

REPORT OF THE 2016/2017 INTERNATIONAL CENSUS OF GREENLAND WHITE-FRONTED GEESE

by

GREENLAND WHITE-FRONTED GOOSE STUDY



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SUMMARY

The global population of Greenland White-fronted Geese in spring 2017 comprised 20,556 individuals, up from 18,879 (by 8.9%) on the previous year. The increase was largely the result of a 9.8% increase at Wexford, 18.5% increase on Islay and 6.9% in the rest of Britain, while elsewhere in Ireland, numbers continued to fall by 12.0% from 2,172 to 1,912. Reproductive success was at last encouragingly up in Ireland at 12.5% and 16.5% in Britain.

This report presents the results of the surveys of the Greenland White-fronted Goose on the wintering grounds in winter 2016/17, combining counts from all the British resorts (coordinated by the Greenland White-fronted Goose Study) and those in Ireland (coordinated by the National Parks and Wildlife Service). The international coordinated count in spring 2017 found a combined global total of 20,556 Greenland White-fronted Geese, up on the spring 2016 count of 18,879, an increase of 8.9%.

Good coverage was achieved in Ireland in spring 2017 deriving a total count of 8,959. This total comprised 7,047 counted at Wexford and 1,912 elsewhere, which compares with 6,421 and 2,172 in spring 2016. Missing spring counts were substituted for 15 Irish resorts, mostly January counts for these sites, which contributed 18.3% of the Irish total.

Complete censuses of all known Greenland White-fronted Goose wintering haunts in Britain found totals of 10,326 birds in autumn 2016 and 11,597 in spring 2017, compared with 9,390 and 10,286 respectively reported in the previous season at the same times of year. The 2016/2017 totals comprised 1 bird and 0 reported in England, 25 and 36 in Wales, 5,585 and 6,141 on Islay (compared to 4,644 and 5,183 respectively last season) and 4,715 and 5,420 in the rest of Scotland in autumn and spring respectively (compared with 4,711 and 5,061 respectively last season). Coverage in Britain was more or less complete, all resorts were counted at least once in the season, excluding the Small Isles (where there no longer seem to be regularly wintering geese). Spring counts were missing from the specified count period from seven resorts, but all were substituted with counts undertaken very close to the defined international count dates, amounting to 3.0% of the British total.

*Breeding success amongst flocks wintering in **Ireland** at long last showed some sign of increase following the summer of 2016. The percentage young amongst aged flocks in 2016/17 nationally was 12.5% (based on 3,881 aged individuals) very much better than in recent years (e.g. 6.9% in 2013/14, 6.1% in 2014/15 and 6.0% in 2015/16). Mean brood size amongst the Irish flocks was 3.04 (n = 112) compared to 2.57 last season. There were 12.2% young amongst 3,439 aged at Wexford, most encouragingly up on 5.8% on last year and the highest level of productivity since 1995 (14.8%) excepting 2010 when it also reached 14.7%. Mean brood size at Wexford in 2015/16 was 3.13 (compared to 2.57 last season) based on 105 broods. Elsewhere in Ireland, reproductive success was also well up on recent years, reaching an impressive 14.9% (n = 442), with mean brood size of 1.71 (n = 7).*

*Breeding success amongst geese wintering at **British** resorts was again very reasonable compared to many recent years, not just on Islay but also at many of the resorts of smaller flocks. After the 2016 breeding season, the average percentage young was encouragingly 16.5% (n = 6,408 aged, compared to 15.5% last season), mean brood size was 2.78 (n = 254 broods, compared to 2.96 last season). This included an encouraging 18.4% on Islay (n = 2,380, compared to 16.1% last year) where the mean brood size was 3.04 (n = 120, compared to 2.92 last year). The percentage of first winter birds elsewhere was 15.3% overall and exceeded 10% at a remarkable 20 out of 25 sites from which age ratio data were received, also much better than for several years.*

INTRODUCTION

The 2016/2017 survey represents the thirty-fifth 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 six seasons of total spring census data available to the present based on the full survey of all known regular winter haunts for this population.

Table 1. Spring population census totals for Greenland White-fronted Geese, 2012-2017.

	Spring 2012	Spring 2013	Spring 2014	Spring 2015	Spring 2016	Spring 2017
<i>Wexford</i>	9567	8751	8110	7984	6421	7047
<i>Rest of Ireland</i>	2675	2465	2512	2282	2172	1912
<i>Islay</i>	4309	5449	5093	3995	5183	6141
<i>Rest of Britain</i>	5852	5491	5082	4593	5103	5456
Population total	22403	22156	20797	18854	18879	20556

AUTUMN ARRIVAL PATTERNS

Generally departure from Iceland was rather more normal in 2016, with major movements out through the second half of October. Although Guðmundur Guðmundsson counted 1,310 Greenland White-fronted Geese in all the fields at Hvanneyri on 17 October 2016, numbers had conspicuously fallen to 650 on 19 and to 370 by 20 October. However, there were reports of 100 as late as 11 November at Hvanneyri (Hlynur Óskarsson), where Ragnhildur Helga Jónsdóttir was still counting 76 (including 5 collared individuals) on 15 and 16 November despite a covering of snow there, although the next day all were gone. Hlynur also reported 30 from Forsæti in Floi, southern Iceland during the week of 7-11 November but they too had gone by 12 November.

A single adult Greenland White-fronted Goose appeared on Loch Gruinart on 19 September, but numbers only rose to 11 at the same site by 6 October. Alyn Walsh saw the first 7 geese back at Wexford Slobs on 7 October, rising to 13 by 9th, 260 by 19th, 500 by 21st and 1800 by 30 October. The first four Greenland White-fronted Geese were reported back at Endrick Mouth, Loch Lomond on 13 October. Arthur Thirlwell had only Greylag and Canada Geese at the usual Loch Ken haunts on 16, 17 and 18 October, but Jonathan Clarke had 35 back (including 4 regular wintering collared birds) at Loch Ken on 19 October (where he also saw none the previous day). At Wexford, some 200 arrived on the night/morning of 18/19 October, including 4 geese captured at Hvanneyri in late September. There was a major arrival on Tiree on 19 October, where John Bowler reported hundreds flying over in flocks of up to 70, with 55 settling on the Reef. The movement continued to a lesser extent next day, which coincided with a large arrival of Barnacle Geese at Loch Gruinart on Islay, where 119 Greenland White-fronted Geese were counted on 20 October. Donald Omand had 98 back at Forss, Caithness on 21 October, with numbers increasing to 109 there by 29 October. David Jardine had 21 on Colonsay (including 6 young) on 22 October. There seemed to be something of another wave of arrivals around 28/29 October, with 27 flying over Morar on 28 October and 19 over Broadford, Skye on 29 October. On the morning of 29 October, Marc Hughes reported 4 Greenland White-fronted Geese flying over the Great Orme, North Wales and took a photograph that clearly showed two bearing brand new orange neck collars, one of which had a GPS and accelerometry logging device attached. Although it was not possible to read the codes on the collars to confirm their identity, Alyn Walsh found two newly arrived geese at Wexford Slobs early next morning, Y5U (male) and X3Z (female, which bears the logger), as with most new arrivals, looking very tired spending most of their time asleep. They had been caught and marked by Alyn at Hvanneyri, west Iceland on 27 September, one of 10 such tagged individuals, part of a project being carried out by Mitch Weegman at University of Missouri. Data from the tag showed that X3Z had remained in west Iceland until 20 October before shifting to the southern lowlands of Iceland where she staged until 28 October and the first GPS fix at Wexford was at 08:00 on 30 October when Alyn had seen her. We cannot know for sure that this was the pair that was seen in North Wales, but it seems highly likely! Alyn Walsh experienced a major influx of geese at Wexford starting around 03.00 in the morning of 1 November, which continued through the day, reaching 3000

in the afternoon, numbering 3600 by 12 November. At Loch Ken, 9 were reported in the hide log book at Mains of Duerae on 23 October, Arthur Thirlwell reported 21 at Finnieness, Loch Ken on 24 October, 54 on 1 November, rising to 65 on 4 November (Threave Mains) and 82 on 7 November. David and Judy Stroud found none at Moine Mhor on 28 October, but 11 adults feeding at Linne Mhuirich on Danna on 29 October, where locals reported an arrival of 200 over the night of 28/29 October and on the preceding 3 or 4 nights. David and Judy also found 19 (including 4 young) at Appin on 30 October, although none on nearby Eriska, Ardentiny or Balure the same day. First reports from The Loons, Orkney were 43 on 11 November (Alan Leitch) and from Bute, 14 on 14 November, rising to c.80 next day (Ian Hopkins). Elsewhere, arrivals were delayed, with the first 7 seen on the Dyfi Estuary on 5 November and the first 5 seen at Fidden on Mull on 8 November.

SPRING DEPARTURE PATTERNS

Rachel Stroud and Niall Tierney were based at Hvanneyri from before the geese arrived specifically to chart their spring arrival (see article later). There, they witnessed a family of 3 first winter geese and their parents apparently arrived at Hvanneyri on 12 March, numbers rose to 43 on the evening of 25 March and numbers had risen to 430 by 27th. Jóhann-Óli Hilmarsson reported the arrival of over 200 Greenland White-fronted Geese in Floí on 28 March as well.

Despite this, although Alyn Walsh reported numbers trickling away from Wexford Slobs over the weekend of 25/26 March, there was relatively little sign of such early departures elsewhere. Numbers at The Loons on Orkney had likely fallen from c.70 in mid-March to 22 by 1 April and all had departed by 7 April. Only one bird remained from the diminished flock on the Dyfi by 6 April. At Loch Ken, Arthur Thirlwell notes the main departure occurred on 2 April, but there were still 14 geese persisting, including collared birds V6C and V6H with its mate and four offspring on 5 April, staying in the area until 16 April, with all geese gone the next day! Brian Rabbitts first witnessed 27 at Loch nam Feithean (North Uist) on 4 April, building to 115 next day, with 9 leaving to the north in the morning and 80 to N/NE just after midday (but see below for more details from the Western Isles). Malcolm Ogilvie reported quite a long drawn out departure from Islay, starting in the last week of March, with a major departure on 8 April from Gruinart, but with some geese still present on 18 April. There were still 8 on Mull on 6 April, 55 at Loch nam Feithean (North Uist) on 10 April and 54 on 12 April, when there were also 8 at Carinish, with 18 there next day. There were also 12 geese at Loch nam Feithean on 13 and 4 on 14 April. Brian's second peak period (10-12 April) that coincided with a logger bird caught at Hvanneyri west Iceland in autumn 2016 and two WWT logger birds turning up on the Faeroes as well as a Wexford wintering collared bird turning up on the west coast of Norway. There was a very strong jet stream building and then running west-east, so it seems likely that this was a period when many geese started on spring migration, but hit adverse winds, although from the 13 April, this seemed to slacken and radically shift direction, allowing birds to continue. Catriona White was still seeing 63 on Lismore as late as 15 April, but John Bowler reported most gone from Tiree by the 12th, (although 3 persisted until 21 April). Finally, Sinclair Manson witnessed quite a major but late report of c.140 flying north over Dunnet Head (Caithness) on 18 April.

Brian Rabbitts was kind enough to extract all records on the Western Isles during the spring as follows (surprisingly relatively few). 20 March: two, Cleat, Barra; 26 March: 26 circled Castlebay, Barra before heading N at 9.45; 1 April: one grounded at Port of Ness, Lewis before flying off later towards the Butt; 3 April: three still at Cleat and a flock of 20 on machair between Europie and Lionel, Lewis; 4 April: 14 seen early morning at Askernish, South Uist with 20 flying north at Rubha Ardvule, South Uist and 24 flew in at the Butt of Lewis in the early morning and headed S, while finally at 13.35 hours, 14 came in from E over Knockaird and dropped down on machair by Loch Stiapavat; 6 April: 26 at Aird an Runair; 8 April: 2 at Loch Stiapavat; 10 April: 6 by Loch Fada, Benbecula; 12 April: 6 at S end of Loch Stiapavat and two beside the Butt of Lewis lighthouse road; 13 April: 8 at Fivepenny (am) and 1 by Loch Stiapavat (pm); and 14 April: 13 at Fivepenny.

COUNTS IN BRITAIN

Extremely good coverage of all known regular Greenland White-fronted Goose wintering sites was again achieved in Britain during winter 2016/17. Data from the WeBS database were not available at the time of writing and so are not included here. A full breakdown of the count totals giving the maximum counts per month and the census period totals is presented in Table 2 and the long term trends in autumn and spring counts since 1982/83 in Britain are shown in Figure 1.

Up to 78 Greenland White-fronted Geese reported from The Loons on Orkney represent a major improvement on 62/63 last winter, although wintering numbers in Caithness were slightly down: with peaks of 126 at Westfield (compared to 150 the previous spring) and up to 150 at Loch of Mey/Loch Heilen (compared to similar numbers last season). The Lewis flock numbered 15 geese in late 2016 but 51 in March 2017 (compared to 35 in spring last year), 142 counted at Loch Bee showed an increase over the 100 in 2015/16, but the Kilpheder flock continued to remain at 13-15 individuals up a little on the maximum of 11 in the previous winter.

The two Skye flocks were difficult to tie down, but the Broadford flock numbered at least 19 individuals and the Loch Chalium Chille group 10 at peak, up slightly on last winter. Numbers at Loch Shiel/Kentra Moss were encouragingly up from 48 in spring 2016 to 62 in spring 2017, and thanks to some amazing efforts by Pete Dale and Andrew Dacre, we are beginning to understand vastly more about this formerly highly cryptic group and their use of the raised mires of Claish Moss and Kentra Moss.

Numbers at Appin/Benderloch declined compared to the previous year, while numbers on Lismore, Tiree and Coll were all encouragingly up in spring 2017 compared to 2016, when numbers had fallen from the previous year. Ninety-nine Greenland White-fronted Geese on Colonsay in spring 2017 was a happy increase over the previous spring (36), although geese may have been missed last season, given up to 73 were present on the island earlier that winter. Numbers at Keills/Danna/Ulva peaked at 233, slightly up, but the spring count missed such totals and the tiny Moine Mhor flock (that held 8 birds in spring 2016) fell to a precarious 6 individuals this season.

Total numbers wintering on Kintyre remained at over 2,300 birds. Bute numbers fell back to 130 from 180 the previous winter, although again this may be because they were increasingly resorting to Inchmarnock, a small island off the southwest coast of Bute, which made them difficult count for Ian Hopkin who has worked so hard to understand their movements over so many years at this resort. The Loch Lomond flock exceeded 300 in January 2017, but as often has been the case, only 201 could be found at the time of the spring count. On Islay, numbers exceeded 5,000 through much of the winter, reaching 6,141 for the international spring coordinated count, up on a disappointing 5,183 in spring 2016, probably as a result of the relatively high proportions of first winter birds in the flocks after a good breeding season. Numbers counted at Loch Ken (consistently in the region of 150-170 birds) and at Stranraer (c.210, but 279 counted in November) were both similar to numbers in the preceding season. Dyfi Estuary numbers were again precariously low with a maximum of 22 counted during the spring count, compared to 23 the previous spring, but we are now aware that individuals switch between this site and others in Wales and Ireland (see Carl Mitchell's article later in the report for details). Up to 14 Greenland White-fronted Geese were also regularly seen on Anglesey toward the end of the season.

As usual, because of troubles in locating birds, with bad weather, absent counters and incomplete counts, we have had to substitute counts at seven wintering resorts for counts missing during the international spring census count period. We have substituted estimates taken from counts at those sites on dates closest to the spring count dates and constituted just 3.0% of the British count total (shown shaded in grey in Table 2). Overall, flocks are, as ever showing very different trajectories, but the net result was a reasonable and very encouraging increase (12.8% overall) in the estimated numbers wintering in Britain from 10,286 in spring 2016 to 11,597 in 2017.

Corrigendum: please note that the count of 353 for Endrick Mouth reported for December 2015 in the last report was an error reported to us. The correct figure should have been 133, the international count total for that month.

Table 2. Summary counts of Greenland White-fronted Geese in Britain 2016/17

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			43	78	68	67	52	73	73	22
Papay										
North Ronaldsay										
CAITHNESS										
Westfield	98	109	109	126	92	72	120	120	44	
Loch of Mey		150	150	137	141	147	140	140		
NE SCOTLAND										
Loch of Strathbeg		3					7	1		
WESTERN ISLES										
Barvas/Shawbost, Lewis			18	18				51	51	
Benbecula	10		9	9	12				12	
North Uist										
Kilpheder/Askernish, South Uist			15	15	13	13	8		13	
Loch Bee/Kilaulay, South Uist			142	142	135		84		142	
Bornish, South Uist										
INNER HEBRIDES										
Loch Chalium Chille, Skye				8	10	5			10	
Broadford/Pabay, Skye	19		19						19	
LOCHABER/NORTH ARGYLL										
Muck/Eigg										
Loch Shiel/Claish Moss	36	56	56		40	62	62	62	32	
Lorn:Eriska/Benderloch			12				12	12		
Lorn: Appin		15	31	31	11	27	31	31		
Lismore		140	150		160	152	158	139	63	
Tiree		497	687		667	911		951		
Coll	95	267	210		56	196		261		
Fidden, Mull		15	13		24	15	25	23	8	
SOUTH ARGYLL										
Colonsay/Oronsay	45	89	53	12	12	71	80	99		
Jura: Loch a'Chnuic Bhric										
Jura: Lowlandman's Bay		2	2					0		
Danna/Keills/Ulva			196		184	233	197	168		
Moine Mhor			5	5	6	6	6	6		
Rhunahaorine			615					677		
Machrihanish			1207					1446		
Clachan			152					155		
Gigha			102					102		
Glenbarr			73					0		
Isle of Bute		14	100	100	100			130		
Endrick Mouth, Loch Lomond	200	245	221	221	300	296	201	201		
ISLAY	1		4777	5585	5585	4694		6141	6141	
DUMFRIES & GALLOWAY										
Loch Ken	21	151	151		166	174	167	167	14	
Stranraer	54	279	130	130	205	209	210	210		
WALES										
Dyfi Estuary			18	17	17	19	14	22	22	1
Valley and Llyn Llywenan, Anglesey		4	8	8						
Malltraeth, Anglesey	4									
Llanddaniel Fab and Pont Marquis, Anglesey							14	14		
ENGLAND										
Grindon Lough										
Longhirst, Northumberland			1	1						
Durrige Pools/Easington, Northumberland		4								
OTHER IRREGULAR SITES										
England combined				1						
Scotland combined										
TOTALS	585	7050	10326	6585	6979	2746	7719	11597	184	
Rest of GB less Islay	585	2273	4741	1000	2285	2746	1578	5456	184	
Rest of Scotland less Islay			4715					5420		
England			1					0		
Wales			25					36		

Table 3. Summary counts of Greenland White-fronted Geese at irregular sites in Britain 2016/17

	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
OTHER IRREGULAR SITES									
Loch of Skene, Grampian		2							
Traigh, Morar, Mallaig	27								
Altnaharra, Sutherland			1	1					
Kinnordy Loch, Angus, Durness, Sutherland									
Pilling Marsh, Fylde, Lancashire						1			
Cley/Titchwell/Rollesbury, Norfolk		1							
Laguna de Gallocante, Aragon, Spain					3	3			
TOTALS									
England		1	0	0	0	1	0	0	
Scotland	27	2	1	1	0	0	0	0	

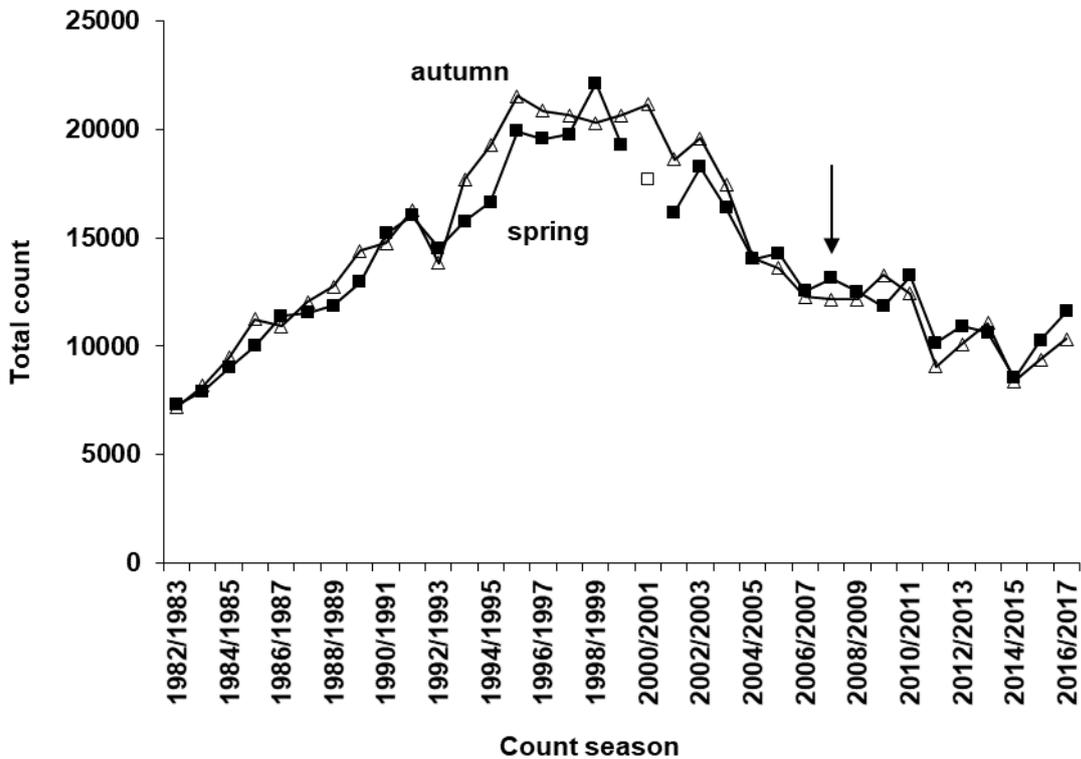


Figure 1. Counts of Greenland White-fronted Geese in Britain, 1982/1983-2016/2017, showing autumn (open triangles) and spring (filled squares) census results for each season. The value for spring 2001 (unfilled square) was missing due to the outbreak of Foot and Mouth Disease that year and was therefore estimated from previous counts. The arrow indicates start of hunting ban in Iceland in autumn 2006.

COUNTS FROM IRELAND

Excellent coverage was achieved in Ireland (see Table 4 below for full details). Regular count coverage in 2016/17 confirmed the absence of geese at Caledon again and none were located at Lough Oughter suggesting that this site may also now have become deserted.

At 15 other sites, missing counts or failure to find geese when they were known to be present during the spring international count period meant that we have substituted counts from dates outside the spring international count period. These included Loughs Foyle/Swilly (720 birds), Dunfanaghy (44), Pettigo Plateau (82), Lough MacNea (84), Stabannon (15 see earlier in March) two Bog of Erris sites (total 60), Connemara (7 substituted from last year), Lower Lough Corrib (where just 2 were seen in January and February) and Rahasane (where the January count of 88 was used). Elsewhere January or February counts were also substituted for Tullagher (18), North County Clare (42), Suck River (111), Little Brosna (170), Midland Lakes (193, although numbers peaked at 260) and River Nore (6). Taken together, these estimates contribute 18.3% of the total Irish numbers, which is considerably higher than in recent years. Generally, the down country flocks in Ireland paint a rather bleak picture as the very small flocks continue towards extinction. Count problems at Lough Foyle and Swilly meant it was impossible to obtain a reliable total in the spring, but numbers never exceeded 600-720 compared to the 1000+ last winter. Numbers at many sites more or less held their own, but there were declines at Pettigo (32% from 120 to 82), Stabannon (62%, 39 to 15), Rostaff and Killower (31% 84 to 58). More encouragingly there were increases at Rahasane Turlough (from 68 to 88) and on the Little Brosna (137 to 170), but the inexorable decline in the flocks which constitute the "rest of Ireland" category continues.

The spring 2017 Wexford count did much to rescue the poor performance elsewhere in Ireland. The spring count of 7,047 was a little below the February count, potentially as a result of dispersal away from the site to some of the other down country flocks at that time. This total was up 9.8% on the 6,421 counted last spring.



Greenland White-fronted Geese at Wexford Slobs (photo Ian Francis)

Table 4. Summary counts of Greenland White-fronted Geese in Ireland 2016/17
shaded values are estimates for sites where no counts were received for the precise period of the international census periods

	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
DONEGAL									
1.Loughs Foyle & Swilly		694	694	482	694	720	616	720	5
2.Dunfanaghy			44		42	44		44	
3.Sheskinmore lough		14	26	26	27	26	29	29	
4.Pettigo	0	0	82	82	82			82	
4a. Durmesh					46	44	46		
NORTH CENTRAL									
6.Lough Macnean		23	83	83	84			84	
7.Lough Oughter		0	0	0	0			0	
8. Caledon									
33.Stabannon			10		10		15	15	5
MAYO									
9.Lough Conn			30				31	31	
10.Bog of Erris	1		60		14	60		60	
a. Mullet	1	0	0	0	0	0	0	0	0
b. Carrowmore				0	14	23			
c. Owenduff				0	0	37			
MAYO/GALWAY UPLANDS									
11.Erriif & Derrycraff			36	26	52	52	52	52	
12.Connemara			7					7	
GALWAY LOWLANDS									
13.Rostaff & Killower	22		87	87			58	58	
14.Lower Lough Corrib			2		2	2		2	
15.Rahasane turlough		76	86	86	88	70		88	
CLARE/LIMERICK									
16.Tullagher	5+		18	18	18			18	
17.North County Clare			42		42			42	
SHANNON HEADWATERS									
20.Lough Gara	17	69	114	114			100	100	
MIDDLE & LOWER SHANNON									
25.River Suck	0	165	94	94	86	111		111	
26.Little Brosna			170		170			170	
MIDLANDS									
23.Midland lakes		199	212	212	260	193	157	193	
27.River Nore			6		6			6	
SOUTH WEST									
30.Killarney valley									
SOUTH EAST									
Wexford	1800	3662	6977	6977	6022	7214	7047	7047	
COUNT TOTALS	1841	4902	8880	8287	7759	8596	8151	8959	10
Ireland without Wexford			1903					1912	

Adding 7,047 at Wexford to the 1,912 counted from the rest of Ireland, and the British totals gave a global total of 20,559 Greenland White-fronted Geese in spring 2017, perhaps slightly encouragingly up on the 18,879 counted in spring 2016 (Figure 2).

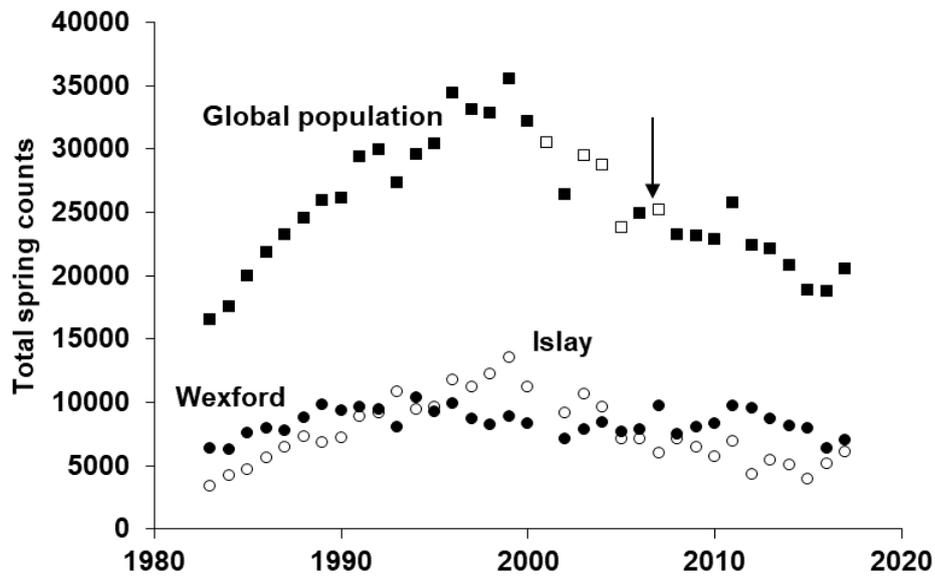


Figure 2. Spring counts of Greenland White-fronted Geese from Wexford Slobs, Islay and the global population count, 1983-2017. Values for the total population size are missing in some years when complete coverage could not be achieved (shown by open square symbols). Values for spring 2001 were also missing due to 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.



Greenland White-fronted Geese in flight on Danna (photo Ian Francis)

AGE RATIOS IN BRITAIN

We continue to put considerable emphasis on the gathering of age ratio data, as it is very clear that the reduced production of young (in terms of the percentage of goslings in the flocks) has in recent years contributed to the overall population decline. However, it is equally clear that the proportions of young differ widely between wintering flocks, even though we have little understand of why this may be. For this reason, we are extremely grateful as ever to all of you that were kind, patient and diligent enough to sample and supply age ratios and brood sizes from your flocks. We are delighted to say that you achieved excellent coverage again in winter 2016/17 as shown below in Table 5, so a huge thank you to all concerned!

Table 5. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Britain 2016/2017.

SITE	% YOUNG	AGED SAMPLE	MEAN BROOD SIZE	FAMILIES SAMPLED
The Loons, Orkney	23.1	78	2.25	4
Loch of Mey, Caithness	13.3	120	2.00	8
Westfield, Caithness	7.9	38	1.50	2
Barvas, Lewis	23.5	34		
West Gerinish, Loch Bee	2.1	142		
Kilpheder, South Uist	30.8	13		
Tiree	16.4	549	2.20	41
Coll	18.1	138		
Loch Shiel	12.5	56		
Lorn, Appin	16.1	31	1.67	3
Lismore	4.0	100		
Mull, Fidden	20.8	24		
Moine Mhor	0	6		
Colonsay	7.5	80		
Glenbar	18.4	49		
Rhunahaorine, Kintyre ¹	16.2	536	3.26	19
Machrihanish, Kintyre ¹	14.4	1402	2.77	35
Clachan, Kintyre ¹	16.2	154	2.38	8
Islay ¹	18.4	2380	3.04	120
Bute	34.8	23	4.00	1
Loch Ken	21.2	151	2.91	11
Stranraer	21.3	122		
Endrick Mouth	17.1	164		
Dyfi Estuary	14.3	14	2.00	1
Druridge Bay N'humberland	75.0	4	3.00	1
Britain, excl. Islay	15.29%	4028	2.55	134
OVERALL	16.45%	6408	2.78	254

¹Details from Jura, Islay and Kintyre courtesy of Dr Malcolm Ogilvie

It was very gratifying to see so many flocks (20 out of 25 from which we received age ratios) where the percentage young after the 2016 breeding season exceeded 10% (see Table 5). Overall there were 16.5% young amongst 6,408 geese aged in the sample (Table 5), up on that of 15.5% after summer 2015 and 12.9% in the previous season, restoring the production of young to levels more able to replace annual losses. Breeding success was again exceptional amongst some of the smaller flocks, with 23.1% on Orkney, 23.5% on Lewis, 30.8% (in a small sample) at Kilpheder, South Uist, 20.8% on Mull, 34.8% on Bute and just over 21% at both Loch Ken and Stranraer. Islay also performed better than in recent years with 18.4% (compared to 16.1% last season). Away from Islay, the sample of 4,028 birds assigned to age groups showed 15.3% young (Figure 3 and Table 5). Mean brood size was 2.78 (see Table 5) based on 254 families sampled from many sites, comprising a mean of 3.04 on Islay (n = 120) and 2.55 elsewhere (compared to last year's 2.96 and 3.10 respectively).

The relatively high rates of production of young recorded on Islay after summer 2016 were above the average since 1962 and those from elsewhere in Britain were also above the values for all but one of the last 12 years (Figure 3).

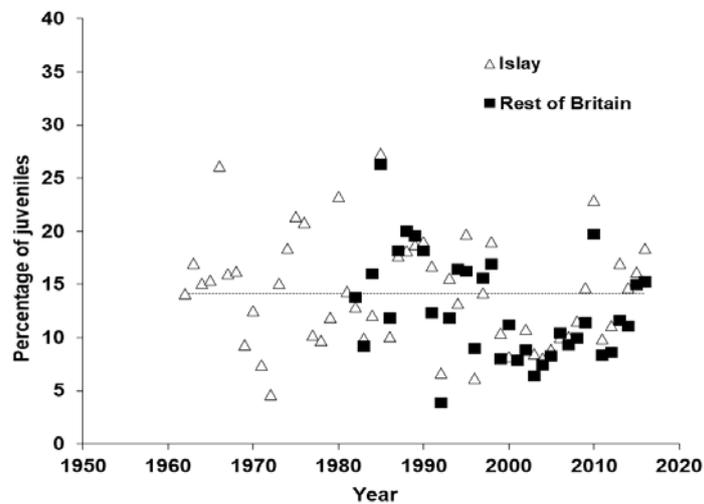


Figure 3. Age ratios sampled amongst Greenland White-fronted Geese at Islay 1962-2016 and compiled from other sites in Scotland and Wales, 1983-2016. The dotted line indicates the average percentage young amongst samples from Islay for 1962-2015.



Greenland White-fronted Geese in flight on Danna (photo Ian Francis)

AGE RATIOS FROM IRELAND

Breeding success at Irish sites where age ratios were sampled showed highly variable production of young, with Lough Foyle/Swilly (38.5%), Sheskinmore (11.5%, close to 11.9% last year) and Lough MacNean (12.8%) all exceeding 10% young (see Table 6). In areas away from Wexford, there was an average of 14.9% young (happily up on 8.5% after the summer of 2015) based on a sample size of 442 birds aged. At Wexford, the proportion of young also happily increased after the 2016 season, with 12.2% young (compared with 6.8% in the previous season and just 4.9% in the year before that), based on 3,439 geese assigned to age classes. This was only the second year since 1994 that breeding success at Wexford has managed to climb above the average for 1970-2015 (Figure 4) and although based on relative few sites, the fact that the proportion of young determined at sites away from Wexford was so high is also highly encouraging!

Table 6. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Ireland 2016/2017.

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Loughs Foyle/Swilly	38.5	104		
Sheskinmore	11.5	26	3.00	1
Pettigo	9.1	44	1.33	3
Lough Macnean	12.8	94		
Lough Conn	6.5	31		
Errif and Derrycraff	4.2	48	2.00	1
Rostaff and Killower	3.5	87	1.50	2
Lower Lough Corrib	0	2		
Tullagher	0	6		
Wexford	12.2	3439	3.13	105
Ireland, excl. Wexford	14.93%	442	1.71	7
OVERALL	12.47%	3881	3.04	112

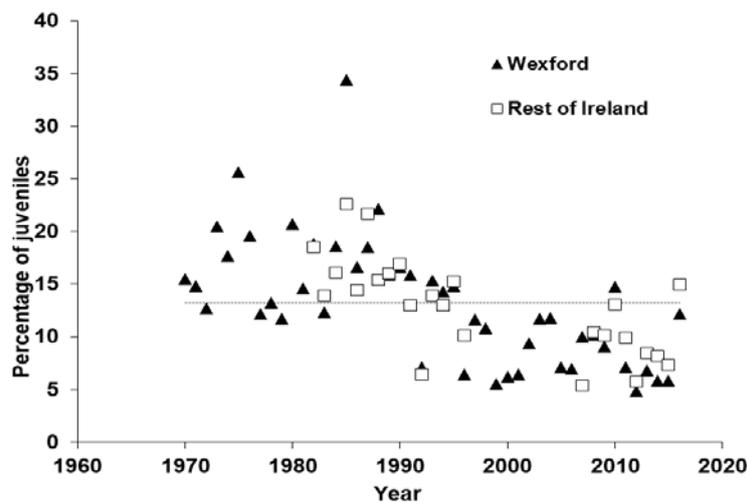


Figure 4. Age ratios sampled amongst Greenland White-fronted Geese at Wexford 1970-2016 and compiled from other sites elsewhere in Ireland for years in which there exist sufficient data. The dotted line indicates the average percentage young amongst samples from Wexford for 1970-2015.

HVANNEYRI THROUGHOUT THE WHITE-FRONT YEAR!

We came to live in Hvanneyri, in western Iceland, in February 2017 and have been working with the Agricultural University of Iceland to monitor the birdlife in the Ramsar site here, in the centre of which the university and the village are situated. We have been here throughout the spring and autumn staging periods, and it has been fantastic. While working with the geese was not our bread-and-butter, we managed to squeeze in a wee bit of goose watching from time to time. When collared geese were readable from the office window, it was not always easy to maintain a good work-geese balance, but the odd sneaky office ring-reading session always seemed like time well spent.

Hvanneyri is a real hotspot for White-fronts in Iceland, representing one of the largest feeding area aggregations known for the population and *the* place to get close to them to read collars. The drained, reseeded fields really draw the birds in, and to the geese such fields must seem like green jewels in an otherwise brown landscape.



Greenland White-fronted Geese at Hvanneyri, Western Iceland (photo Rachel Stroud)

In spring, we had our first five birds on the partly snow-covered, but greening-up, hay meadows on 12th March. The average number of geese on the farm was just under 700 during the month of April, peaking at 1,054 on the 17th. The departure began on the 1st May and the final ten stragglers left the farm on the 10th.

We read collars on 68 individuals on the farm in the spring, and it was exciting watching collared pairs and speculating then if they would have what it takes to start a family in Greenland. Y1C and Y2C, for some reason, became favourites of ours, so it was great to connect with them in September when they returned with five goslings in tow. The family have spent most of their autumn on another farm, with barley stubble, a few kilometres up the valley. Another pair, Y5D and Y8D, were ringed at Hvanneyri in spring 2012 and have been regulars here and in winter at Wexford in most years since. In the spring, we rarely saw one without the other, so we were surprised not to find Y5D on the farm in the autumn. We do not yet know whether Y5D has met its maker, or is just a bit fickle in its ability to stick to a migratory itinerary. The re-sightings database shows it had a brief stopover on South Uist in the Western Isles of Scotland in spring 2013 on the way to Hvanneyri, and has also been seen in the southern lowlands of Iceland too, which is where the Scottish birds mostly stage. Of course, we do not

know if these deviations were forced upon the bird by poor weather or itchy feet, but it will be interesting to see if the pair are reunited in Wexford in the coming winter.

The first autumn arrivals dropped in on 6th September 2017, but it was not until two weeks later that a weather window allowed the bulk of the birds to arrive, when numbers went from 700 to 1,500 overnight. Since that influx, we have counted an average of 1,400 birds on the farm each day, although the daily variation can be quite significant. One reason is that, like the Whooper Swans and Greylag Geese, the White-fronts capitalise on the abundant supply of crowberries *Empetrum nigrum* on the nearby uncultivated hillsides, so there are often large numbers of birds away from the farm. In addition, we know from telemetry tagged and collar resightings that birds stopping at Hvanneyri also move elsewhere, which may also contribute to day to day changes in local numbers on the fields. We will continue daily counts and reading collars until all of the birds have left the farm.

Now, we are sure that most of you will be immediately wondering if the increase in numbers between spring and autumn is driven by a high proportion of juveniles in the flocks. Unfortunately, this is not the case, observations in earlier years show spring numbers are always less than those the following autumn. Our assessments of the proportion of juveniles on the farm have been less than 5%, but we have noticed higher proportions of juveniles in smaller flocks in neighbouring sites. So, it will be very interesting to see the age ratios of the various flocks on their wintering grounds in Ireland, where most of these birds are destined.

Hvanneyri is not just a special place for Greenland White-fronted Geese. The beat of the summer continued when the White-fronts' discordant calls dropped out of the fjord's backing track in May. The cacophonous breeding season was kicking off, and we were distracted by the sounds of tireless waders, eerie divers, raucous gulls and bugling Whooper Swans. Now, as the temperature falls and these birds leave again in the coming days, what will we be left with? Cold winds, short days and poor light in which to distinguish the Glaucous from the Iceland Gulls? Yes, but we are also looking forward to having Snow Buntings back in the garden again, and the local Goosanders are beautiful at the moment, with wonderful, almost luminous, mango-yellow breasts, as though reflecting the glow of a winter sunset. For the soundscape, we will have to make do with kronking Ravens and creepy Ptarmigans.We really are starting to grasp why the first sighting of a Golden Plover of the spring makes national news!

Niall Tierney and Rachel Stroud, Landbúnaðarháskóli Íslands, Hvanneyri, 311 Borgarnesi, Iceland.



Greenland White-fronted Geese at Hvanneyri, Western Iceland (photo Rachel Stroud)

THE WELSH CONNECTION

The Greenland White-fronted Goose population decline has seen some of the smaller flocks decrease in number most rapidly. In Wales, two wintering flocks have gone extinct and the last two flocks number fewer than 20 birds each; one on the Dyfi Estuary, Ceredigion and one in Anglesey. The Dyfi flock has declined from 167 birds as recently as 1999. Funding from the Welsh Government has enabled detailed study of both flocks since 2015/16, carried out through a partnership consisting of the Welsh Government, WWT, RSPB Cymru, Mick Green, NRW, BASC and the Dyfi, Mawddach & Dysynni Wildfowlers' Association.

In December 2016, 14 birds were caught on the Dyfi Estuary and two adult females were fitted with GPS collars. After one week, one of the tagged geese, together with its partner, moved to Wexford, Ireland where it remained until early March before returning back to the Dyfi. This connectivity could help explain why this flock has decreased so rapidly – are some birds simply shifting wintering site? The other tagged White-front stayed for the whole winter on the Dyfi and mapped out the feeding and roosting distribution of the flock – incredibly useful information for potential land management changes and protection measures.

Both tagged geese (and we suspect the entire Dyfi flock) flew up the west coast of Britain on 2 April 2017 and arrived in Iceland on 3 April. Here, the two tagged geese separated and fed in different areas about 10-20km apart. The geese then departed to west Greenland, with probable departure dates of 1-2 May (Figure 5).



Figure 5. Spring 2017 migration of two Greenland White-fronted Geese marked with GPS tags in mid Wales in December 2016.

One of the Dyfi birds returned to Iceland on 9 September and provided back-filled location data from the summer breeding quarters. The detailed location data from June suggested that a breeding attempt had been unsuccessful. The other tagged bird arrived back in southern Iceland on 21 September. The summer locations of both tagged birds was about 50km apart, 50-100km north of Kangerlussaq. Location data from Greenland suggested that this second bird had incubated eggs and

a sighting from Iceland in late September, made by Tony Fox and Alyn Walsh, confirmed that this individual and its mate had four goslings. The two tagged birds again fed and roosted about 10-20km apart in Iceland during the autumn (Figure 6). At the time of writing (22 October 2017), the two birds are still in southern Iceland. It will be interesting to see where the two birds winter.

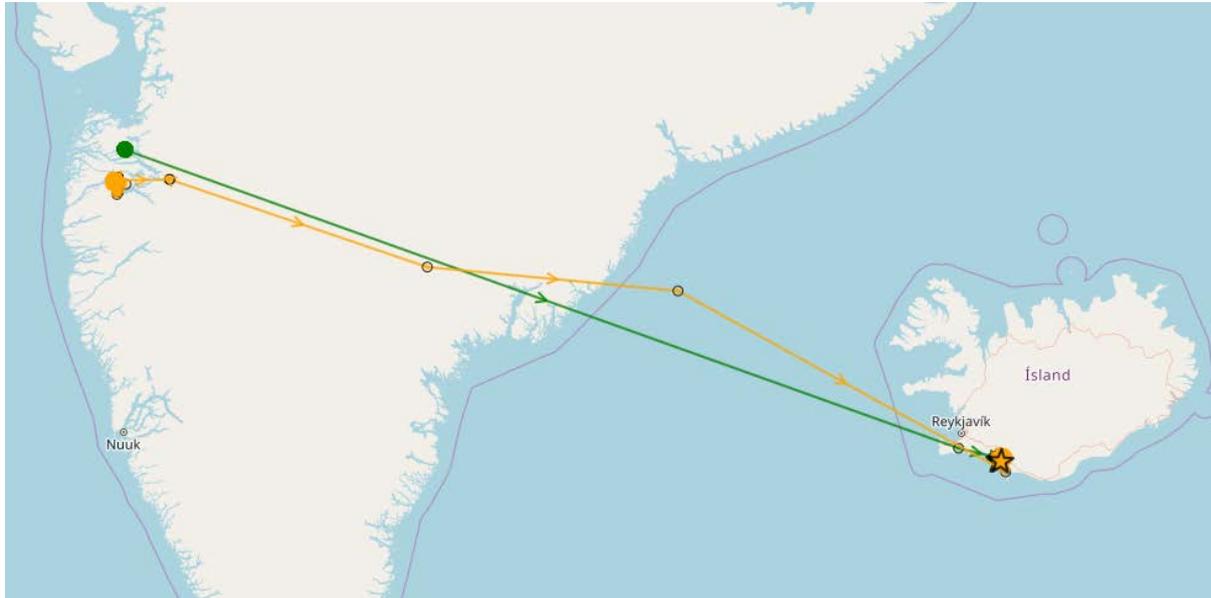


Figure 6. Autumn 2017 migration of two Greenland White-fronted Geese marked with GPS tags in mid Wales in December 2016.

Further information and movements of the geese can be found at:
<http://telemetry.wikispaces.com/Greenfront+Wales>

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Landing Greenland White-fronted Geese at Ardnaclach, Argyll (photo Ian Francis)

ACKNOWLEDGEMENTS

Our enormous thanks as ever to everyone that has contributed to the counts, and data collection on age ratios, brood sizes, collars and ring readings. We realise this can be a miserable and very time consuming task and we are extremely grateful for you taking the trouble to report these observations every year. We also love to receive the information from you, so do please keep it up, even if just to keep us sad mortals happy!

Without your sterling efforts we have no idea about the fortunes of these fascinating geese so many thanks again to all who have contributed in the last year especially. For Britain during 2016/17, these include: Ndurie Abah, David Andrews, Rebecca Austin, Paula Baker, Ian Bainbridge, Dave and Pat Batty, Yvonna Boles, John Bowler, Jack Brown, Ed Burrell, George Christie, Sue Clare, Simon Cohen, Paul Collin, Robert Coleman, Andrew Dacre, Pete Dale, Helen Douglas, Steve Duffield, John Dye, Derek Foreshaw, Alan and Anthony Fraser, Ian Fulton, Stuart Gibson, Larry Griffin, Robin Harvey, Kath Hamper, Brian Henderson, David Holden, Ian Hopkins, James How, Iain Jamieson, David Jardine, Tracey Johnston, Ben Jones, Russell Jones, John Kemp, Amy Kirkbright, Andy Knight, Morven Laurie, Mary Legg, Alan Leitch, Alison Leonard, Steve Littlewood, Stephen Longster, Sinclair Manson, Paul Massey, Rae McKenzie, Kevin McCulloch, Bob McMillan, Dougie Menzies, Carl Mitchell, Brian Neath, Bill Neill, Alison and Donald Omand, Malcolm and Carol Ogilvie, Mike and Val Peacock, Nicky Penford, Stan Phillips, Brian Rabbitts, Bryan Rains, Alan Reid, Robin Reid, Brian Ribbands, Nicola Ritchie, Andy Robinson, Chris Rollie, Alison Searl, Geoff Small, Julian Smith, Andrew Stevenson, David and Judy Stroud, Paul Tarling, Arthur Thirlwell, Morgan Vaughan, Jasmine Ward, Lucy Ward, Catriona White and Emily Wilkins. For Ireland, these include: Dominic Berridge, Noel Bugler, Brian Burke, A. Burns, David Cabot, Helen Carty, Cameron Clotworthy, Dick Coombes, Fionnbar Cross, Jack Cullen, Eamon Doran, Tom Fiske, Triona Finnen, Ciara Flynn, Katherine Freeman, Emma Glanville, Michael Hackett, John Higgins, James Kilroy, John Kinsella, Brian Laheen, George Lett, Annette Lynch, Peter McCarron, Lee McDaid, David McDonagh, Graham McElwaine, Eoin McGreal, Dermot McLaughlin, Emer Magee, Gerry Murphy, Tony Murray, David Norriss, Irene O'Brien, Thomas O'Loughlin, Ciara O'Mahony, Brian Porter, Brad Robson, Lorcan Scott, Ralph Sheppard, Andrew Speer, Raymond Stephens, Dave Suddaby, Peter Taylor, Rebecca Teesdale, Matthew Tickner, David Tierney, Nicky Walsh, Ross Watson, Mitch Weegman, and John Wilson.

We do try and thank everybody who so kindly contribute every year and are very sorry if we have neglected to acknowledge you by name above, this is creeping old age so please do not take this personally! We are also deeply grateful to those folk who maintain web sites and blogs (too many to thank individually) that provided extra count data and interesting sightings in 2016/17. We could not do anything without your continued kind help and support, so thank you very much for all of your efforts! 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 John Wilson who initiated the entire process of studying White-fronted Geese in Ireland and continues to be the source of great support. 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: 16-20 December 2017 and 17-21 March 2018

Preferred monthly counts: 18-22 November 2017, 13-17 January 2018 and 17-21 February 2018.