

**REPORT
OF THE 2011/2012
INTERNATIONAL CENSUS OF
GREENLAND WHITE-FRONTED GEESE**

by

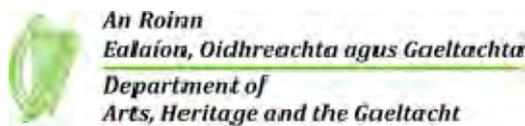
GREENLAND WHITE-FRONTED GOOSE STUDY



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Final report – September 2012

SUMMARY

The global population of Greenland White-fronted Geese in spring 2012 comprised 22,403 individuals, down 13% on the previous year. Most of the decline occurred on Islay; 12,242 were counted in Ireland, 10,161 were counted in Britain. Reproductive success was only 7.6% in Ireland, 8.8% in Britain.

This report presents the results of the surveys of the Greenland White-fronted Goose on the wintering grounds in winter 2011/12, 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). The international count in spring 2012 located a combined global total of 22,403 Greenland White-fronted Geese, the lowest recorded since spring 1986 down 13.0% (3,362 birds) on the last world population estimate of 25,765 in spring 2011. This decline erased the increase between spring 2010 and spring 2011, which in turn had been the result of a good breeding season in summer 2010. It is thought the decline to spring 2012 was in part due to poor reproductive success in summer 2011. However, following the mild weather of autumn, it was notable that a proportion of the geese remained in Iceland very late into November, departing into unfavourable winds when temperatures fell at the end of the month. It appeared that some of these geese were blown off course by unfavourable winds at that time and turned up in Norway, North Sea coasts and eastern Britain away from regular resorts, where several remained throughout the winter.

Excellent coverage was again achieved in Ireland in spring 2012 which provided 9,567 from Wexford (compared to 9,733 in spring 2011) and 2,675 (2,777 last year) from the rest of Ireland. Missing spring counts were substituted for five Irish regular wintering resorts, amounting to only 1.2% of the Irish total. Complete censuses of all known Greenland White-fronted Goose wintering haunts in Britain found totals of 8,493 birds in autumn 2011 and 10,161 in spring 2012, representing fairly catastrophic declines compared with 12,435 and 13,255 respectively reported in the previous season at the same times of year. The 2011/2012 totals comprised 1 and 29 birds reported in England, 48 in Wales, remarkably low counts of 4,670 and 4,309 on Islay (compared with 6,891 and 6,911 respectively last season) and 3,774 and 5,775 in the rest of Scotland in autumn and spring respectively (compared with 5,484 and 6,274 respectively last season). 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 February. Spring counts were missing from the specified count period from 8 resorts, but all were substituted with counts undertaken very close to the defined international count dates, amounting to 5.9% of the British total.

Breeding success amongst geese wintering at British resorts slumped back down dramatically after the bumper production of young in summer 2010 (21.2% young). After the 2011 breeding season, the average percentage young was only 8.8% ($n = 5,851$ aged), mean brood size was 2.93 ($n = 192$ broods, compared to 3.37 last season). This included 9.9% on Islay, (back below the average of 14.0% for 1962-2011 inclusive) where the mean brood size was 3.35 ($n = 91$ compared to 3.93 last year). The percentage of first winter birds exceeded 10% only on South Uist, Tiree, at Moine Mhor Loch Ken and Stranraer. In Ireland, the percentage young amongst aged flocks in 2011/12 was also low, 7.6% (based on 5,273 aged individuals) compared to 14.7% last season. Mean brood size amongst the Irish flocks was 2.62 ($n = 111$) compared to 3.27 last season. There were 7.1% young amongst 4,342 aged at Wexford (less than half the 14.7% recorded last year), where the mean brood size was 2.86 (compared to 3.39 last season) based on 80 broods. Elsewhere in Ireland, reproductive success was higher, 9.9% ($n = 931$), but brood size lower at 2.00 ($n = 31$) compared to 2.81 last year.

INTRODUCTION

The 2011/2012 survey marks the thirtieth ever 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 2012 count represents a full survey of all known winter haunts for this population.

Table 1. Spring population census totals for Greenland White-fronted Geese, 2007-2012. Count coverage for the rest of Ireland in spring 2007 was incomplete, hence global population totals cannot be provided for that year.

	Spring 2007	Spring 2008	Spring 2009	Spring 2010	Spring 2011	Spring 2012
<i>Wexford</i>	9713	7536	8034	8381	9733	9567
<i>Rest of Ireland</i>	-	2559	2623	2622	2777	2675
<i>Islay</i>	6025	7086	6429	5744	6911	4309
<i>Rest of Britain</i>	6428	6027	6076	6097	6344	5852
<i>Population total</i>	?	23208	23162	22844	25765	22403

ARRIVAL/DEPARTURE DATES

The autumn of 2011 was a very remarkable one for Greenland White-fronted Geese. The weather was incredibly mild in Iceland, especially into late November, with the result that very large numbers remained there well into the third week of the month in unprecedented numbers, grazing on the grass that continued to grow late into the month. Cold weather in the last week of November finally forced most of the birds out, but a very few even remained into December. Thanks again to Carl Mitchell who was in southern Iceland during 4-7 November 2011 counting grey geese there and reported 227 Greenland White-fronted Geese, slightly fewer than in the same area at the same time last year. Guðmundur Guðmundsson of the Icelandic Institute for Natural History undertook an aerial survey and found some 700-800 around this time. In the western staging areas, 800 were reported to Arnor Sigfusson at Söðulholt and Dalsmynni on Snæfellsnes peninsula on 24 November with 2000 Greylags. With the cold weather, the grass which had continued to grow in Iceland was suddenly denied the late staying geese, and many departed in late November on what would have been unfavourable winds, causing many to be cast up along the west coast of Norway, up to 5 in Denmark and one adult bird even turned up on the island of Helgoland in the German Bight, it appeared on 31 December and remained until 9 January 2012 (Martin Gottschilling).

Just to confuse matters, Britain and Iceland received a large influx of Russian White-fronted Geese during the course of November. In Iceland, 4 Russian birds appeared in Dvergasteinn, northern Seyðisfjörður in the extreme east of Iceland on 14-16 November 2011, and a flock of 17 were at Egilsstaðir inland and further west on 30 November, this group remained in the general area until at least January 2012. This influx coincided with a number of reports of this subspecies in eastern Scotland, together with Bean Geese that suggested these birds were driven off course during autumn migration from the continent. The Russian subspecies of the

White-fronted Goose is rare in Iceland, so these records attracted wide interest there, but it is interesting to note that the numbers recorded in Scotland were unprecedented there as well.

Back on the wintering grounds, the exceptionally early first record was of 10 birds at Endrick Mouth on 12 September, rising to 16 on the 3 October (including 4 young of the year, Stephen Longster), 6 were reported flying over on 14 October (Clyde Bird Blog) and the flock reached 32 by 19 October (Tim Jacobs). Stephen Bentall first reported 12 Greenland White-fronted Geese flying over Broadford on Skye at 11:00 on 5 October 2011. Alyn Walsh saw his first 3 geese at Wexford on the relatively late date of 6 October, and by the time of the November count had some 6000 back, although this was substantially down on the count at the same time last year (8000). Ian Hopkin saw 25 geese back on Bute on 11 October, when 9 and later 13 flew over Tiree (John Bowler), while Bryan Rains saw 3 back on Mull on 12 October. Bob McMillan reported 21 back at Kilmuir, Skye on 13 October. Thirteen Greenland White-fronted Geese came in off the sea at Butt of Lewis on 14 October. Arthur Thirlwell also saw his first returned birds on 14 October, 17 birds at Threave Mains, Loch Ken including 3 juveniles and the collared individual V8D marked the previous winter. Numbers had built to 115 by 2 November, but on that day 6 other birds came in from very high in the NW apparently just arriving (Larry Griffin). Stan Laybourne had 65 birds back at the Westfield haunts in Caithness on 14 October, rising to 72 by 22 October and at least 96 by 26 October. However, Paul Tarling reported the first geese at Stranraer on 20 October (33), Catriona White did not see her first White-fronted Geese (49) on Lismore until 23 October and Mike Peacock saw his first 30 on Colonsay on 24 October. The Dyfi flock was first noted on 18 October, with 37 rising to 48 by the 12 November count (Russ Jones). The first Orkney records were of 22 geese on 20 October, seen at Loch Swannay (Orkney Bird Sightings). However, the late arrivals of others were confirmed by small groups going south over South Uist on 3, 8 and 11 November, with a heavy movement over North Uist on the night of 8 November (Steve Duffield's Western Island Wildlife blog). Despite the records above, arrivals were generally late compared to normal, and many observers were left with the impression that several flocks were still at only 50-75% of their expected number by the very beginning of December, perhaps because there had been so many geese remaining in Iceland up until that time. Indeed, given that large numbers were obviously blown off course late in the season and that there were unprecedented numbers of Greenland White-fronted Geese that turned up (and in many cases remained) at non-regular wintering sites (see below), it seems that the autumn migration of 2011 had a highly disruptive effect on the population and that this contributed to a number of the very low counts at regular resorts in autumn 2011, even compared to spring 2012.

The spring migration of Greenland White-fronted Geese was also an extremely unusual affair. The majority of the Wexford wintering geese had departed by 28 March, the earliest departure there ever, although we know that some of them subsequently stopped off on the Uists *en route* (see below). However, many of the Scottish birds remained considerably later. Robin Harvey still had 63 geese (including the collared bird T1C) at Appin, Benderloch on 7 April and Malcolm Ogilvie reported that there had been no sign of departure of birds on Islay by 6 April either. At Loch Ken, Arthur Thirlwell was still counting 120 on 30 March, but this had fallen to 25 on 3 April (George Christie), 21 (including no fewer than 8 collared birds) on 4 April, 23 on 5 April, 12 on 7 April and all had gone by 8 April. The Stranraer flock were last

seen in good numbers on 5 April, when Paul Tarling saw 160. There were still 3 Greenland White-fronted Geese at Carsethorn, Solway Firth on 6 April (Anna White). There were still 50 at Broubster Leans, Caithness on 8 April (Donald Omand) and 44 of the other Caithness flock at West Mey on 9 April (Julian Smith), with few birds seen after this. Thirteen geese remained on Lismore until 13 April (Catriona White) and 123 were still at Tayinloan, Kintyre on 14 April (David Jardine). On Tiree, John Bowler noted the departure of the majority of the birds on the evening of 14 April, although 3 geese remained until 20 April. However, most noteworthy was that the Dyfi flock was still present in its full complement of 48 birds on 16 April (Russ Jones)! Late birds on Orkney also included 6 at the Loons (9 April), 2 Suckquoy, Toab (16 April) and singles on North Ronaldsay and at Hurtiso Road (both 22 April).

Brian Rabbitts and Steve Duffield reported a staging flock of 97 birds that appeared at Loch nam Fiethean on North Uist on 29 March, including three collared geese which had wintered at Wexford, this had risen to 106 birds and a fourth Wexford collar the next day. Steve saw only 7 unmarked birds on 30 March, but Brian counted 86 on 1 April (also without any collared individuals) and 33 (a.m.) and 58 (p.m.) on 8 April, with no reports subsequently, suggesting a modest passage through this site over this period. Other movements from the Western Isles were 180 at Aird an Runair (North Uist) plus another 110 over northwards and 5 north at Baleshare (North Uist, all 5 April); 40 Ardivachar, 23 north over Loch Eynort, 10 at Stoneybridge and 108 at Askernish (all South Uist 7 April); 90 north over Benbecula and 31 north over Stoneybridge South Uist (8 April); 11 at Loch na Paisg plus another 9 north (North Uist, 9 April) and the last birds 22 north over North Uist on 13 April.

Silas Olofson reported a Greenland White-fronted Goose at Kambsdalur on the Faroe Islands on 22 March, which fits with the earliest departures from Wexford, and he subsequently reported 14 Greenland White-fronted Geese from Millum Fjarða on 1 April 2012, with a further 23 at Velbastaðhálsur and 37 at Kirkjubø. He noted that these numbers were a personal record for him, "...normally we only see a few birds now and then during migration", suggesting inclement weather had forced more than usual to put down on that date. He also reported 7 more at Rituvík on 10 April.

The first Greenland White-fronted Geese (a flock of 24) were seen in southern Iceland by Tómas Grétar Gunnarsson at Hildisey in Landeyjar on 24th March 2012, when the first were also seen at Hvanneyri. Both these reports beat last year's very early arrival on 26 March 2011. Anna María Lind Geirsdóttir reported 80 at Hvanneyri on 26 March 2012 and numbers had risen to 100 there by 30 March (Unnsteinn Elíasson via Jón Einar Jónsson).

COUNTS IN BRITAIN

All known regular wintering sites were covered in Britain in 2011/12. As usual, no data have been incorporated from the WeBS database, as these counts were not available at the time of writing. Given the very broad scatter of reports of Greenland White-fronted Geese throughout the British Isles in winter 2011/12, it is likely that there will be many more reports than are normal in other years. As can be seen below, we have gathered reports on the web of observations of the race and these are tabulated separately later in the report. Even allowing for the large numbers reported away from regularly used sites, both the autumn 2011 and

spring 2012 counts fell dramatically compared to the equivalent counts in the previous winter (see Figure 1 on page 7). A full breakdown of the count totals giving the maximum counts per month and the census period totals is presented in Table 1 on page 8.

As in 2010/11, in addition to the 54-59 at the Loons, there were reports of small numbers of Greenland White-fronted Geese from Holm, Tankerness and North Ronaldsay. Numbers were cheerily substantially up in Caithness, where the Westfield flock numbered 168 (135 last year) and The Loch of Mey flock 170 (up on 118 last season) in March 2012. The Lewis flock increased to 23 from 19 last spring and the Uist flocks generally were slightly up on last season with 102 at Loch Bee and 26 on Benbecula (compared to 92 and 20 respectively in spring 2011) and although only 19 were counted at Kilpheder, there had been up to 35 geese there in mid winter (similar to the spring count of 33 in 2011). Numbers were more or less the same on Skye (31 and 18 compared to 26 and 17 last year) and at Loch Shiel (32 versus 34) and there was relative little change at Lorn/Lismore, Tiree or Coll, although the Mull numbers fell from 32 in spring 2011 to 20 this season. Numbers on Oronsay/Colonsay were a little down, but those on Danna/Keills broke 230 in spring 2012. Total Kintyre numbers were down by 453 birds on the previous spring, which was almost exactly the increase of last spring on the year before that, while numbers on Bute and at Loch Lomond were very similar to the totals in the previous spring. Numbers were down at Loch Ken (173 compared to 194), Stranraer (244 versus 318) and the Dyfi (48 from 63). However, the most staggering decline occurred on Islay where just 4309 were counted in spring 2012 compared to 6911 in spring 2011. Hence, most of the 3085 Greenland White-fronted Geese missing from the spring count in 2012 compared to that in 2011 could be accounted for on Islay, Kintyre and the southernmost wintering resorts in Dumfries and Galloway and Wales.

One very major difference in winter 2011/12 to all previous winters back to 1982/83 were the unusual numbers of Greenland White-fronted Geese that were reported away from the regular wintering sites. Of course, vagrant individuals turn up in every year throughout Britain, but very many people drew attention to the fact that Greenland White-fronted Geese were being seen in counties throughout Britain where the subspecies is a considerable rarity. Indeed, the winter of 2011/12 was remarkable for the general influx of European White-fronted Geese *Anser albifrons albifrons* and Tundra Bean Geese *Anser fabalis rossicus*, both of which occurred in unusually high numbers, especially in Scotland. The presence of so many European White-fronted Geese created many identification problems as well, since birds of Russian origin were frequently associated with traditional flocks of Greenland birds, and many Greenland birds were associating with European race flocks! We have attempted to summarise as many of the reports from bird lists, blogs and bird reports on the web as possible, but inevitably this will be incomplete (see Table 2 on page 9). However, just a glance at the table reveals just how many authenticated Greenland White-fronted Geese were present in Britain and Northern Ireland away from regular winter resorts compared with a "normal" year. It was quite clear that substantial numbers (reportedly up to 80 in March 2012) remained throughout much of the winter on the English side of the Solway and elsewhere in Cumbria and there were up to 16 reported on the Humber estuary as well. Although not amounting to large numbers, the scatter of birds in Yorkshire, Lancashire, Lincolnshire, Norfolk and Suffolk all suggest some influx along the east coast of England, perhaps birds re-orientating after finding themselves in Norway or further south in the North Sea. This large

spread of birds (and many of the individuals were juvenile birds, which once separated from their families are unlikely to survive) suggests major disruption to migrating groups, including families, which may well contribute to the explanation of such low totals counted at regular wintering resorts this year. Perhaps for some reason a major part of the Islay/Kintyre wintering subpopulation became lost on migration and relatively few ever made it back to their regular wintering site before the season was out. Whatever happened, there is no doubt that the winter of 2011/2012 was a very unusual season for Greenland White-fronted Geese indeed and if the delayed migration of many hundred birds from Iceland can be seen in the context of climate change, this could mark a new facet of climate effects on the population.

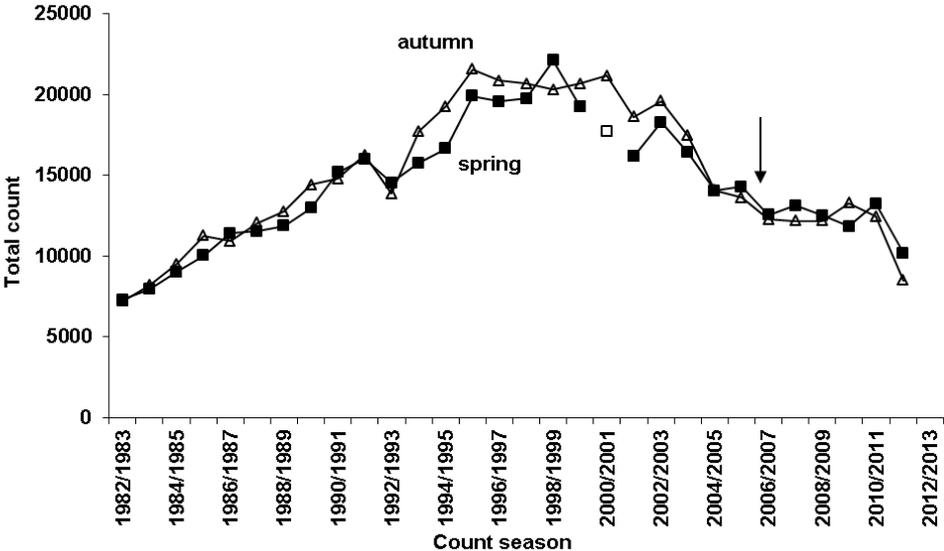


Figure 1. Counts of Greenland White-fronted Geese in Britain, 1982/1983-2011/2012, showing autumn (open triangles) and spring (filled squares) census results for each season. The value for spring 2001 (unfilled square) was missing on account of the outbreak of Foot and Mouth Disease that year and was therefore estimated from previous counts. Vertical arrow indicates start of hunting ban in Iceland in autumn 2006.



Greenland White-fronted Geese at Sheskinmore - photo Alyn Walsh.

TABLE 1 GREENLAND WHITE-FRONTED GOOSE IN BRITAIN 2011/2012

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
ORKNEY										
Loons		22	24	54	58	59	56	56	55	6
Tankerness			1		11			1		
North Ronaldsay					1	1	1	5		1
South Ronaldsay			8		3					
Sanday			6							
Holm					20					
CAITHNESS										
Westfield	96	112		114	114	70	151	168	168	50
Loch of Mey	90	150		150		170	170	170	170	44
Loch of Winless						10				
NE SCOTLAND										
Dell of Killiehuntly, Kingussie				8	8	2	2	3	3	
Loch of Strathbeg	1	1		10					0	
WESTERN ISLES										
Barvas/Shawbost, Lewis				18		23			23	
Butt of Lewis	13					22				9
North Uist								11	11	180
Kilpheder/Askernish, South Uist			28	31	31	35	0	19	19	108
Loch Bee/Kilaulay, South Uist			50	102	102+				102	100
Benbecula				23	23	22	26	26	26	90
INNER HEBRIDES										
Loch Chalium Chille, Skye	21	30		31	31	31	28	31	31	
Broadford, Skye	12			21	21	5	18		18	
Plockton, Lochalsh				1		1			1	
LOCHABER/NORTH ARGYLL										
Muck/Eigg				0			3		0	
Loch Shiel/Claish Moss	11	32						32	32	
Lorn: Eriska/Benderloch			80					68	90	
Lorn: Appin			69	57	57	47	66	71	71	63
Lismore	49	200	65	160	160	200	234	230	230	200
Tiree	372	571	566		687	591			948	
Coll	227	319	248		235	204			204	
Fidden, Mull	4	18	18			20			20	
Assapol, Mull			0						0	
SOUTH ARGYLL										
Colonsay/Oronsay	44	59	24	36	53	62	76	88		
Jura: Loch a'Chnuic Bhric			0					63		
Jura: Lowlandman's Bay			0	32				0		
Danna/Kiels/Ulva	155	197	214	214	185	183	231	231		
Moine Mhor		11	11	11	11	16	6	6		
Rhunahaorine			336		1035			550		123
Machrihanish			683		763			1515		
Clachan			190		198			190		
Gigha			63					56		
Glenbarr			54					95		
Isle of Bute	25	120	186	186	160		190	190		
Endrick Mouth, Loch Lomond	50	180	180	184	194	194		152		
ISLAY			4670					4309		
DUMFRIES & GALLOWAY										
Loch Ken	89	140	161	161	183	190	171	173	29	
Stranraer	33	142	155	167	243	180	185	244	160	
WALES										
Dyfi Estuary	37	48	48	48	48	48	48	48	48	48
Marloes Mere										
ENGLAND										
Woodhorn Flash, Northumberland						5				
Bothal, Northumberland						4				
OTHER IRREGULAR SITES										
See table on next page for details		1	15	1	38	87	57	113	29	0
TOTALS		1352	2611	8493	1615	4749	2466	1915	10161	1211
Rest of GB less Islay		1352	2611	3823	1615	4749	2466	1915	5852	1211
Rest of Scotland less Islay				3774					5775	
England				1					29	
Wales				48					48	

TABLE 2 LISTING OF OTHER IRREGULAR SITES HOLDING GREENLAND WHITE-FRONTED GEESE IN 2011/2012

SITE NAME	SEP	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
Scotland										
Troon, Ayrshire							1			
The Ridings, Carnwath, Clyde					4					
Carbarns Pool, Clyde										1
Loch of Kinnordy, Fife						1	1	1		
Crombie, Fife					1					
Loch Spyggie, Shetland			1	1			2	7	7	2
Ringasta, Mainland, Shetland			1				1			
Veensgarth, Shetland						1				
Culkein, Assynt, Sutherland						1				
Wales										
Rhuddlan, Denbigh										1
Rhyl, Clwyd										1
WWT Llanelli, Dyfed										1
Goldcliff Pill, Gwent			1							
Penberi Pond, St Davids, Pembs						1				3
England										
Abbeytown, Cumbria						10				
Linstock, Cumbria						2	2			
Lessonhall, Cumbria								80		
Skinburnness Marsh, Cumbria						22	22			
Blackdyke, Cumbria					3					
Allonby, Cumbria					11					
Campfield Marsh, Cumbria								15	15	
Axe Estuary Devon		1								
Rainton Meadows, Durham						1	1			
Boldon Flats, Durham			1							
Ribchester, Lancs					2	1				
Rishton Reservoir, Lancs					2	3	1			
Hesketh Marsh, Lancs						1				
Lune Estuary Lancs			7							
Newton Marsh, Lancs										1
Wanlip North Grave Pit, Leics							1			
Alkborough, Lincs						16				
South Ferriby/Whitten, Lincs							1			
WWT Martin Mere, Merseyside							9	1	1	1
Cley, Norfolk							7			
Holkham, Norfolk					5	4	5	6	6	
Titchwell, Norfolk			4							
Anglers Country Park, Rotherham, S Yorks					1	1	1	1		
Boyton Marshes, Suffolk								1		
Southwold, Suffolk						5				
North Warren, Suffolk							1	1		
Hastings, Sussex						1				
Pulborough Brooks, Sussex						1				
Seaton Common, Teesside					1	1				
Wykeham, North Yorks					6	3				
Wintersett Reservoir, Wakefield, Yorks						1	1			
Fairburn Ings, Yorkshire						1				
Wyckham Lakes, Yorkshire						3				
Blackholes Nature Reserve, Yorks						1				
Tophill Low Reservoir Yorkshire					1	1				
Walton W Yorks										1
Isle of Man					1					
Northern Ireland										
Lough Neagh						1				
Strangford Lough						3				
TOTALS		1	15	1	38	87	57	113	29	

COUNTS FROM IRELAND

Excellent coverage was again 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 groups. No counts were reported from the Rinnany area of North Lough Ree so counts from last year were substituted for this site (26 birds). In addition, we were forced to use counts from dates outside the spring international count period for four sites (Nore River, North County Clare, Lough Gara and Killarney). Excluding Loughs Foyle and Swilly where the peak count was substituted because it was known that geese were missed during the international count, these estimates contributed just 1.2% to the total Irish population. The little flock at Caledon seems to be on the verge of extirpation, the flock at Errif and Derrycraff that last winter numbered 19 could not be found in 2011/12. Searches at Drumharlow Lough and Kilglass and Castleforbes detected no geese again confirming these resorts have likely been abandoned.

Overall, most other resorts showed mixed trends, 5 flocks showed modest increases in number compared to last spring, including numbers at Loughs Foyle and Swilly which increased again from 1248 to 1288 birds, but most remarkably the Dunfanaghy flock increased from 46 last year to 169 in spring 2012. The Sheskinmore flock increased from 38 to 41, the Stabannan flock was up from 16 in 2010/11 to 52 in autumn 2011, but only one could be found in spring 2012 and the combined total for the Bog of Erris increased from 25 to 32. Numbers at Lower Lough Corrib remained more or less the same (44 versus 50) as did the flock at Lough Macnean (69 in both years). There were worrying declines at the Midland lakes where numbers had increased from 253 in spring 2010 to 305 last year but fell back to 250 again in spring 2012. Likewise the Pettigo flock increased from 24 in spring 2010 to 71 in 2011 but fell back to 58 this season and the Lough Gara flock which reached 148 in spring 2011 fell back to 54 geese this winter. These unusually large between-year changes suggest that Greenland White-fronted Geese are shifting wintering resort between seasons on a substantial scale, perhaps more so than has been the case in many recent years, however, it may also indicate that some of these flocks are using more feeding sites and becoming ever more challenging to count!

The spring 2012 count from Wexford was 9,567 close to 9,733 counted last spring, which was the highest spring count since 1996, exceeded only then and by spring counts in 1989 and 1994. Given the overall declines in the population as a whole and the poor reproductive success amongst most Irish flocks, including Wexford, it does seem that geese are attracted to the Slobs in a way that maintains high densities there, which suggests that the current management there retains the intrinsic attractiveness of this site compared to elsewhere. Indeed, despite the declining size of the flyway population, spring counts at Wexford in recent years have shown an increase since 2006 and the totals elsewhere in Ireland have been relative constant over the same period (Figure 2 on page 12).

Adding 9,567 at Wexford to the 2,675 counted from the rest of Ireland, and the British totals gave a global total of 22,403 Greenland White-fronted Geese in spring 2012, distressingly down on the 25,765 counted in spring 2011 after the exceptionally good 2010 breeding season, and lower even than the 22,844 counted in spring 2010 (see Figure 3 on page 12).

TABLE 3 GREENLAND WHITE-FRONTED GOOSE IN IRELAND 2011/12

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
DONEGAL										
1. Loughs Foyle and Swilly		22	808	808	700+	1288	355	844+	1288	
2. Dunfanaghy				152	152	128	155	169	169	
3. Sheskinmore Lough		30	32	32		40	38	41	41	
4. Pettigo		0	40	56	56	59	58	58	58	
NORTH CENTRAL										
6. Lough Macnean		39	46	59	59	70	76	69	69	
7. Lough Oughter				8		8	6	3	3	
8. Caledon				1	1			0	0	
33. Stabannan				52	52			1	1	
MAYO										
9. Lough Conn			31	32	32	41		44	44	
Bog of Erris combined		3	5	32	3	32	38	32	32	
MAYO/GALWAY UPLANDS										
11. Errif and Derrycraff			0	0	0	0			0	
12. Connemara				6			6		5	
GALWAY LOWLANDS										
13. Rostaff and Killower			31	71					69	
14. Lower Lough Corrib				45		45		50	50	
15. Rahasane Turlough		18	40	50	50	50	0	57	57	
CLARE/LIMERICK										
16. Tullagher			7	22	22	22	22	22	22	22
17. North County Clare				48			48		48	
SHANNON HEADWATERS										
20. Lough Gara				54	54				54	
21. Drumharlow Lough				0					0	
22. Loughs Kilglass and Castleforbes				0					0	
MIDDLE AND LOWER SHANNON										
24. North Lough Ree				26					26	
25. River Suck		68	99	136	136	187	137	205	205	
26. Little Bronsa				202	202	220	166	167	167	
MIDLANDS										
23. Midland Lakes			132	226	226	232	260	250	250	
27. River Nore				11			11		11	
SOUTH WEST										
30. Killarney Valley				6		6			6	
SOUTH EAST										
Wexford			6170	7962	7962	7662	9062	9567	9567	
COUNT TOTALS										
Ireland without Wexford			7441	10097	9007	10090	10438	10735	12242	22
				2135					2675	

The winter of 2011/12 was also remarkable in Ireland for the appearance of European White-fronted Geese, just as in England, Wales, Scotland and Iceland. Most appeared after the turn of the year, with up to 13 at Wexford Slobs, 4 at Strangford Lough and 25-30 at Lough Neagh. Away from Wexford, Russian birds associated with Greenland flocks at Rahasane Turlough (1), Lurgangreen (1) and Ballylawn (up to 15) with thanks to the www.irishbirding.com site for additional information.

One interesting feature of recent developments in Ireland is that whilst the British counts showed quite rapid declines in the late 1990s and early 2000s, this was not nearly so much the case amongst the Irish counts. Indeed, since the shooting ban in Iceland in 2006, numbers in Ireland away from Wexford have been stable, whilst in the face of a general decline in population size, numbers wintering at Wexford have actually increased (Figure 2)

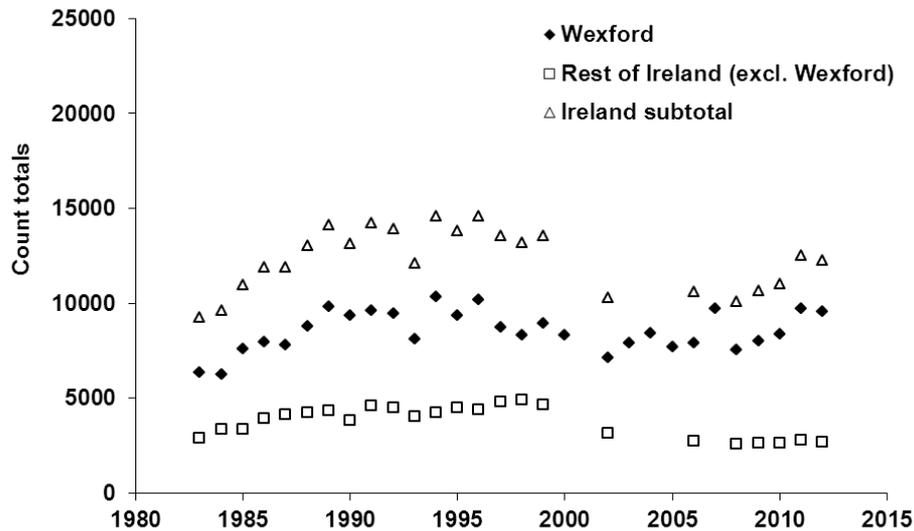


Figure 2. Spring counts of Greenland White-fronted Geese from Wexford Slobs, the rest of Ireland excluding the Wexford count and all Ireland combined, 1983-2012. Values are missing in some years when complete coverage could not be achieved. Values for spring 2001 were missing on account of the outbreak of Foot and Mouth Disease that year and were therefore also estimated from previous counts.

This tendency at Wexford is in stark contrast to the changes in numbers on Islay and in the population as a whole (Figure 3).

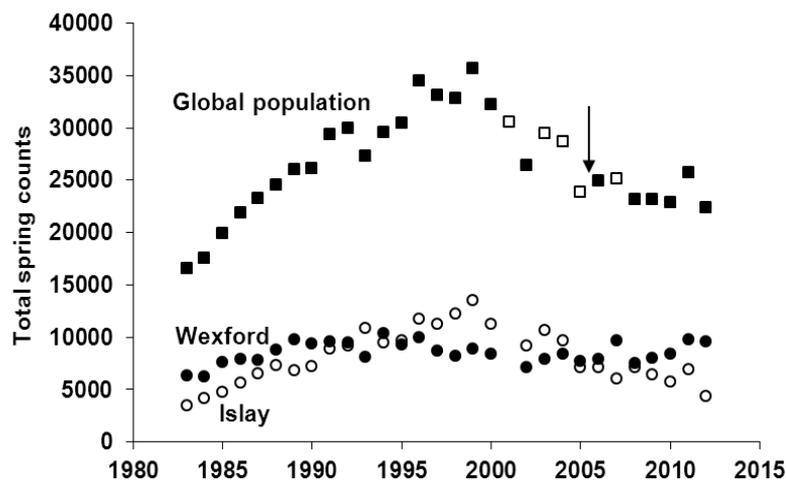


Figure 3. Spring counts of Greenland White-fronted Geese from Wexford Slobs, Islay and the global population count, 1983-2012. Values for the total population size are missing in some years when complete coverage could not be achieved. Values for spring 2001 were missing on account of the outbreak of Foot and Mouth Disease that year and were therefore also estimated from previous counts. The arrow marks the point at which autumn hunting in Iceland was stopped in 2006.

AGE RATIOS IN BRITAIN

We are as ever deeply grateful to so many who took the time and trouble to undertake age ratios and determine brood sizes amongst Greenland White-fronted Goose flocks on the wintering grounds. After the very encouraging high production in summer 2010, 2011 was a poor breeding year again for the population, reverting to much less than the longer term average (see Figure 4). Good coverage in 2011/12 found 8.8% young in the flocks overall (Table 4), substantially down on the bumper breeding success in 2010 which found 21.2% young among the aged samples. Breeding success was generally only reasonable (i.e. breaking 10% amongst all the flocks subject to aging) at Kilpheder on South Uist (25% but with a small sample size), Tiree (12.4%), Moine Mhor (36.4%, 4 young out of the flock of 11 makes a large blip!), Loch Ken (12.6%) and Stranraer (16.1%). Even the Kintyre flocks that have returned with reasonable numbers of young in most recent years fell below 10% and Islay was well down with 9.9% (compared to 22.9% last season and below the average of 13.9% for 1962-2010 inclusive). Away from Islay, the sample of 3,984 birds assigned to age groups showed 8.3% young, falling back to the levels we have seen in many recent years since the mid 1990s (Figure 4). Mean brood size was 2.93 (see Table 4) based on 192 families sampled from many sites, comprising a mean of 3.35 on Islay (n = 91) and 2.54 elsewhere (much lower than last season).

TABLE 4. SUMMARY OF AGE RATIO DETERMINATIONS AND BROOD SIZES FOR GREENLAND WHITE-FRONTED GEESE WINTERING IN BRITAIN 2011/2012.

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Loons, Orkney	3.70	54		
Loch of Mey, Caithness	7.41	108	2.00	4
Westfield, Caithness	7.95	151	2.40	5
Kilpheder, South Uist	25.0	28		
Loch Challuim Chille, Skye	10.0	30	3.00	1
Tiree	12.43	354	2.20	20
Coll	6.61	227		
Appin	5.71	70	2.50	2
Benderloch	8.75	80	2.33	3
Moine Mhor	36.36	11	2.00	2
Rhunahaorine, Kintyre ¹	8.13	763	2.93	14
Machrihanish, Kintyre ¹	6.09	1035	2.90	21
Clachan, Kintyre ¹	9.09	198	2.57	7
Colonsay	5.56	54	3.00	3
Islay ¹	9.86	1867	3.35	91
Inver, Jura ¹	7.94	63	1.67	3
Bute	6.84	190		
Loch Ken	12.57	183	3.29	7
Stranraer	16.08	143	2.09	11
Endrick Mouth	7.73	194		
Dyfi Estuary	0	48		
Britain, excl. Islay	8.31	3984	2.54	101
OVERALL	8.80	5851	2.93	192

¹Details from Islay and Kintyre courtesy of Dr Malcolm Ogilvie

These low rates of production mark a return to levels similar to those of the last 12 years which for Islay at least have fallen below the long term average in most recent years, with the notable exception of the 2010 summer (Figure 4).

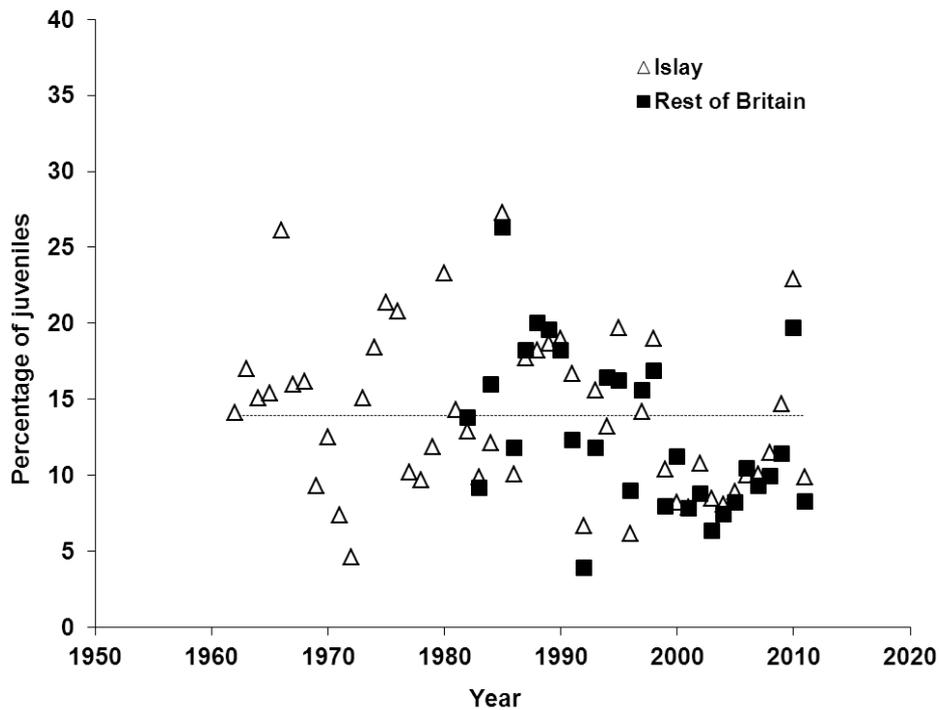


Figure 4. Age ratios sampled amongst Greenland White-fronted Geese at Islay 1962-2011 and compiled from other sites in Scotland and Wales, 1983-2011. The dotted line indicates the average percentage young amongst samples from Islay for 1962-2011.

AGE RATIOS FROM IRELAND

Breeding success at all Irish sites where age ratios were sampled showed poor production of young, with only Pettigo (23.7%) exceeding 12% young (see Table 5). In areas away from Wexford, there was an average of 9.9% young (n = 931, compared to 13.1% last winter) compared with 7.1% at Wexford Slobs (n = 4342, compared to 14.7% last winter). This represents a rather disappointing reversal to the much less than 10% production of young that has been a feature of reproductive success in most years since the mid 1990s, broken only by the high reproductive success achieved in summer 2010 (although even this was considerably lower than in Scotland that season).

TABLE 5. SUMMARY OF AGE RATIO DETERMINATIONS AND BROOD SIZES FOR GREENLAND WHITE-FRONTED GEESE WINTERING IN IRELAND 2011/2012.

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Loughs Foyle & Swilly	11.07	262	2.23	13
Dunfanaghy	6.84	117	2.00	4
Sheskinmore	9.76	41	2.00	2
Pettigo	23.73	59	1.50	2
Lough Macnean	10.14	69		
Bog of Erris	0	3		
Rostaff and Killower	5.63	71	2.00	2
Rahasane Turlough	11.11	18		
Midland Lakes	8.11	259	1.83	6
Wexford	7.14	4342	2.86	80
Ireland, excl. Wexford	9.88%	931	2.00	31
OVERALL	7.62%	5273	2.62	111

As in Scotland, these low rates of production also mark a return to those of the last 12 years, falling below the long term average in most recent years, with the notable exception of the 2010 summer, although this fell well below the production of young elsewhere that year (Figure 5).

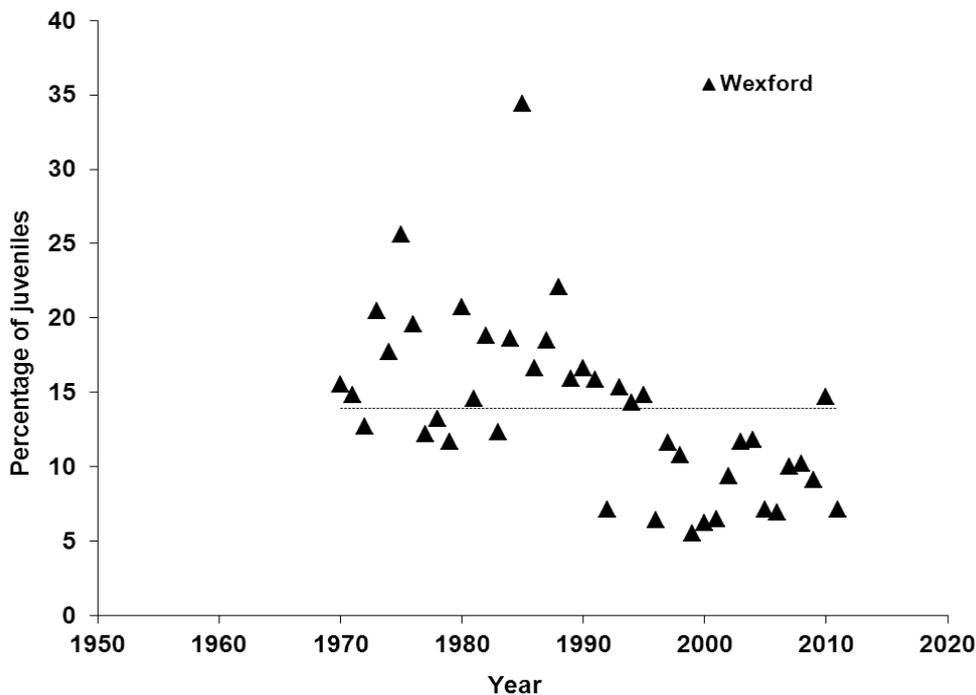


Figure 5. Age ratios sampled amongst Greenland White-fronted Geese at Wexford 1970-2011. The dotted line indicates the average percentage young amongst samples from Wexford for 1970-2011.

PROGRESS WITH THE INTERNATIONAL FLYWAY MANAGEMENT PLAN FOR GREENLAND WHITE-FRONTED GEESE

As you will be well aware, the Greenland White-fronted Goose is classified as Endangered under IUCN Red Data List criteria, listed as a priority species under the UK's Biodiversity Action Plan due to declines in the global population since the late 1990s. It is also listed on Annex 1 of the Birds Directive, requiring actions in Ireland and the United Kingdom. As a result, the population was one of only four birds listed by Scottish Natural Heritage (SNH) for urgent conservation actions under their Species Action Framework programme, begun in 2007. This initiative enabled the gathering of more than 50 experts from Ireland, Scotland, England, Wales, Northern Ireland, Iceland, Greenland, Denmark and Germany at a workshop organized on Islay in 2009, hosted by SNH and GWGS. With inputs from Canada and the United States, the workshop participants developed a draft International Action Plan for consultation which is available at:

http://www.unep-aewa.org/meetings/en/mop/mop5_docs/pdf/mop5_27_draft_ssap_gwfg.pdf

More information about the workshop can be found at:

<http://gwfg-conservation.wikispaces.com/Islay+international+workshop>

This process has continued since the 2009 workshop, during which time, several developments have already helped support and improve the situation for the geese outside of the formal planning process. For example:

- In 2011, Iceland designated a major wetland of international importance under the Ramsar Convention in western Iceland critical for Greenland White-fronted Geese as a refuelling site on their migratory flights between British and Irish wintering areas and Greenland
- The Scottish Government prioritised conservation management of Greenland White-fronted Geese under their 2011 Goose Policy Review
- SNH has funded a survey of the needs of the small and vulnerable wintering sites for these geese in Scotland, to improve management at these and at major wintering sites, and
- Further research and survey work has been undertaken collaboratively in Greenland, Iceland, Scotland and Ireland.

Evidence suggests recent poor breeding relates to spring snow in west Greenland that could be part of a decadal cyclical climate pattern; a modest increase in numbers occurred after an exceptionally successful breeding season following the snow-free spring and mild summer of 2010, although as we have seen in this report, the breeding success in 2011 has slipped back to below 10% and numbers have fallen back in 2011/12, underlining the need for continued monitoring and vigilance and greater efforts to understand the declines in the overall populations size.

After widespread consultation and discussion, the Plan was finally signed off at the African-Eurasian Waterbird Agreement (AEWA) Meeting of the Parties (MOP) to the in May 2012 in La Rochelle, western France. The regular MOP brings together representatives of 67 governments and many other interested organisations every three years to discuss conservation needs of migratory waterbirds and prioritise actions needed to conserve them. The ratified plan for Greenland White-fronted Goose was one of several single species action plans developed for particular taxa with conservation problems in recent years, but its formal adoption as an AWEA Plan means that the recommendations for actions can now be implemented. Now at last there is an agreed framework of cooperation and prioritised actions in place to better safeguard the population in the future.

The Plan, which builds heavily on the process started at the first plan workshop in Wexford in 1993, broadly calls for:

- improved monitoring and research into the causes of population decline.
- actions on wintering areas in UK and Ireland, and stop over areas in Iceland, to ensure that geese return to Greenland in the best condition for successful breeding.
- urgent efforts to further reduce unnecessary causes of death – for example, through collision with man-made structures, illegal killing or killing on migration routes.
- measures to further improve feeding habitats and reduce conflicts with humans – especially in agricultural areas; and
- improved protection and management of important areas used by the geese in all parts of their international range.

The adoption of this Plan represents a breakthrough in setting priorities for this threatened population, which in recent decades has been exposed to unprecedented environmental change. The plan will now provide a unique opportunity for concerted action by all the countries hosting this charismatic goose.

David Stroud

TRACKING THE FORTUNES OF THE GREENLAND WHITE-FRONTED GOOSE – A NEW PHD STUDY

After a period of increase under protection from hunting on the winter quarters in the early 1980s, the Greenland White-fronted Goose *Anser albifrons flavirostris* population has declined markedly since the late 1990s due to consistently low breeding success. In 2006, the hunting of Greenland White-fronts was banned in Iceland, yielding complete protection throughout their annual cycle (other than in England and Wales); although the ban helped halt the decline, the cause of the low breeding success continues to puzzle researchers. Greenland White-fronted Geese breed in west Greenland, stop-over during autumn and spring in Iceland and winter in Ireland and western parts of Britain. The purpose of my PhD—a collaboration between the University of Exeter, WWT and the Greenland White-fronted Goose Study (GWGS)—is to better understand the reasons for the population decline and in particular, the low rates of reproductive success.

One approach is to examine decisions made by individual birds throughout the year and ultimately link these decisions to reproductive output in successive years. Greenland White-fronted Geese are unique among wildfowl in that less than 5% of geese marked in their first winter ever breed successfully. It is this enigmatic portion of the population I wish to further examine. In addition, I hope to gain an important insight into the reasons why the other 95% of birds never breed, but still migrate to Greenland each spring. Fortunately, collaborators in Britain and Ireland have maintained a long-term database of resightings of marked individuals and counts of all known regular wintering resorts since 1982, so there is a wealth of historical data to analyse.

Flock sizes have fluctuated at most wintering resorts since counts began, although the mechanism behind this is not understood. Curiously, the large White-front flock at Wexford, Ireland, has remained relatively stable since the early 1990s, despite the overall declining population size, in contrast to numbers on Islay, west Scotland, which more than doubled, but have now fallen back to the same levels as in the late 1980s. By analysing these data, I hope to help explain variation in flock sizes and specific strategies of breeding birds.

To examine the specific behaviour of individuals and how this affects their propensity to breed, this past winter (2011/12), I began fieldwork in Ireland and Scotland where 20 GPS/accelerometer tags were fitted to male Greenland White-fronts. The tags record one GPS fix per day and an electronic trace of movement in three dimensions that enables behaviour to be recorded every six minutes for up to a year. Data can be downloaded remotely to a mobile base station using an antenna aimed at the tags on the geese from a distance of 300–500 m. This fine-scale behavioural data will provide new insights into individual strategies of birds as we shall be able to plot the duration of behaviours of each tagged bird throughout the year to see how long they feed, rest, fly and invest in other key activities.

Another important portion of my work has been the observation of social interactions between family groups. It is thought that larger family groups enjoy access to the highest-quality food and habitat throughout the year, therefore potentially contributing the greatest number of young annually to the population. In the next few years, I would like to better explain the advantages of membership of large family groups, while also detailing the potential costs of newly established pairs splitting from their respective parents.

While family group size may be very important to breeding success, overall condition of birds and food availability during migration is fundamentally important for population stability. From the mid-1980s, studies of Greenland White-fronted Geese have taken place at Hvanneyri, western Iceland, home to the Agricultural University of Iceland and one of the most important staging areas for the geese as they prepare for migration onward to Greenland. To determine overall condition of birds this year, a 12-member team consisting of professionals and volunteers from the Czech Republic, Denmark, England, Ireland and Scotland conducted daily goose counts, documented the amount of fat storage in individuals, and resighted collared birds for the entire stop-over period (3 April to 6 May 2012). An average of 1,000 Greenland White-fronts were counted on fields at Hvanneyri; peak numbers occurred on 22 April, when nearly 2,000 birds were counted. In addition, the team generated over 900 resightings of collared birds; most were collared at Wexford, Ireland. A few

resightings were of birds collared in the late 1990s, making them 12–15 years old. Two of the team members, Kerry Mackie (WWT) and Alyn Walsh (National Parks and Wildlife Service of Ireland), coordinated cannon-netting efforts, catching 66 new birds and two recaptures; this important injection of collared birds into the population will contribute to our studies and estimates of long-term survival of individuals.

Preliminary results from this spring suggest that the geese arrived 10–14 days earlier than average, as conditions in Iceland were mild and snow had melted by mid-February. In fact, the first flocks arrived on 24 March, the earliest documented arrival date. Further, the geese were in exceptional condition from early April; abdominal profiles (which indicates fat storage) of many individuals during early April were not dissimilar to those of birds departing for Greenland in past years.

We also observed many birds resting in fields throughout the day, perhaps due to their exceptional condition. Indeed, many birds were in departure condition from mid-April, although the mean departure date was only slightly earlier than in previous years. These results indicate the stop-over period in Iceland is increasing. Historically, White-fronts have stayed for about three weeks, but this period has now lengthened to nearly six weeks. Although further research is needed at stop over areas, it seems likely that changes in climate have resulted in warmer conditions and thus increased foraging opportunities in Iceland, which the birds are exploiting.

The Iceland trip completes the fieldwork for this season and my thanks to all the participants. I will return (as will the geese) to wintering sites in Ireland and Scotland this November, as I continue to follow the 20 tagged birds. Ideally, I'll use historical and tag data to better understand the Greenland White-fronted Goose population decline and provide management recommendations to return this important population to favourable conservation status.

Mitch Weegman



Greenland White-fronted Geese in flight at Hvanneyri, west Iceland - photo Alyn Walsh.

GOOSE SURVEYS IN ISUNNGUA, WEST GREENLAND - JULY 2012



The view to the ice cap, Isunngua, near Kangerlussuaq, west Greenland - photo David Stroud.

July 2012 saw the eleventh GWGS survey of geese in Isunngua, west Greenland. First visited in 1988, we have caught and ringed geese in this area in five years, with a concerted effort more recently to assess goose numbers and distribution over as wide an area as possible.

Rachel and David Stroud, Jade Walton and Ella Vogel arrived in the area on 15 July and spent the first days back-packing about 100 kg of food nine miles through the hilly trackless landscape to establish Base Camp close to the highest hill in Isunngua. Truly ‘a room with a view’ (see above!), but more importantly this was a strategic location for a base that gave us easy access in all directions to the many lakes used by moulting geese. We were joined on 19 July by Huw Thomas who arrived at camp having walked an impressive hundred miles or so from the coast!

After a cold wet June, early July had seen an unprecedented warming event in Greenland, with above freezing temperatures across the whole of the ice-sheet. This event was “unprecedented” according to NASA, see:

http://www.nasa.gov/home/hqnews/2012/jul/HQ_12-249_Greenland_Ice_Sheet_Melt.html

...and resulted in huge amounts of melt water which destroyed the bridge joining the two parts of the settlement at nearby Kangerlussuaq. The climatic shape of things to come...

Over the course of the next two weeks we surveyed 246 lakes or pool systems over an area that stretched roughly 35 miles west from the edge of the ice-sheet and extended 15 miles between the two vast glacial melt-rivers (“sandur”) that drain the local glaciers. The results were depressing. In the local area around Base Camp and, where we have previously caught, we located just 16 non-breeding White-fronted Geese. These included J1F (first caught here in 1997, recaptured in 2008 and re-seen in 2009 and 2010), and J0F, J3F and J5F (ringed in 2008). All were seen on the lake where they had originally been caught and had been seen in subsequent years indicating – as in the non-breeding season – a very high degree of fidelity in the use of sites between years.



Greenland White-fronted Goose J1F at recapture in 2008 showing the extent of collar fading since ringing in 1997 (left - photo Huw Thomas). Canada Goose GH7 with associates in Isunngua, summer 2012(right), a bird caught there in July 2009 and seen subsequently in New Jersey in winter (January 2010) and Quebec in spring (2010 and 2012), as well as in Isunngua summer 2010 (right - photo Ella Vogel).

Relocating J1F was exciting as we have a detailed history of this bird: it has been seen almost annually on Kintyre since 1997, but then moving to Islay in 2007/8 where it was seen again at Corsapol by Dick Hewitt last winter. As well as these collared birds, at least one other bird with just a white leg-ring was present, but alas these are near impossible to read at Greenlandic distances. It was probably ringed as a youngster in a previous year.

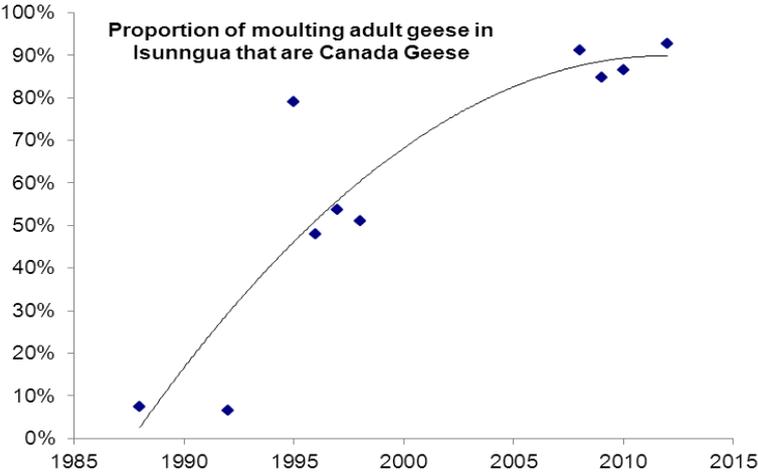
We had many more sightings of ringed Canada Geese: a total of 30 individuals were seen having been marked in 1997 (1), 2008 (14) and 2009 (15). Whilst many of these had been seen either away from Greenland either on migration in Canada or on wintering areas in north-eastern USA, a few had eluded previous observation and were ‘new’ since ringing. A more detailed analysis of these sightings will be available at <http://greenland2012.wikispaces.com/Recoveries+and+resightings> later this autumn.

In late July, a three day trek to the ice-sheet to count the eastern end of Isunngua produced the single largest flock of White-fronts in the area. A group of 40 together (including a family with three young) were the only evidence of breeding this year in Isunngua, yielding productivity of just 5% (three out of 59 birds seen). In total, we saw 680 adult Canada Geese with 339 young - a productivity of 33.3% (mean brood size of 3.4).



Non-breeding Greenland White-fronted Geese flying on their newly regrown wings, 28 July 2012 - photo Ella Vogel.

The continuing decline of White-fronts and increase in Canada Geese is depressing. In contrast to our first visit in 1988 when we saw the first significant flock of Canada Geese reported in west Greenland, numbers have progressively increased such that now 94% of all adult geese we saw this year were Canadas. Yet the resightings of J1F and associates suggest that birds may not be being displaced – rather the local decline seems more likely due to chronic low productivity.



Yet while there are at least some White-fronts in the area, it is likely that we will continue to go back!

David & Rachel Stroud, Huw Thomas, Ella Vogel and Jade Walton

RESEARCH NEWS

Most of the contemporary research news relating to Greenland White-fronted Geese concerns Mitch Weegman and the remarkable start he has made to his PhD, carrying out exhausting work in Wexford, Loch Ken and Hvanneyri long before completing his first year! Articles were published on the Canada Geese that increasingly occur in west Greenland from northern Canada, with results from the post-moulting aerial surveys in west Greenland confirming the abundance of *Branta canadensis* there (Fox & Glahter 2010), the potential reasons for geese shifting from their former areas in northern Quebec (Fox *et al.* 2011) and recent evidence suggesting that the vast majority are of the race *interior*, whilst the small race form *hutchinsii* appears rather rare. Re-examination of museum skins and photos suggested earlier claims of the subspecies *parvipes* were *interior*, so this form has not been reported from Greenland (Fox *et al.* 2012). A feature of recent annual reports has been the gradual advancement in the departure of Greenland White-fronted Geese in spring. This is especially marked at Wexford, where the geese departed 15 days earlier in 2007 than they did in 1973, but birds in Scotland show a similar trend of 13 days (Fox & Walsh 2012). Surprisingly, Wexford departure date did not correlate with spring temperature, but did so with mean abdominal profile score adjusted for date. In other words, geese have accumulated fat stored earlier, enabling geese to progressively depart earlier and the state of the abdomens of the geese on 1st April in each year was a statistically significant predictor of departure date for the wintering population at Wexford! The trend has continued, so this year all the Wexford birds were long gone by 1 April and we begin to wonder where this development will end. Icelandic temperatures at critical midway staging areas have shown no significant change since 1973, creating a potential mismatch in food availability along the migratory route. However, the Greenland White-fronted Geese have shifted from consuming below-ground plant storage organs in Iceland in spring to grazing managed hayfields created since the 1950s where fresh grass shoot growth occurs despite subzero temperatures, when traditional natural foods are physically inaccessible to staging geese due to frozen substrates (Fox *et al.* 2012). Rates of fat accumulation (measured by field scores of abdominal profiles) and body weight change (measured in captured geese) were the same in the springs of 1997, 1998 and 1999 as in that of 2007 when the geese migrated 10 days earlier. Hence, despite earlier arrival in Iceland in 2007 the geese put on vital fat for migration just as fast as in the other earlier years. The shift to acquiring energy from artificial grasslands has enabled Greenland White-fronted Geese to arrive in Iceland earlier, but has apparently not impaired their ability to accumulate fat reserves required for onwards migration, which occurs at the same rate, only now much earlier in the spring. Please send an e-mail to tfo@dmu.dk if anyone would like electronic copies of these or any other articles related to Greenland White-fronted Geese.

Fox, A.D. & Glahter, C.M. (2010) Distribution and abundance of post moulting White-fronted and Canada Geese in west Greenland 2007. *Polar Research* 29: 413-420.

Fox, A.D., Mitchell, C., Weegman, M.D., Griffin, L., Thomas, H., Stroud, D.A. & Francis, I.S. (2011) Potential factors influencing increasing numbers of Canada Geese in Isunngua, west Greenland. *Wildfowl* 61: 30-44.

Fox, A.D. & Walsh, A.J. (2012) Warming winter effects, fat store accumulation and timing of spring departure of Greenland White-fronted Geese *Anser albifrons flavirostris* from their winter quarters. *Hydrobiologia* 697: 97-102.

Fox, A.D., Boyd, H., Walsh, A.J., Stroud, D.A., Nyeland, J. & Cromie, R. (2012) Earlier spring staging in Iceland amongst Greenland White-fronted Geese *Anser albifrons flavirostris* achieved without cost to refuelling rates. *Hydrobiologia* 697: 103-110.

Fox, A.D., Sinnett, D., Baroch, J., Stroud, D.A., Kampp, K., Egevang, C. & Boertmann, D. (2012) The status of Canada Goose subspecies in Greenland. *Dansk Ornitologisk Forenings Tidsskrift* 106: 87-92.

OBITUARIES

The Greenland White-fronted Goose lost four very significant friends and supporters in the course of last year.

ANDREW CURRIE

It is also with enormous sadness that we have to tell of the loss of Andrew Currie, who passed away peacefully on 28 March 2012. Andrew was one of the original network of counters recruited in the early 1980s by David Stroud to count Greenland White-fronted Geese on Skye, where he lived for many years in a cottage in Broadford where he could regularly keep an eye on the local wintering flock. Andrew was a most impressive man, extraordinarily humble but with a colossal knowledge of nature and wildlife, a meticulous observer of nature and people, as well as a passion for Scotland, its people, her culture and landscape. He believed very much that as man had shaped the landscape, so it was that humans were very much an integral part of its management, both the source of many of the problems but very much involved in finding solutions. He moved to Skye in 1976 to take over as Assistant Regional Officer for the Nature Conservancy responsible for the Outer Hebrides and the Small Isles, latterly continuing in the same post responsible for Skye and Lochalsh until his retirement. He acquired an incredible knowledge of Skye, its people and its wildlife and although he would never admit to any such thing, was extraordinarily knowledgeable about the little Broadford flock of White-fronted Geese as a result of his careful and patient observations of the birds. Andrew was a great character, full of great anecdotes and stories, but told always as a distant observer, usually about other people and their achievements. Yet the reality was that it was very much Andrew who was the man at the centre of bringing the magic of nature and wildlife to those who were not so well aware as he, especially on his beloved Skye. He achieved a great deal for nature conservation by his good nature and wisdom, not least through his Nature Diary that was such a regular and entertaining feature of the West Highland Free Press for so many years, as well as via his very many radio broadcasts. I was privileged to work with him at NCC in Inverness in the early 1980s and was to benefit greatly from his great fund of experiences and vast knowledge of the Moray Firth in particular and the Highlands in general. It was a very sad day indeed when he eventually relinquished his role as the counter of the Broadford flock. I still miss his letters and his telling observations that used to come with his distinctive handwriting with every season. GWGS has lost a great friend and a loyal supporter of the census over very many years, but Skye has lost a great advocate for nature and her people.

Tony Fox

JOHN HENNIGAN

It is with deep regret that we have to record the passing of one of our colleagues John Hennigan of Lurganboy, Ardara Co. Donegal. John was a Conservation Ranger with the National Parks and Wildlife Service from 1980 to 1998. He was hugely supportive of the Greenland White-fronted Goose Project from its inception in 1982 and very protective of his own flock primarily in the Sheskinmore area of Co. Donegal. John's support in the early days

of our cannon-netting attempts on the site made catching infinitely more achievable, than if we had had to start from scratch. His natural field craft and understanding of the Greenland White-fronted Goose behaviour, movements, preferred feeding sites and their roost patterns was incredible. We shared many a cold winter's morning in the hide waiting patiently for a catch opportunity and generally being teased and tortured by the wary geese.

However, we did successfully catch and mark over 57 White-fronts there between 1985 and 1996, including our poorest catch of just one White-front, due to a misfire. We well remember John consoling us in a way only he and his wife Aileen could, by a massive serving of hospitality. Our best catch contained over 134 Barnacle Geese and this record still holds today for the whole of Ireland.

John never missed a chance to be out on surveys and always relayed his observations, thoughts and insights with a refreshing enthusiasm. John passed away on 25 February 2012, just one day from his 79th Birthday. Sadly missed by his family, friends and colleagues, his beloved flock has lost a great guardian.

Alyn Walsh and H. John Wilson

STAN LAYBOURNE

After thirty years of unflinching and outstanding service and loyalty to the annual Greenland White-fronted Goose counts and many more Scottish bird causes besides, we are deeply saddened to have to report the death of Stan Laybourne on 9 June 2012. Although Stan's health had been deteriorating for more than a year, his loss was nevertheless unexpected and a great shock to everyone. Right up until the last, Stan had been campaigning for his beloved geese. His discovery of 7 dead Greenland White-fronted Geese under the pylons and high tension cables at Bardnaheigh Farm in early February 2012 had started a fierce exchange of letters with Southern Scottish, the company responsible for the cables. For much of the last six winters, he had been campaigning against the siting of wind turbines of all sizes in and around the feeding and roosting areas of the Caithness White-fronted Goose flocks. His discovery of the geese after their collision with the wires deepened his sense of foreboding regarding the erection of turbines in the area, showing that the geese continue to be highly vulnerable to collisions with man-made objects, even those with which they are familiar. Stan had been tireless advocate for the geese in a corner of Scotland where there are few enthusiasts to raise a voice in their defence. His knowledge and understanding of their habits, behaviour and resorts was second to none. In the 1970s, he had tramped all the moors, flows and bogs of Caithness and knew so many of the secrets of the geese (and the many other rare and fascinating birds of that area as well) long before the tyranny of the conifer plantations began to destroy their habitats. He spoke fondly of those habitats and those days before the plough wreaked such havoc, but was also encouraged to see the great achievements of late in rehabilitating some of these same incredible peatland systems. In recent years, illness had increasingly restricted his mobility, but there was little that was able to restrain Stan Laybourne, who nevertheless managed to cover all the Caithness flocks on every occasion in all recent years, investing an enormous amount of time and energy to observe, learn and understand when they changed their behaviour or patterns. "Stan the Man" was such an

enthusiast – an inveterate searcher for leg rings and collars, he had been so excited and pleased to find and follow many Greenland-ringed birds in his flocks over the years. He even travelled to Iceland with his wife Eileen to watch his beloved geese there en route to Greenland. He was passionate, dedicated and enthusiastic, and as his illness increasingly restricted his movements, he must have suffered a huge amount, yet he never complained. He was always upbeat, ever ready to “talk geese” and keen to find solutions to the threats to them and their habitats. I personally will miss him terribly, his marvellous blethers on the phone, the wonderful insights, his knowledge and laughter. The annual census will never be the same again. We can only but agree with his oldest daughter Claire, who hoped that “Dad was reunited with A33”, one of the first of very many marked Greenland White-fronted Geese (marked in Eqalungmiut Nunaat in summer 1979) that Stan reported from amongst the Caithness flocks. I do not know what we shall do without him.

Tony Fox

PETER WORMELL

Peter Wormell, who died earlier this year, was a pioneer of modern Scottish conservation. Following work in Zambia for the Colonial Forest Service in the 1950s, Peter was appointed as the first Warden/Naturalist of Rùm National Nature Reserve in July 1957 – acquired by the Nature Conservancy (NC) in March that year. During his early years on Rùm, he paid particular attention to re-establishing native woodland on the island – which historically had been virtually eliminated from the island by over-grazing by sheep and Red Deer. Collecting seed from the few remaining trees, Peter established a native tree nursery, progressively planting saplings out into fenced areas. Undertaken entirely on his own initiative, the initial re-planting work was not part of any approved island management. However, as the extent of re-established native woodland became progressively greater and the environmental benefits self-apparent, it soon became part of NC’s formal management vision for the island. Indeed, Peter became increasingly asked for advice about establishing similar native regeneration schemes elsewhere and his pioneering work significantly inspired the ‘rewilding Scotland’ movement of more recent decades. Today over a million native trees have been planted over 1,450 ha of Rùm (Wormell 1968, Stiven & Smith 2005). In 1976, Peter moved from Rùm to become the Nature Conservancy Council’s Assistant Regional Office for North Argyll, with single-handed responsibility for statutory conservation over huge area of the mainland as well as for Mull, Coll, Tiree, Colonsay and Oronsay. In the early 1980s, Peter was highly supportive as GWGS sought to establish a network to undertake the first co-ordinated Greenland White-fronted Goose census in the winter of 1982/3. He generously shared knowledge of ‘his patch’ both providing counts and information on the Benderloch and Lismore flocks close to his home. More importantly, he suggested numerous contacts and provided introductions to potential counters as well as significant land-owners. Peter was an outstanding all-round naturalist, publishing in many different fields, especially entomology (Wormell 1983), but also botany and ornithology. His introductory contribution to NCC and SOC’s 1989 review of bird studies on Coll and Tiree continues to provide insights into the evolution of the cultural landscapes of these islands and their significance for birds – including for wintering geese (Wormell 1989). Above all, Peter was hugely generous with his time and knowledge, never failing to provide detailed and prompt hand-written responses to

queries. In retirement he continued to strongly engage a range of environmental concerns, launching a campaign to raise £25,000 to undertake a native forest restoration in Zambia. He will be greatly missed by all.

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David Stroud

ACKNOWLEDGEMENTS

We continue to be deeply indebted to all of you who so happily provide counts, age ratios, ring readings and countless experiences and anecdotes relating to Greenland White-fronted Geese on their winter quarters. We are very grateful indeed to you all, and we hope that we never take your massive contribution for granted! Thanks so very much for your counts and help again this year! It is trivial to say it, but we would simply not be able to provide an annual assessment of population size and understand why we see the changes between year if you did not continue to submit counts, age ratios, resightings of marked individuals and observations. So thank you again! For Britain during 2011/12, these include: John Adair, Bob Adam, Vicky Anderson, Ian Bainbridge, Izzy Baker, Dave Beaumont, Dave Batty, Pat Batty, Pete Berry, John Bowler, Julian Branscombe, Roger Broad, Kenny Buchan, G. Chambers, George Christie, Paul Collin, Andrew Dacre, Paul Daw, Alisdair Dawes, 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, Margaret Keirnen, Wilma Kelly, John Kemp, Andy Knight, Morven Laurie, the late lamented 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, Duncan Spencer, 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. For Ireland, these include: Wesley Atkinson, Penny Bartlett, Dominic Berridge, Helen Boland, Dermot Breen, Noel Bugler, Carl Byrne, Mark Byrne, David Cabot, Sue Callaghan John Carroll, Helen Carthy, Cameron Clotworthy, Kendrew Colhoun, Pdraig

Comerford, Jimi Conroy, Dick Coombes, William Cormacan, Fionnbar Cross, Olivia Crowe, Eamon Doran, Pascal Dower, Dave Duggan, Maurice Eakin, Fiona Farrell, Triona Finnen, Pat Foley, Leonard Floyd, Ciara Flynn, Ciaran Foley, Katherine Freeman, Jenny Fuller, Joe Gatins, Emma Glanville, Jervis Good, Michael Hackett, Cathryn Hannon, Seamus Hassett, Stephen Heery, Gerry Higgins, John Higgins, Robert Holloway, Emmet Johnston, Stefan Jones, Elaine Keegan, Judit Kelemen, James Kilroy, Annette Lynch, David Lyons, Lee McDaid, David McDonagh, Maurice McDonnell, Graham McElwaine, Eoin McGreal, Dermot Mclaughlin, Frank McMahon, Dave McNamera, Emer Magee, Breffini Martin, John Matthews, Eleanor Mayes, Oscar Merne, Eamonn Meskell, Robbie Miller, Sue Moles, Jason Monaghan, Enda Mooney, Gerry Murphy, Jacinta Murphy, Tony Murray, David Norriss, Irene O'Brien, John O'Connor, Aonghus O'Donnell, Declan O'Donnell, Ger O'Donnell, Pdraig O'Donnell, Barry O'Donoghue, Tim O'Donoghue, Ciara O'Mahony, Paddy O'Sullivan, Linda Patton, Peter Philips, Brian Porter, Brad Robson, Tim Roderick, Joe Shannon, Lorcan Scott, Ralph Sheppard, Andrew Speer, Raymond Stephens, Denis Strong, Dave Suddaby, Val Swan, Rebecca Teesdale, Matthew Tickner, David Tierney, Pat Vaughan, Patrick Warner, Ross Watson, Mitch Weegman, Lorna Whiteside and John Wilson.

Every year we do our best to remember to thank everybody here, but we are only human and increasingly forgetful, so we are very sorry if we may have unintentionally forgotten to name your contribution! Our enormous and heartfelt thanks go to the many folk who maintain web sites and blogs (too many to thank individually) that provided extra count data and interesting sightings which were especially invaluable during winter 2011/12 when so many Greenland White-fronted Geese were reported from unconventional and non-regular sites.

We gratefully acknowledge the continuing programme of research and surveillance carried out by the National Parks and Wildlife Service and the count network in Ireland for another fantastic effort to gather all the data for this report. We are especially grateful for the continuing help and support of Dave Norriss and his unbounded knowledge of the Irish down country flocks, without whom this report would not be possible in its current form. Thanks to SNH for site coverage throughout Argyll, especially to Tracey Johnston, Morven Laurie 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 the Wildfowl and Wetlands Trust under their UK Goose and Swan Monitoring Programme, and we thank Rich Hearn and Carl Mitchell for their continued help and support for the project.

PLEASE NOTE THE AGREED COUNT DATES FOR THE COMING YEAR:

Internationally coordinated counts: 15-19 December 2012 and 16-20 March 2013

Preferred monthly counts: 10-14 November 2012, 12-16 January 2013, 9-13 February 2013 and 2-6 March 2013