

**REPORT  
OF THE 2010/2011  
INTERNATIONAL CENSUS OF  
GREENLAND WHITE-FRONTED GEESE**

by

**GREENLAND WHITE-FRONTED GOOSE STUDY**



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*Final report – October 2011*

## SUMMARY

*This report presents the results of the surveys of the Greenland White-fronted Goose on the wintering grounds in spring 2011, combining counts from all the British resorts (coordinated by the Greenland White-fronted Goose Study) and those in Ireland (co-ordinated by the National Parks and Wildlife Service). A combined global total of 25,756 Greenland White-fronted Geese were counted, up by 14.4% (3,245 birds) on the last world population estimate of 22,511 in spring 2010, a most encouraging increase after several years of decline in overall numbers. No counts were available from Norway where very small numbers may winter.*

*Excellent coverage was again achieved in Ireland in spring 2011 which provided 9,733 from Wexford (compared to 8,381 in spring 2010 and where over 10,000 were counted in February 2011) and 2,777 (2,517 last year) from the rest of Ireland. Missing spring counts were substituted for eight Irish regular wintering resorts, which amounted to only 3.6% of the Irish total. Complete censuses of all known Greenland White-fronted Goose wintering haunts in Britain found totals of 12,435 birds in autumn 2010 and 13,246 in spring 2011. This compares with 13,269 and 11,841 respectively that were reported in the previous season at the same times of year. The 2010/2011 totals comprised 7 birds reported in England, 59 and 63 in Wales, 6,891 and 6,911 on Islay (compared with 7,079 and 5,744 respectively last season) and 5,484 and 6,265 in the rest of Scotland in autumn and spring respectively. Coverage in Britain was more or less complete, all resorts were counted at least once in the season, including the Small Isles (not covered in many recent years), where 3 were seen in January. Spring counts were missing from the specified count period from 13 resorts, but all were substituted with counts undertaken very close to the defined dates, amounting to 5.0% of the British total.*

*Breeding success amongst the British resorts was substantially up on last year and on many of the preceding years at 21.2% young ( $n = 6,820$  aged), compared to 12.9% last year; mean brood size was 3.37 ( $n = 330$  broods). This included 22.9% on Islay, the third highest percentage young recorded since 1962, well above the average of 13.9% for 1962-2010 inclusive, 13.1% for 1982-2010 and the highest since 1985 (27.3%). Mean brood size on Islay was 3.93 ( $n=112$ ). The percentage of first winter birds exceeded 20% in Caithness, on South Uist, at Appin, Moine Mhor, Machrihanish, Clachan, Jura and Loch Ken. In Ireland, the percentage young amongst aged flocks in 2010/11 was not nearly as high as in Britain, 14.4% (based on 6,346 aged individuals, mean brood size 3.27,  $n = 210$ ), but this was heavily biased by the 14.7% amongst 5,266 aged at Wexford, where the mean brood size was 3.39 based on 168 broods. Elsewhere in Ireland, reproductive success was 13.1% ( $n = 1,080$ ), mean brood size was 2.81 ( $n=42$ ).*

*The spring in 2010 in west Greenland was mild and snow free, so the geese arrived to warm temperatures and an advanced thaw, in contrast to conditions in many recent springs back to the early 1990s. The summer was also warm and relatively dry which doubtless also contributed to more favourable breeding conditions. Summer 2010 was a real “bumper” year for the production of offspring amongst the population of Greenland White-fronted Geese, supporting a modest upturn in global numbers. Given the general poor reproductive success of recent years, one good year is unlikely to make a long term difference to the fortunes of the population, especially if breeding success in future years returns to previously low levels of the 1990s and 2000s. The flyway management plan for the population was recently discussed at the AEW Technical Committee and will be presented to the Meeting of Parties for adoption in France in May 2012, which will hopefully make significant contributions to safeguarding the population in the future.*

## INTRODUCTION

The 2010/2011 survey was the twenty-ninth annual census of Greenland White-fronted Geese co-ordinated in Great Britain by the Greenland White-fronted Goose Study and in Northern Ireland and the Republic of Ireland co-ordinated by the National Parks and Wildlife Service. Table 1 shows the most recent total census data available to the present, although counts from Ireland are missing from 2007. Unfortunately, we have no counts from southern Norway, where very small numbers may regularly winter, but otherwise the spring 2011 count represents a full survey of all known winter haunts for this population.

*Table 1. Spring population census totals for Greenland White-fronted Geese, 2006-2011. At the time of compilation, collation of count coverage for the rest of Ireland from spring 2007 was incomplete, hence global population totals cannot be estimated for this year.*

	Spring 2006	Spring 2007	Spring 2008	Spring 2009	Spring 2010	Spring 2011
<i>Wexford</i>	7892	9713	7536	8034	8381	9733
<i>Rest of Ireland</i>	2716	-	2559	2623	2622	2777
<i>Islay</i>	7111	6025	7086	6429	5744	6911
<i>Rest of Britain</i>	7176	6428	6027	6076	6097	6335
<b>Population total</b>	<b>24895</b>	<b>?</b>	<b>23208</b>	<b>23162</b>	<b>22844</b>	<b>25756</b>

## ARRIVAL/DEPARTURE DATES

Paul Shimmings reported a single very dark-bellied Greenland White-fronted Goose from Tjøtta near the island of Vega in west Norway (65° 49'N 12° 25'E) on 18-22 September 2010, with two more turning up on 22 September further north at Søvik (65° 55'N 12° 28'E). By 25 September perhaps as many as 12 other Greenland White-fronted Geese had been reported from Norway, mostly along the west coast.

The similar timing of a Greenland White-fronted Goose reported from Savoch, near Loch of Strathbeg on 21 September (Hamish Patton) suggests this was likely an overshoot that missed Iceland completely on autumn migration. Other early reports were of 5 back at Kilpheder on the early date of 27 September (Bill Neill during the Greylag Goose count on the Uists), 2 on 29 September at Stranraer reported by George Christie, followed by 2 on Unst, Shetland on 5 October and 2 at Haroldswick, Shetland on 7 October. Stan Laybourne saw the first 4 back at Broubster Leans on 10 October, rising to 20 on 19 October, with 28 birds in flight later the same day, increasing to 74 by 22 October. Stan saw his first 6 geese at the Loch of Mey flock on 23 October. Bryan Rains reported his first ten geese on the tenth day of the tenth month in the tenth year after 2000 at Fidden on Mull. John Bowler's first 4 geese were back on Tiree on 15 October and 20+ flew over Loch Souleseat in Dumfries and Galloway next day (A. & G. Chambers). Two Greenland White-fronted Geese were seen flying north at Littleton on Severn in southern Gloucestershire on 17 October and a single bird turned up at Martin Mere, Merseyside on 18 October. The first report of the Endrick Mouth, Loch Lomond flock was of 2 on 20 October, when 20 were seen at Hougharry, North Uist and the Dyfi flock numbered 34 (all adults) on 22 October. Two adult birds were photographed amongst Pink-feet at Vane Farm, Loch Leven Perth and Kinross on 25 October and Peter Cunningham and Martin Scott first saw 14 back at Arnol on Lewis on 28 October, by which date, 600 were back at Loch

Gruinart on Islay with large numbers of Barnacle Geese (RSPB).

Generally arrivals were late, however, mostly towards the end of October and beginning of November. The lone adult at Grindon Lough, Northumberland was first seen on 20 October. There seemed to be a spatter of birds turned up in Cornwall, including 4 at the Hayle Estuary on 27 October, 2 adults at the Walmsley Sanctuary (27 October), 4 (2 adults and juveniles) at Trewey Common (29-30 October), 1 on the Hayle Estuary (31 October – 5 November) and 1 at Sancreed Reservoir (7 November). Geese were first seen on 1 November at The Loons on Orkney (29 geese), 2 November on Mull (4 adults and 2 juveniles at Ardfenaig) with 35 (no juveniles amongst 20 aged) at Loch Beg on 4 November, on Skye on 3 (15 at Ord) and 4 November (7 at Luib) and 26 were the first seen at Cliffe Farm, Loch Shiel on 10 November.

Carl Mitchell spent some time in Iceland during 31 October - 3 November counting Greylag Geese in southern Iceland, where there are increasing numbers staying later behind in autumn. He was inevitably covering some favoured Greenland White-fronted Goose resorts, and as late as 31 October was finding 210 at Krókur, Árnessýsla, 18 in Mýrdalur on 1 November, at least 170 in Austur-Landeyjar and 20 in Vestur-Landeyjar on 2 November and 8 near Þykkvibær on 3 November. Two samples of 75 and 102 from the 210 at Krokur on 31 October contained 21.3 and 23.5% young, whilst 44.4% of the small number of geese in Mýrdalur were young.

In spring 2011, the long staying juvenile Greenland White-fronted Goose that wintered at Drift Reservoir in Cornwall was present until at least 6 April and 12 lingered on the Dyfi until the 9 April. Late reports at resorts included 37 still at Stranraer on 12 April, but most had gone from the usual Tíree haunts by 15 April, with stragglers of 3 on 20 April and 2 lingering to 26 April.

As usual, the Western Isles bore witness to a brisk spring passage of birds departing for Iceland and we are indebted to Steve Duffield for collating many of these on his website (<http://www.western-isles-wildlife.co.uk>). Six Greenland White-fronted Geese flew north with 350 Barnacles at Aird an Runair, North Uist on 24 March, although may have been wintering birds at this time (Brian Rabbitts). On 3 April, 92 White-fronted Geese flew low north-west across Loch Bee late in the afternoon and were later seen over Ardivachar, while 84 White-fronted Geese flew north over Askernish in the afternoon of the same day. Another 42 flew north at Aird an Runair and independently 40 passed northwest over Claddach Baleshare (both North Uist) on the same day. There were reports of 17 flying north at Carinish North Uist at 19:30 on 4 April and 26 flying north-west over Loch Tromasad, North Uist late on the morning of 7 April, with 4 north at Aird an Runair (also North Uist) at the same time. Two hundred and fifty White-fronted Geese flew north over Carinish, North Uist on the evening of 8 April, when Andrew Stevenson had 90 N over Nunton, Benbecula (with 120 NW the next day at Rueval). Many were heard flying over Drimisdale, South Uist on the night of 9 April, with 40 seen flying north over Loch Tormasad, North Uist early morning on 9 April. Another 120 flew over Market Stance, Benbecula early on the morning of 10 April and later 18 flew over Clachan Sands, North Uist on 17 April, when singles were seen at Grenitote and Clachan Farm. The last reports were of a single bird accompanying 11 Greylag Geese flying west at Loch Eynort, South Uist on 18 April and a late lone straggler at Balranald on 7 May.

Elsewhere, the major departure from Wexford started at around 07:00 on 28 March after the geese had been restless and showing signs of practice departures in the days previously.

The first Greenland White-fronted Geese (a flock of 27 including 5 first winter birds out of 17 aged) were seen in southern Iceland by Sveinn Jónsson at Dyrhólaey in Mýrdal on 26<sup>th</sup> March 2011, far earlier than usual (information via [fugl@ni.is](mailto:fugl@ni.is), with thanks to Arnor Sigfusson and Ib Krag Petersen).

## **COUNTS IN BRITAIN**

A full breakdown of the count totals giving the maximum counts per month and the census period totals is presented on page 7. Although there were reports of Greenland White-fronted Geese from Loch of Swannay, Holm, Birsay, Tankerness and North Ronaldsay, again the only regular wintering flock in the Orkneys continues to be associated with the Loons, where numbers were slightly reduced again on those of the previous winter, peaking at 55 individuals. Despite the good breeding success there, numbers in the two Caithness flocks were also both very slightly down on last year's spring census counts, although the spring census lost 35 birds compared to counts earlier in the winter amongst the Westfield flock. It was generally the case that these geese were harder to find throughout the winter than in previous years, a story that was oft reported by many of the observers around Scotland. Alas, the Lewis flock slid back to 19 in spring after the remarkable 46 birds there in spring 2010, but at least the flock is surviving. Numbers around the Askernish-Kilpheder area of South Uist recovered to 33 odd individuals, but the Loch Bee flock was down on last year with just 92 in spring and 100 at maximum compared to 123 in spring 2010. Again, as last winter after the hard weather, the geese seemed to fragment and were frequently difficult to locate (as was the case at several different sites throughout the winter range). It continues to be hard to judge what is currently happening on the Western Isles, as increasing numbers are turning up in small groups at formerly occupied sites, although this winter there were less signs of permanent presence on North Uist, but Benbecula seemed to support a flock of 20 odd throughout. Although only one adult Greenland White-fronted Goose turned up and wintered at Grindon Lough at the only known regular English site, there were 5 others in the county that perhaps constituted the remainder of this little flock, driven coastward by the snow and more severe weather at their normal haunt, which last year had held up to 12 individuals.

Spring census combined counts from Eriska, Benderloch, Appin and Lismore were slightly down (412) on the same time last year (449), while numbers at Fidden on Mull remained the same. The proportions of young amongst samples on Tiree and Coll were both below 15% (in stark contrast to elsewhere) perhaps with the result that their numbers were actually little changed compared to winter 2009/10. Total Kintyre numbers were up by 458 birds on the previous spring, with clear increases at Machrihanish and Rhunahaorine, perhaps expected given the large numbers of birds of the year within these two flocks. Confirming observations from last year, Malcolm Ogilvie and others found 11-14 Greenland White-fronted Geese near Lowlandman's Bay on Jura confirming the existence of this little flock, and over 68-88 geese were again regularly seen on the improved pastures around Loch a' Cnhuic Bhric. Numbers of Greenland White-fronted Geese encouragingly increased on Islay, with 6,891 in autumn 2010 (down on the previous year) and 6,911 in spring (the highest spring count since 2008, but still

a half of those counted in 1999). Bute held 230 Greenland White-fronted Geese in November 2010, but only c.180 subsequently into December, after which the flock proved very elusive to find. Likewise, the Loch Lomond flock at Endrick Mouth returned with 210 individuals in November yet numbers fluctuated between c.100 and 204 for the rest of the winter and only 139 during the survey period which might suggest they were using sites elsewhere. Loch Ken and Stranraer also enjoyed slightly increased numbers compared to last year, while the Dyfi flock remained around 60 birds as last winter.

Birds summarised in the “Other irregular sites” row in the following table refer to a long-staying juvenile at Drift Reservoir and nearby resorts in Cornwall from December 2010- April 2011, 2 reported from Shetland in October and March with singletons in December and January, 1 at Point of Ayr, Isle of Man in December, 5 at Hoveringham Gravel Pits (Nottinghamshire) in December, 2 in December and 1 in January and February reported from the Fylde, Lancashire, one on the Humber Estuary in January and 5 at Weston Shore, Hampshire in February 2011.

**BRITISH COUNT TOTALS**

All known regular wintering sites were covered by GWGS together with counts carried out by Scottish National Heritage. As usual, no data have been incorporated from the WeBS database, as these counts were not available at the time of report writing, but they normally only contribute a few birds from elsewhere in Britain away from those counted at the regular wintering haunts.

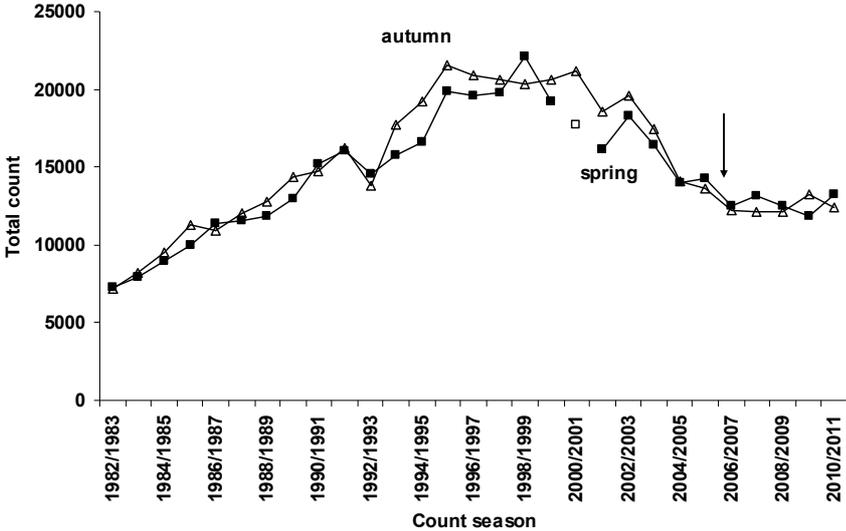


Figure 1. Counts of Greenland White-fronted Geese in Britain, 1982/1983-2010/2011, showing autumn (open triangles) and spring (filled squares) census results for each season. The value for spring 2001 (unfilled square) was missing on account of the outbreak of Foot and Mouth Disease that year and was therefore estimated from previous counts. Vertical arrow indicates start of hunting ban in Iceland in autumn 2006.

**BRITISH GREENLAND WHITE-FRONTED GOOSE CENSUS 2010/2011**

*shaded values are estimates for sites where no counts were received for the precise period of the international census periods*

SITE NAME	SEP	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
<b>ORKNEY</b>										
Loch of Swannay			15							
Birsay/Holm						1		9	9	
Loons			70	59	59	63	37	55	55	53
Tankerness								1	1	
North Ronaldsay								5	5	
<b>CAITHNESS</b>										
Westfield		74	180	176	176	98		135	135	68
Loch of Mey		30	113	113		60	30	80	118	118
Loch of Winless										
<b>NE SCOTLAND</b>										
Carr Roads, Strathspey			6							
Loch of Strathbeg	1		1				1			
<b>WESTERN ISLES</b>										
Barvas/Shawbost, Lewis			12	12				19	19	
North Uist		20				1		6		250
Kilpheder/Askernish, South Uist	5		13	33	33				33	84
Loch Bee/Kilaulay, South Uist			100	100		50		73	92	92
Benbecula			19	19		18		20	20	
<b>INNER HEBRIDES</b>										
Loch Chalium Chille, Skye			25	25		26	25	26	26	
Broadford, Skye			24	24		18	21	17	17	
Plockton, Lochalsh										
<b>LOCHABER/NORTH ARGYLL</b>										
Muck/Eigg				0		3			0	
Loch Shiel/Claish Moss			34	34	34				34	
Lorn: Eriska/Benderloch		39					68	30	113	
Lorn: Appin		30	73	69	69	66	69	69	69	
Lismore		110	235	220	220	230	230	245	230	200
Tiree		204	898	632	632	790		880	880	
Coll		193	301	276	276	217	227	277	277	
Fidden, Mull		10	34	32	32				32	
Assapol, Mull										
<b>SOUTH ARGYLL</b>										
Colonsay/Oronsay		40	82	98	96	73	65	91	94	
Jura: Loch a'Chnuic Bhric			73	73	0		68	88	88	
Jura: Lowlandman's Bay			11	14	14			13	13	
Danna/Kiells/Ulva			259	146	146	220	226	198	198	
Moine Mhor			16	19	19	19	17	17	17	
Rhunahaorine		405	707	878	961	626	708	857	732	
Machrihanish		591	1716	1417	1650	1797	1804	1866	1866	1125
Clachan		3	185	136	215	359	189	159	147	0
Gigha		24	104	76	258	73	111	114	114	0
Glenbarr		0	91	96	96	54	60	0	0	0
Isle of Bute			230	189	188				189	
Endrick Mouth, Loch Lomond			210	210	96	120	160	204	139	
<b>ISLAY</b>		3831	7186	6891	6891	8027	6422	7189	6911	5828
<b>DUMFRIES &amp; GALLOWAY</b>										
Loch Ken		146	201	78	78	198	203	203	194	86
Stranraer	2	169	360	225	225	470	336	332	318	56
<b>WALES</b>										
Dyfi Estuary		34	34	59	59	48	63	63	63	12
Marloes Mere										
<b>ENGLAND</b>										
Lancashire Mosses						1				
Grindon Lough, Northumberland		1	1	1			1	1	1	1
Woodhorn, Northumberland				5			4	5	5	
<b>OTHER IRREGULAR SITES</b>		2			10	4	7	3	1	1
<b>TOTALS</b>										
	5956	13604	12435	12533	13728	11147	13341	13246	7974	
<b>Rest of GB less Islay</b>	2125	6418	5544	5642	5701	4725	6152	6335	2146	
<b>Rest of Scotland less Islay</b>			5484					6265		
<b>England</b>			1					7		
<b>Wales</b>			59					63		

## COUNTS FROM IRELAND

For the third year in a row, excellent coverage was achieved in Ireland, and although the distribution of counts through the winter was not ideal for many flocks, coverage at some point in the year was again achieved for all the important flocks.

Counts from all the known Irish sites that were covered in winter 2010/11 are shown in the table of Irish counts on the next page. Only 8 sites (Caledon, Stabannon, Bog of Erris, Errif & Derrycraff, North Lough Ree, Little Brosna, Nore River and Killarney Valley) needed substitute counts to make up for missing counts at these sites during the International Spring Census period dates, amounting to just 3.6% of the total Irish population. No counts were received from Stabannon in 2010/11, so the counts for last year have been substituted. Nevertheless, substitutions of these missing counts make very little difference to the population totals. Alas this year, no Greenland White-fronted Geese were reported from the flock resorts at Bunduff, Lower Lough Derg, Fergus and Shannon Estuaries, Drumharlow Lough and Loughs Kilglass and Castleforbes, Kilcolman, Doo Lough, Inny Valley and the Blasket Islands.

Overall, most other resorts showed mixed trends, 10 flocks showed increases on last spring, mostly small gains, but numbers at Loughs Foyle and Swilly increased from 1,038 to 1,248 birds, the Midland lakes recovered from 253 last spring to 305 this year and especially pleasing was the increase in the Pettigo flock size from 24 last spring to 71 in 2010/11. The little flock in North County Clare (perched on the edge of extinction) had increased from 10 to 42 last year and 45 returned this season, while the Lough Gara flock remained at 148 as last year. There were losses however at a number of the smaller down country flocks which give continued cause for concern. In particular, the Dunfanaghy flock fell from 133 last season to just 46 this spring, Errif & Derrycraff fell from 39 to 19, but after increases at the Suck River flock from 150 to 280 last year, numbers fell back again to 140 in spring 2011. Many of the very small flocks were more or less unchanged from last season.

The spring 2008 count from Wexford was 9,733, the highest spring count there since 1996, exceeded only in that year and the spring counts of 1989 and 1994 before that. The count in February was higher still at 10,012. Such high numbers at this resort again are extremely encouraging.

Adding this good Wexford total to the 2,777 counted from the rest of Ireland, and the British totals gave a global total of 25,756 Greenland White-fronted Geese in spring 2011, substantially up on the 22,511 in the last overall total count undertaken in spring 2010 (see Figure 2 on page 10).

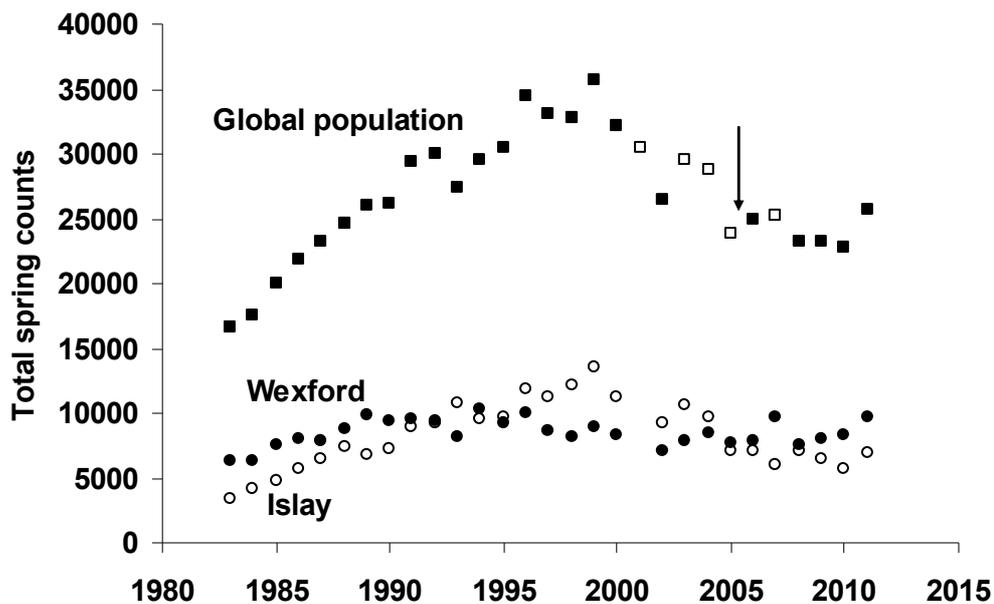
Thanks again to the National Parks and Wildlife Service Rangers and other observers in the Republic, supplemented by the count network and RSPB staff in Northern Ireland, for providing us with these counts to enable a robust estimate of total population numbers for the Greenland White-fronted Geese this year, including good coverage throughout the winter from many resorts.

**IRISH GREENLAND WHITE-FRONTED GOOSE CENSUS 2009/2010**

*shaded values are estimates for sites where no counts were received for the precise period of the international census periods*

SITE NAME	SEP	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
<b>DONEGAL</b>										
1. Loughs Foyle & Swilly			1032	1098	1098	1200	1136	1248	1248	
2. Dunfanaghy				46			46	46	46	
3. Sheskinmore lough			33	40	40	40	40	38	38	
4. Pettigo				76	76	67	67	71	71	43
<b>NORTH CENTRAL</b>										
<b>5. Bunduff</b>										
6. Lough Macnean			43	43	61	50+	76	69	69	
7. Lough Oughter				10		10	11	7	7	
8. Caledon			2	2					2	
33. Stabannon				30					16	
34. Kilcoole marshes										
<b>MAYO</b>										
9. Lough Conn				45	49	45	52	49	49	
10. Bog of Erris				66		66			66	
<b>MAYO/GALWAY UPLANDS</b>										
11. Errif & Derrycraff				19	19				19	
12. Connemara			8	8			25	25	25	
<b>GALWAY LOWLANDS</b>										
13. Rostaff & Killower				79	79	79		78	78	
14. Lower Lough Corrib	0	21		21	51	76	51	44	44	
15. Rahasane turlough	0	0		52	52	53+	2	60	60	
<b>CLARE/LIMERICK</b>										
16. Tullagher				28				28	28	
17. North County Clare				45		45		45	45	
<b>18. Lower Lough Derg</b>				0					0	
19. Fergus & Shannon estuaries				0					0	
<b>SHANNON HEADWATERS</b>										
20. Lough Gara			3	148				58	148	
21. Drumharlow Lough				0					0	
22. Loughs Kilglass & Castleforbes				0					0	
<b>MIDDLE &amp; LOWER SHANNON</b>										
24. North Lough Ree				26			26		26	
25. River Suck			45	156	126	160	163	140	140	79
26. Little Brosna				230	230			210+	230	
<b>MIDLANDS</b>										
23. Midland lakes				226	106	292	50	305	305	
27. River Nore				9		9			9	
<b>SOUTH WEST</b>										
<b>28. Kilcolman</b>				0					0	
<b>29. Doo Lough</b>										
30. Killamey valley				8	8				8	
<b>31. Inny valley</b>										
<b>32. Blasket islands</b>										
<b>WEXFORD</b>										
			7928	8524	8524	8522	10012	9733	9733	
<b>TOTALS</b>										
Ireland without Wexford	0	9115	11035	10519	10611	11757	12044	12510	122	
			2511					2777		

*Sites in bold italics indicate resorts where geese have not been seen for at least 5 years and are considered abandoned*



*Figure 2. Combined global spring counts of Greenland White-fronted Geese from Britain and Ireland, 1983-2011, showing actual count totals (filled squares) and those estimated using modelled values for the missing “rest of Ireland” totals in some recent years (open squares). These values were calculated on the basis of the relationships between the “rest of Ireland” counts and combined Wexford and British values in previous years of full coverage. Values for spring 2001 (unfilled square) were missing on account of the outbreak of Foot and Mouth Disease that year and were therefore also estimated from previous counts. The arrow indicates the point where hunting in Iceland was stopped. Spring counts for Islay (open circles) and Wexford (closed circles) are also shown.*

## AGE RATIOS IN BRITAIN

It takes a special sort of person to invest hours trying to gain age ratios amongst assembled flocks of Greenland White-fronted Geese. There is always some reason or other why what theoretically should be an easy task becomes an impossible and frustrating one! But thank goodness that so many of you are willing to do this, as the assessment of the production of young is such a fundamental basis to our monitoring of this population and gives us a deep insight into why the different flocks are showing different trends. This year it was even more important than usual, because for the first time in many a long year, there were bumper numbers of young in the flocks after the 2010 breeding season!! Thanks to all your troubles and efforts, we attained pretty good coverage in 2010/11, which showed the overall percentage of young birds in the flocks sampled was 21.2% among the aged samples (Table 2) compared with 12.9% last season. Breeding success was generally good amongst all the flocks subject to aging, only Loch Shiel (5.9%), Fidden (9.7%), Keills (9.0%), Colonsay (9.5%) and the Dyfi (none amongst 34 adults aged) failing to exceed 10% this winter. The percentage of first winter birds exceeded 20% in Caithness, on South Uist, at Appin, Moine Mhor, Machrihanish, Clachan, Jura and Loch Ken. Interestingly, after our comments about the lower breeding success amongst the Rhunahaorine flock compared to that at Machrihanish

last year, the pattern repeated this season (19.4% compared to 23.0% after 2010), but in contrast, the Clachan flock, which had no young amongst 133 aged in the field last year, returned with 27.0% young in autumn 2010 (perhaps after a leisurely year off). The mean percentage young amongst flocks sampled on Islay was 22.9%, the third highest level recorded there since 1962, well above the average of 13.9% for 1962-2010 inclusive, 13.1% for 1982-2010 and the highest since 1985 (27.3%). Away from Islay, the sample of 3,741 birds assigned to age groups showed a very creditable 19.7% young very much higher than in many recent years, confirming good production of young throughout most of the flocks in Britain. Mean brood size was 3.37 (see Table 2) based on 330 families sampled from many sites, comprising a mean of 3.93 on Islay and 3.09 elsewhere (larger than last season).

*Table 2. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Britain 2010/2011.*

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Loch of Mey, Caithness	29.03	93	2.60	5
Westfield, Caithness	40.54	74	3.00	10
Kilpheder, South Uist	30.77	13	2.00	2
Loch Shiel	5.88	17	1.00	1
Tiree	12.18	739	2.00	45
Coll	14.29	91		
Fidden, Mull	9.68	31	1.50	2
Appin	23.19	69	3.20	5
Benderloch	10.0	30		
Keills	8.99	89		
Moine Mhor	31.58	19	3.00	2
Rhunahaorine, Kintyre <sup>1</sup>	19.37	444	4.00	17
Machrihanish, Kintyre <sup>1</sup>	23.01	1082	3.60	67
Clachan, Kintyre <sup>1</sup>	27.01	137	3.70	10
Colonsay	9.46	74	3.50	2
Islay <sup>1</sup>	22.93	3079	3.93	112
Lowlandman's Bay, Jura <sup>1</sup>	42.86	14	6.00	1
Bute	12.23	188	2.56	9
Loch Ken	35.82	201	3.43	21
Stranraer	19.30	285	3.06	18
Dyfi Estuary	0	34		
Britain, excl. Islay	19.70	3741	3.09	218
OVERALL	21.16	6820	3.37	330

<sup>1</sup>Details from Islay and Kintyre courtesy of Dr Malcolm Ogilvie

## AGE RATIOS FROM IRELAND

The age ratios sampled (see Table 3) showed better production of young in areas away from Wexford, with 13.6% (compared to 10.1% last winter) amongst 1,080 birds aged down country, but with variable production from the relatively few flocks sampled. This change represents a very welcome recovery towards levels of former times and a considerable improvement on 5.4% from samples drawn in winter 2008/9 from down country flocks. The

overall proportion of young in Ireland was 14.42% (n = 6,346), including the proportion of young at Wexford which was 14.7% (compared to 9.1% last year) amongst 5,266 aged, with a mean brood size of 3.39 (n = 168) compared to 3.09 last year, not too dissimilar to values from Britain (see above).

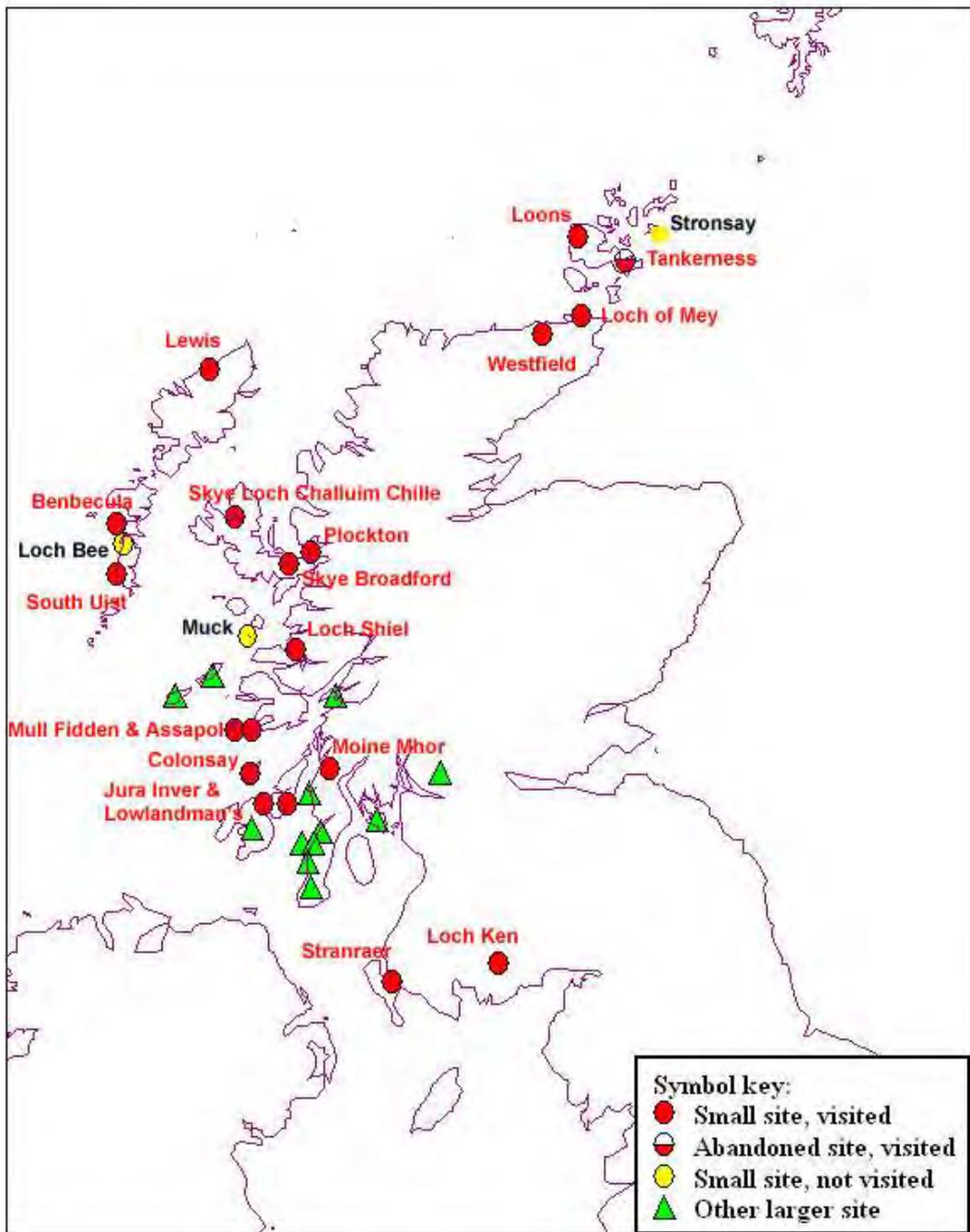
*Table 3. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Ireland 2010/2011.*

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Loughs Foyle & Swilly	12.45	490	2.95	20
Dunfanaghy	6.45	31	2.00	1
Sheskinmore	10.53	38	2.00	2
Pettigo	12.12	66		
Bog of Erris	6.25	16	1.00	1
Lough Macnean	17.39	69		
Tullagher	25.00	28	2.00	3
River Suck	35.14	37	2.17	6
Midland Lakes	10.82	305	3.67	9
Wexford	14.70	5266	3.39	168
Ireland, excl. Wexford	13.06%	1080	2.81	42
OVERALL	14.42%	6346	3.27	210

### **GREENLAND WHITE-FRONT'S WINTERING AT 'SMALL SITES' IN SCOTLAND**

As reported in last year's newsletter, the conservation status of Greenland White-fronted Geese at their smaller wintering resorts in Scotland is known to be of concern, since an earlier analysis during the mid 1990s showed that the numerically smallest flocks were those showing the most serious declines. Addressing the loss of wintering sites and contraction of winter range was considered to be a priority for action by the Greenland White-fronted Goose International Workshop in February 2009.

With the support of Scottish Natural Heritage (SNH), the Greenland White-fronted Goose Study (GWGS) and Wildfowl & Wetlands Trust (WWT) (assisted in two areas by RSPB Scotland staff) undertook a study of these smaller sites, with the aims of identifying any factors that could be addressed to improve their status at each and prevent flock extinctions if possible. During the winters of 2009-2010 and 2010-2011, 19 sites across the Scottish winter range were visited. We assessed land use and a range of other factors in the field against a set of standard criteria, and collated historical information and comments from local counters and some farmers. Information about participation of many areas in agri-environment schemes was also provided by SNH, following entry of the site data into their Geographic Information System. Many counters in the Greenland White-front network kindly provided comments and information towards this study.



We recognised at the outset that it would be difficult to identify those specific local environmental factors that were affecting the local rates of decline in small flock numbers during a period of overall population decline. The factors affecting the populations of small flocks are occurring against a background of complex ecological conditions that may come into play throughout the annual cycle, and in any case we have only poor existing knowledge of many wintering sites and their land use history. We made only one ‘snapshot’ visit, which together with other background information can only partially contribute towards an understanding and diagnosis of any site-related problems. Nevertheless, this is the first time that an exercise of this kind has been undertaken and much useful site-related information was gathered, and the great background knowledge of our count network was also invaluable.

After examining the available information, in most cases, we could find no obvious reason why goose numbers at any of the small sites should be low or declining, and there were no clear habitat-related limits to suitable areas that the geese could feed or roost in. Often, very small numbers of Greenland White-fronts were found within an extensive landscape of suitable or even apparently optimal habitat.

However, some characteristics of areas used by Greenland White-fronts were identified by a rudimentary analysis. We found that they appeared to select improved land, especially older improved pastures which were 'green-yellow' in appearance rather than bright green, with shorter swards and medium to high grazing intensities (possibly grazed more preferentially by sheep). Preferred fields had little or lower cover of *Juncus* rushes compared to those available to the geese generally, and there was a slight preference for fields with seasonally flooded areas rather than permanent standing water. Thirteen of the 19 sites had active agri-environment measures operating over some part of the land used by the geese, though none of these was aimed at goose management. By frequency, the most widespread measures were open grazed grassland and Corncrake management options. Although factors not linked to the characteristics of wintering sites may be the most important in driving local population trends, the geese apparently preferred certain features, and possible management actions could maximise their extent and potentially benefit the birds.

Population size and trends at individual sites were analysed, along with flock size and an attempt was made to identify sites that may be of higher priority for possible conservation action. The top priority sites were considered to be Loch Ken, Stranraer, Colonsay and Oronsay, South Uist, The Loons (Orkney) and Moine Mhor. In this study we found a significant trend for numbers at larger sites to decline more rapidly than at small ones. We looked at threats and conservation designations across all sites but could find no clear relationships between these and the population trajectories.

There could be certain inherent biological properties of 'small flocks' which may affect these small sites, and it may well be that factors operating outwith the wintering range are most important. However, habitat change has also affected these areas, and we make recommendations for management actions which we hope would benefit Greenland White-fronts, both generally and for the individual sites.

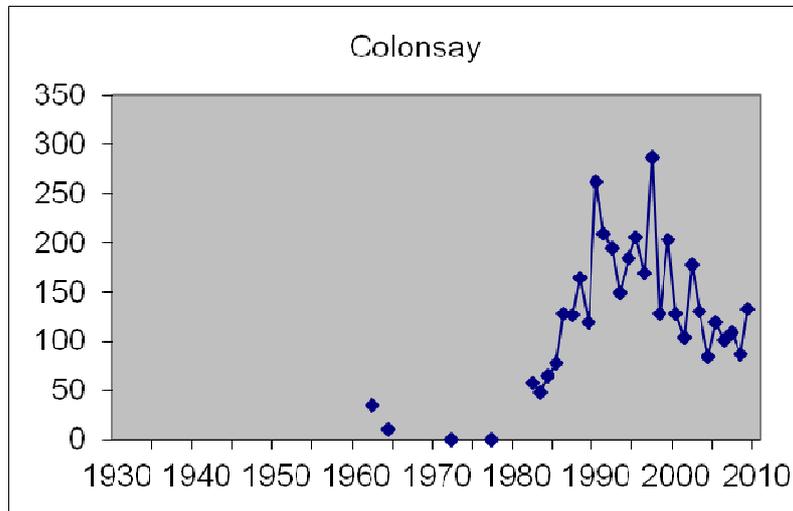
We thank all those who helped this work by providing information from their local sites.

*Ian Francis, Carl Mitchell, Larry Griffin and Tony Fox*

**Photographs: a few of the ‘small wintering sites’ covered in the study**



Oronsay (photo: Mike Peacock)



Greenland White-front population trend on Colonsay and Oronsay – the rise and fall of a small site population



Moine Mhor (photo: Ian Francis)



Lowlandman's Bay, Jura (photo: Ian Francis)



Greenland White-fronts and Wigeon grazing on saltmarsh grassland at Ardmenish, Lowlandman's Bay, Nov 2009 (Malcolm Ogilvie)



Kentra Moss (Loch Shiel) (photo: Ian Francis)

## ACKNOWLEDGEMENTS

Every year we struggle to find words to adequately thank all of you that so kindly contribute to the coverage of Greenland White-fronted Geese on their winter quarters, and it continues to be a pleasure to say thank you to the many of you that so loyally contribute to the counts every season. Without your selfless contribution of counts, age ratios, resightings of marked individuals and observations, there would simply be nothing for us to write about, so a very very sincere thanks as ever for all you have done. For Britain during 2010/11, these include: John Adair, Bob Adam, Vicky Anderson, Ian Bainbridge, Dave Beaumont, Dave Batty, Pat Batty, Pete Berry, John Bowler, Julian Branscombe, Roger Broad, Kenny Buchan, George Christie, Paul Collin, Andrew Dacre, Paul Daw, Tim Dean, Becks Denny, Pat Doughty, Steve Duffield, Keith Duncan, John Dye, Keith Fairclough, Ian Fisher, Michael Francis, Ian Fulton, Dominic Funnell, Mike Gear, Larry Griffin, John Halliday, Keith Hague, Nick Haycock, Dick Hewitt, Ian Hopkins, A. & E. Horner, Keith Hoey, Alan and Elaine Horner, Natalie Huss, Sandra Hutchinson, Dave Irving, Tim Jacobs, David Jardine, Tracey Johnston, Ben Jones, Martin Jones, Russell Jones, Wilma Kelly, John Kemp, Andy Knight, Morven Laurie, Stan Laybourne, Alan Leitch, Stephen Longster, Ruth Mathias, Dick Matson, Crystal Maw, Dennis McCullough, Stephen MacDonlad, Marco McGinty, Alison MacLennan, Rae McKenzie, Bob McMillan, Leigh Marshall, Dick Matson, Eric Meek, Carl Mitchell, Brian Neath, Bill Neill, Malcolm Ogilvie, Hamish Patton, Mike Peacock, Brian Rabbitts, Bryan Rains, John Raymond, Alan Reid, Brian Ribbands, Andy Robinson, Dave Rogers, Chris Rollie, Malcolm Russell, Martin Scott, Dave Sexton, Stuart Shaw, Alan Simpson, Ian Sims, Dick Squires, Colin and Margaret Stead, Andrew Stevenson, David and Rachael Stroud, Paul Tarling, Arthur Thirlwell, James Towill, Andrew Upton, Jim Williams, Stuart Williams, Hazel White and Catriona White.

Thanks to the many folk who maintain web sites and blogs that enable us to capture ever more count data and interesting sightings than was formerly the case. We acknowledge the contributions of D. Flumm, S. Foster, M. Garner, P.R. Massey, D. Parker, B. Rains, C. Selway, A. Spellman, R. Wilkins and many other anonymous observers who have contributed in this way.

For Ireland, these include: Andrew Speer, Annette Lynch, Aonghus O'Donnell, Breffini Martin, Brad Robson, Cameron Clotworthy, Ciara Flynn, Ciara O'Mahony, Ciaran Foley, Fionnbar Cross, Dave Duggan, Dave McNamera, Dave Suddaby, David Tierney, David McDonagh, David Norriss, Denis O'Higgins, Denis Strong, Dick Coombes, Dominic Berridge, Eleanor Mayes, Eamon Doran, Elaine Keegan, Emer Magee, Emma Glanville, Eoin McGreal, Fiona Farrell, Frank McMahan, Ger O'Donnell, Gerry Higgins, Gerry Murphy, Graham McElwaine, Helen Boland, Helen Carthy, Irene O'Brien, Jim Moore, Joe Gatins, Joe Shannon, John Higgins, John Matthews, John O'Connor, John Wilson, Kendrew Colhoun, Larry McDaid, Lee McDaid, Lorcan Scott, Mark Byrne, Matthew Tickner, Maurice Eakin, Maurice McDonnell, Michael Hackett, Niall Cribbon, Noel Bugler, Olivia Crowe, Paddy O'Sullivan, Pdraig O'Donnell, Pascal Dower, Pat Vaughan, Patrick Warner, Penny Bartlett, Ralph Sheppard, Raymond Stephens, Rebecca Teesdale, Robbie Miller, Robert Lundy, Ross Watson, Seamus Stefan Jones, Stephen Heery, Sue Callaghan, Tim O'Donoghue, Tim Roderick, Tony Murray, Triona Finnen, Val Swan, Wesley Atkinson, and Lorna Whiteside.

As usual, we have made every effort to thank all those involved with the works presented here, but inevitably orchestrating the energies of so many people may mean we have unintentionally forgotten to name you for your contribution, for which we apologise.

We gratefully acknowledge the continuing programme of research and surveillance carried out by the National Parks and Wildlife Service and we are extremely grateful to the count network throughout Ireland for a magnificent effort in obtaining these numbers in time for this report. Thanks to SNH for coverage of sites in Argyll, especially Tracey Johnston and Margaret Morris, to the counter teams on Kintyre and Islay and to all the contributors for their kind help in preparing sections of the report. The census is only possible thanks to the financial support of the Joint Nature Conservation Committee through a sub-contract from Wildfowl & Wetlands Trust under their UK Goose and Swan Monitoring Programme, and we thank Rich Hearn for his help as nominated WWT officer for the project.