoir	650	-	-	-	-		650
Sutton/Lound Gravel Pits	458	570	650	-	800	Jan	620
Alton Water	815	514	647	542	550	Dec	614
Orwell Estuary	237	440	[37] 799	563	[37] 989	Nov	606
Tattershall Pits	-	700	340	[31] 770	570	Dec	595
Swale Estuary	673	456	589	574	653	Oct	589
Wash	511	747	314	683	476	Sep	546
Nosterfield Gravel Pits	23	129	771	682	993	Dec	520
Kirkby-on-Bain Gravel Pits	-	(64)	627	376	541	Nov	515
Little Paxton Gravel Pits	644	518	655	300	399	Sep	503
Ouse Washes	[31] 532	521	453	276	[31] 596	Oct	476
Heigham Holmes	373	538	410	577	-		475
Humber Estuary	126	459	854	419	443	Oct	460
Langtoft West End Gravel Pits	550	420	490	635	165	Dec	452
Dungeness Gravel Pits	446	381	473	440	517	Aug	451
WWT Martin Mere	458	420	419	435	460	Sep	438
Llyn Traffwll	466	349	646	464	252	Sep	435
Eccup Reservoir	259	393	368	550	600	Dec/Jan	434
Revesby Reservoir	602	273	571	385	302	Sep	427
Hornsea Mere	-	-	98	441	714	Sep	418
Derwent Reservoir	[31] 950	198	442	360	128	Feb	416
Earls Barton Gravel Pits	486	542	284	363	398	Sep	415
Livermere	335	330	300	334	655	Aug	391
Abberton Reservoir	223	307	297	537	589	Oct	391