REPORT OF THE 2015/2016 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 2016 comprised 18879 individuals, almost identical to 18854 in the previous year. Numbers at Wexford declined by 20% and in the rest of Ireland by 5%, but numbers increased by 30% on Islay and by 11% elsewhere in Britain. Reproductive success was relatively high in Britain (15.5% young) but very low in Ireland (6.0%).

This report presents the results of the surveys of the Greenland White-fronted Goose on the wintering grounds in winter 2015/16, 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 internationally coordinated count in spring 2016 found a combined global total of 18879 Greenland White-fronted Geese, up just 0.13% (25 birds) on the last world population estimate of 18854 in spring 2015.

Counts carried out at all known Greenland White-fronted Goose wintering haunts in Britain found totals of 9390 birds in autumn 2015 and 10286 in spring 2016, compared with 8374 and 8588 respectively reported in the previous season at the same times of year. The 2015/2016 totals comprised 14 and 6 birds reported in England, 21 and 36 in Wales, 4644 and 5183 on Islay (compared to 4772 and 3995 respectively last season) and 4711 and 5061 in the rest of Scotland in autumn and spring respectively (compared with 3573 and 4536 respectively last season). Coverage in Britain was more or less complete; all resorts except the Loch Bee on South Uist and the Small Isles were counted at least once in the season. Spring counts were missing from the specified count period from 11 resorts, but all were substituted with counts undertaken close to the defined international count dates, contributing 5.3% of the British total.

Count coverage was reasonably good in Ireland in spring 2016 which provided 6421 geese at Wexford (down by 20% compared to 7984 in spring 2015) and 2172 (down by 5% on 2282 in spring 2015) from the rest of Ireland. Unfortunately, rather more missing spring counts needed to be substituted than usual, contributing totals for 10 Irish regular wintering resorts, amounting to 21.0% of the Irish total, due partly to the March count at Loughs Foyle and Swilly failing to find all the birds at the time of the count.

Breeding success amongst geese wintering at British resorts was again reasonable compared to many of the last 15 years, especially on Islay. Average percentage young back on the winter quarters after the 2015 breeding season was 15.5% (n = 5556 aged, compared to 12.9% last season), mean brood size was 2.96 (n = 253 broods, compared to 2.73 last season). This included 16.1% on Islay, (slightly above the average of 14.0% for 1962-2014 inclusive) where the mean brood size was 2.92 (n = 134 compared to 3.11 last year). The percentage of first winter birds exceeded 10% at 20 out of 25 sites from which age ratio data were received, better than for several years.

Compared to Britain, the percentage young amongst aged flocks in Ireland during 2015/16 was considerably lower, 6.0% (based on 4,010 aged individuals) but similar to 6.1% last season. Mean brood size amongst the Irish flocks was 2.61 (n = 77) almost identical to 2.59 last season. There were 5.8% young amongst 3,599 aged at Wexford (amongst the lowest on record, but the same as last year), where the mean brood size was 2.57 (similar to 2.69 last season) based on 68 broods. Elsewhere in Ireland, reproductive success was also very low at 7.3% (n = 411) with 4 flocks having no young among a total of 134 birds sampled for age classes, but brood size was slightly higher (available only from the Midland Lakes) at 2.89 (n = 9).

INTRODUCTION

The 2015/16 survey represents the thirty-fourth 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 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, 2011-2016.

	Spring 2011	Spring 2012	Spring 2013	Spring 2014	Spring 2015	Spring 2016
Wexford	9733	9567	8751	8110	7984	6421
Rest of Ireland	2777	2675	2465	2512	2282	2172
Islay	6911	4309	5449	5093	3995	5183
Rest of Britain	6344	5852	5491	5082	4593	5103
Population total	**25765**	**22403**	**22156**	**20797**	**18854**	**18879**

AUTUMN ARRIVAL PATTERNS

Once more, substantial numbers of geese stayed relatively late in Iceland during autumn 2015. There were records of 250-300 geese, almost certainly White-fronted Geese, flying east of the Hvitá river on 13 November in the southern lowlands at Laugarás, turning south around Langholtsfjall before being lost from sight. Geese were still present in Skeið on 16 November (falki.ni.is).

The first records of Greenland White-fronted Geese at Wexford were three (a pair with one young) back on 7 October, with numbers building to 19 on 10 October, 53 on 12th and 94 on 15 October. Eighteen Greenland White-fronted Geese were reported back at Lenaig, Kintyre on 12 October, when one flew south over Fair Isle and 9 appeared on the Oa, Islay the next day. Brian Henderson reported 7 birds (2 adults with 5 young) back at West Freugh, Stranraer on 14 October; John Bowler had 2 back on Tiree on 17 October, while Arthur Thirlwell reported 6 Greenland White-fronted Geese back at Loch Ken on 18 October, rising to 14 on 20th, which included collared bird V9C with young. Paula Baker reported 12 at Endrick Mouth on 19 October, when Catriona White also had 17 on Lismore. There were 9 geese back at Ulva Lagoons on 21 October, 4 were reported on Fair Isle on 22 October while Russ Jones had 2 back on the Dyfi Estuary in mid-Wales on 25 October and Morgan Vaughan had 7 on Colonsay on 27 October. Temperatures in Iceland remained at or just around freezing point through much of October, so there were still only 200 geese at Wexford Slobs on 24 October, rising to 2,100 by 30 October. With a prolonged period of unfavourable winds, these numbers held steady well into November, with only 2,500 present there by 5 November. The first sizeable numbers at Stranraer did not appear until 25 October, when Brian Henderson had 98 geese (including 34 young in 11 families!), although numbers had fallen by the next day. It was obvious that the main arrival at this site occurred on 22 November, when 202 were counted (close number through much of the winter at 206-208 birds, maximum 231 on 22 March). Two flew southeast over North Ford, North Uist 29 October and 16 were seen flying south during a four hour sea watch off Ardvule, South Uist the same day. At Voy, on Orkney, 36 Greenland White-fronted Geese flew south on 1 November and indications of heavier migration through the Western Isles come from two flocks of White-fronted Geese (50+ and 21) which flew south at Arnish Moor, Lewis with a handful of Greylag Geese late on the afternoon of 3 November, followed by 119 heading south in four flocks at Bornish, 45 south at South Glensdale and 47 south at Snishival (all on South Uist) on 4 November. Twenty-eight geese were back at Arnol, Lewis on 9 November and 11 at Kilpheder, South Uist on 17 November. A small skein of Greenland White-fronted Geese landed in a field next to the Tobermory campsite at 22.30 hrs on 12 November and 2 were reported on the move southwards at Croig (both in NW Mull) on 14 November. Up to 52 were reported on North Ronaldsay on 13/14 November the very day before numbers at the traditional wintering site at The Loons built to 53 (ten days before the peak count of 63 there). Three were also reported on Papay (also Orkney) on 15 November.

Autumn staging Greenland White-fronted Geese feeding on hayfields at Hvanneyri, Borgarfjörður, west Iceland September 2016, including newly collared individuals captured on site (photo Alyn Walsh)

SPRING DEPARTURE PATTERNS

Birds seemed comparatively late departing the winter quarters in spring 2016, with no substantial departures before early April. Arthur Thirlwell was still reporting maximum counts of 94 at Loch Ken on 23 March and 96 on 29 March, with the possibilities of more elsewhere, before the very last report of 47 on 9 April. At Stranraer, after the high counts of 231 (22 March), 222 (23 March) and 224 (29 March), numbers started to fall away on 30 March, with more departures on 5 April when 154 were counted, falling to 54 on 8 April, 33 on 9 April and none on 10 April, although Brian Henderson reported 2 persisting at Wigtown Bay Local Nature Reserve until 19 April. Fifty-five geese flew north at Aird an Runair, North Uist around midday on 30 March after 17 had flown north over Ardvule, South Uist in the morning, with 26 at the Butt of Lewis on 1 April, when there were also 13 Greenland Whitefronts with a single Pink-footed Goose at Malaclate, North Uist. There were still 100 birds at Myroe, Lough Swilly on 1 April (Gareth Platt via Graham McElwaine). More substantial passage over North Uist occurred on 7 April (7 north over Balmore) and 8 April, when 8 flew north over Carinish, North Uist, with 170 north over Loch Paible, North Uist next day. John Bowler reported the main departure from Tiree on 10-11 April. There were still 12 birds on Lismore reported by Catriona White on 10 April when there were 15 at Taynish (Keills/Danna), with later reports including 4 Greenland White-fronted Geese at Balgarva, South Uist on 14 April, 16 at Loch a'Phuill, Tiree on 22 April and 2 on the Dyfi until at least 28 April (Russ Jones). An incredibly late Greenland White-fronted Goose was reported from the Walmsley Sanctuary on the Camel Estuary in Cornwall on 8 May.

The first reported in southern Iceland were 5 seen at Fljótshóla í Flói by Hlynur Óskarsson on 25 March 2016. Tómas Grétar Gunnarsson counted less than 50 newly arrived and mostly sleeping in Landeyjar on the morning of 27 March, including the family X1P (female) and X2P (male) with their offspring from 2012 X3N, X4L, X6L and X7L, marked at Wexford in March 2013. By 31 March there were 400+ Greenland White-ronted Geese at Fljótshólar, in Flói (Alex Máni, via falki.ni.is)

COUNTS IN BRITAIN

As usual, for this report, we attempted to obtain counts at all the regularly known wintering resorts that support the race in the winter of 2015/16, listed in Table 2. As always we asked observers to count on two nominated weekends (with some additional attached weekdays) for the main international autumn (12-16 December 2015) and spring (12-16 March 2016) counts, with particular emphasis on the latter as being the annual assessment of the total population size prior to return to the breeding areas. Although we have not incorporated WeBS data into the tables, we have derived observations from the internet, many of which originate from sites not regularly occupied by Greenland White-fronted Geese (summarised in Table 3 and incorporated as totals into Table 2). In addition to the international counts Tables 2 and 3 also present monthly totals for each site and the longer term trends in autumn and spring counts since 1982/83 in Britain are shown in Figure 1.

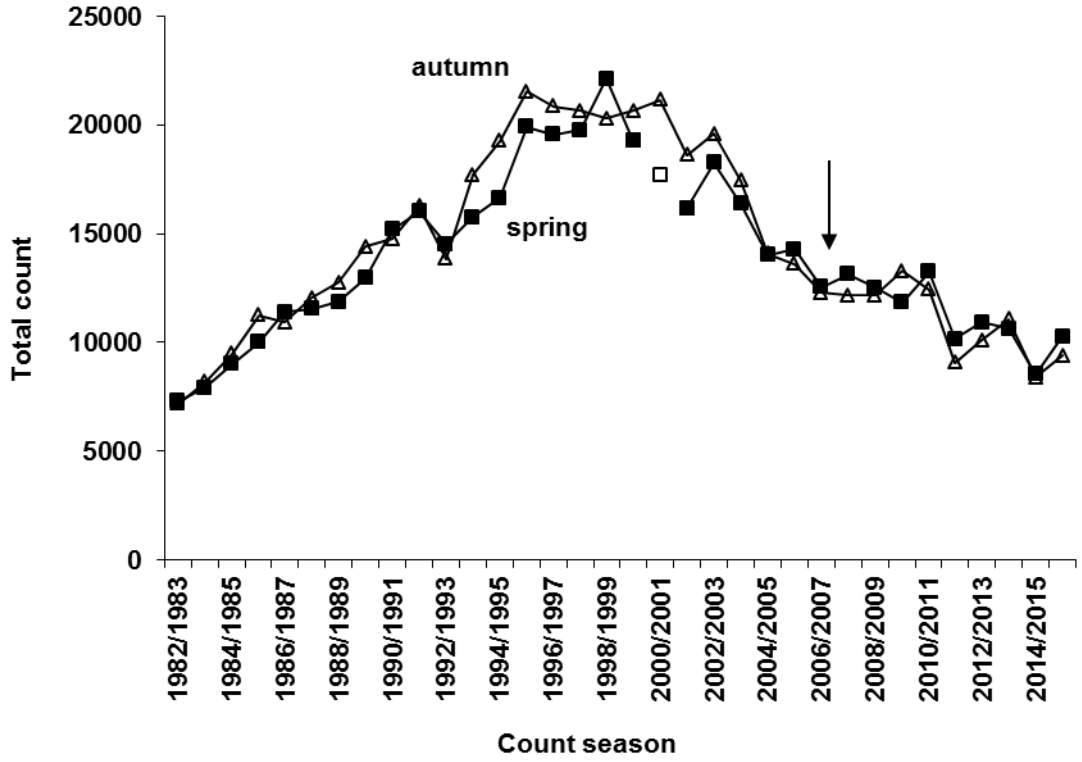

Figure 1. Counts of Greenland White-fronted Geese in Britain, 1982/83-2015/16, showing autumn (open triangles) and spring (filled squares) census results for each season. The value for spring 2001 (unfilled square) was missing on account of the outbreak of Foot and Mouth Disease that year and was therefore estimated from previous counts. Vertical arrow indicates start of hunting ban in Iceland in autumn 2006.

Total numbers counted in Britain in 2015/16 showed a slight recovery in numbers, with improvements in the autumn and spring census totals over 2014/15 (Table 2). Nevertheless, increases at some resorts were balanced by decreases elsewhere. Numbers at The Loons, Orkney were little down on last winter, composing a regular 62-63 individuals, and 52 made a brief stay on North Ronaldsay in November on passage. Caithness numbers were encouragingly slightly up on last year with 150 at Westfield and 138 at Mey. However, while the Lewis flock increased modestly from 32 last winter to 35 this, the southernmost Uist flock at Askernish continued its long term decline, with only 10-11 (compared to 19 last year). Regrettably the Loch Bee flock (also on South Uist) proved elusive in 2015/16 and was not counted in its full complement, so we have been forced to substitute an estimate of the full size of 100 for this winter, based on the count from 2014/15. The Kentra Moss flock showed an encouraging increase to 48-49 birds in 2015/16 compared to 29 at maximum last year. Numbers on Coll and Tiree remained similar and those at Appin, Benderloch and on Lismore combined continued to decline slightly over the previous winter, as did the tiny remaining flock on Mull. Despite reasonable numbers at the start of the winter, the Colonsay count was down to 36 in spring (from 66 the previous year), although numbers held on Danna/Keills/Ulva and at Moine Mhor, 8 geese continued to hang on by the skin on their teeth! Numbers on Kintyre combined increased by no less than 26% from 1,841 in spring 2015 to 2,319 in 2016, perhaps partly as a result of relatively high reproductive success (especially at Rhunahaorine) and there were also encouraging increases on Bute to 180 birds, Loch Lomond (to 251) and on Islay, where numbers increased by nearly 30% on last spring to 5183 in spring 2016. Numbers at Loch Ken peaked at 155-165, although only 112 were found during the spring 2016 count, but numbers at Stranraer were slightly up at 231. Unfortunately, the Dyfi Estuary flock, the last regular remaining site in Wales, edged ever more towards extinction with a maximum count of 23 compared to 29 in winter 2014/15. Difficulties in locating birds, bad weather and incomplete counts, forced us to substitute counts at eleven wintering resorts for counts missing during the international spring census count period. These counts were taken from those sites on dates close to the spring count dates and constituted 5.3% of the British count total (shown grey shaded in Table 2).

Table 2. Counts of Greenland White-fronted Geese in Britain 2015/16

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			63	63	63	53	62	63	62	
Papay			3							
North Ronaldsay			52			1	1			
CAITHNESS										
Westfield		90	133	140	140	150	120	120	150	19
Loch of Mey			82	141	141	141	141	138	138	120
NE SCOTLAND										
Loch of Strathbeg							1	1		
WESTERN ISLES										
Barvas/Shawbost, Lewis			28	35	35				35	
Loch Stiapabhat, Lewis								3	3	2
Benbecula				7			7		7	
North Uist		2								5
Kilpheder/Askernish, South Uist				11	11	2	10	10	10	
Loch Bee/Kilaulay, South Uist				100					100	
Bornish, South Uist						1	1	1	1	
INNER HEBRIDES										
Loch Chalium Chille, Skye			14	14		7			14	
Broadford/Pabay, Skye			12	12					12	
LOCHABER/NORTH ARGYLL										
Muck/Eigg										
Loch Shiel/Claish Moss		1	49	49	49	49	49	48	48	
Lorn:Eriska/Benderloch					5		40		40	
Lorn: Appin			42	43	43	36	36	36	36	
Lismore		76	100	132		180	169	145	120	143
Tiree			701	698	698	707	855		741	
Coll			159	159		92			159	
Fidden, Mull			4	13			15		15	
SOUTH ARGYLL										
Colonsay/Oronsay			64	73	73	45	21	36	36	
Jura: Loch a'Cnhuic Bhric			0	0	0	0		25	25	
Jura: Lowlandman's Bay			4	4	4	0		4	4	
Danna/Kiells/Ulva			203	203	203	146	204	204	204	
Moine Mhor			3	3	5	7		8	8	
Rhunahaorine				515					604	
Machrihanish				1621					1432	
Clachan				0					143	
Gigha				0	13				86	
Glenbarr				64					54	
Isle of Bute			65	140	140		130	180	180	
Endrick Mouth, Loch Lomond		33	84	133	353	195	185	84	251	
ISLAY			4564	4644	4644	4985		5183	5183	
DUMFRIES & GALLOWAY										
Loch Ken		93	136	160	160	125	165	156	112	122
Stranraer		98	202	178	178	206	206	231	231	154
WALES										
Dyfi Estuary		2	7	21	19	15	19	23	23	23
Valley and Llyn Llywenan, Anglesey			2					13	13	
Llandudno, Gwynedd			1							
Marloes Mere, Dyfed			11							
ENGLAND										
Grindon Lough				2	2	2			2	
Woodhorn, Northumberland							5			
Durridge Pools/Easington, Northumberland				2	2	5	1	3	3	
OTHER IRREGULAR SITES (see Table 3)										
England combined		0	16	10	10	33	7	1	1	
Scotland combined		0	13	0	0	0	0	0	0	
TOTALS		**395**	**6817**	**9390**	**6991**	**7183**	**2450**	**6716**	**10286**	**588**
Rest of GB less Islay		395	2253	4746	2347	2198	2450	1533	5103	588
Rest of Scotland less Islay				4711					5061	
England				14					6	
Wales				21					36	

Table 3. Counts of Greenland White-fronted Geese at irregular sites in Britain 2015/16
These counts from irregularly occupied sites have been carried over as totals into Table 2 (above)

	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
OTHER IRREGULAR SITES									
Loch of Skene, Grampian		2							
Traigh, Morar, Mallaig		1							
Whitelaw Toll, Borders, Scotland		6							
Kinnordy Loch, Angus,		4							
Durness, Sutherland					1				
Carthorpe Mires, Yorkshire					17				
Swillington Ings, Leeds, Yorkshire		1	1	1	1	1	1	1	
Nosterfield Quarry, Bedale, North Yorks					5				
North Warren, Suffolk		2				1			
Slimbridge Glos		5	5	5	5	5			
Alkborough, N. Lincs.		1							
Marston, N Lincs		3							
Theddlethorpe, N Lincs.					2				
Ingbirchworth, S. Yorks.		1	1	1					
Angerton, Cumbria			3	3	3				
Boldon Flats, S Tyneside		3							
TOTALS									
England		16	10	10	33	7	1	1	
Scotland		13				0			

Autumn staging Greenland White-fronted Geese feeding on hayfields at Hvanneyri, Borgarfjörður, west Iceland September 2016 (photo Alyn Walsh)

Table 4. Summary counts of Greenland White-fronted Geese in Ireland 2015/16

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		606	725	725	654	1026	897	1026	
2.Dunfanaghy			44		42	44		44	
3.Sheskinmore lough	14	31	31	22	27	26	29	29	
4.Pettigo	16	76	76	24	36	120	45	120	
NORTH CENTRAL									
6.Lough Macnean		46	64	64	63		60	60	
7.Lough Oughter			0	0	0	0	0	0	
8. Caledon									
33.Stabannon			39					39	
MAYO									
9.Lough Conn		0	30					30	
10.Bog of Erris									
a. Mullet			12			12	12	12	
b. Carrowmore			0		19			23	
c. Owenduff					0				
d. Owenmore									
MAYO/GALWAY UPLANDS									
11.Errif & Derrycraff	25		14			8	14	14	
12.Connemara			7					7	
GALWAY LOWLANDS									
13.Rostaff & Killower	86	86	86	86	86	86	84	84	
14.Lower Lough Corrib									
15.Rahasane Turlough		35	57	57	25+	55	68	68	15
CLARE/LIMERICK									
16.Tullagher			18					18	
17.North County Clare		31	39		37	39		39	
SHANNON HEADWATERS									
20.Lough Gara			101			101		101	
MIDDLE & LOWER SHANNON									
25.River Suck	0	165	94	94	86	111	49+	111	
26.Little Brosna		14	137	125	137			137	
MIDLANDS									
23.Midland lakes		125+	201	201	212		201	201	
27.River Nore									
SOUTH WEST									
30.Killarney valley	0	0	0	0	0	0	0	0	0
Kilshannig Maharees (Kerry)			9				9	9	
SOUTH EAST									
Wexford		4910	5908	5908	5686	7547	7326	6421	
COUNT TOTALS	**141**	**6000**	**7692**	**7306**	**7085**	**9175**	**8745**	**8593**	**15**
Ireland without Wexford			1784					2172	

COUNTS FROM IRELAND

In contrast to the increases on Islay and modest increases in other parts of Britain, the picture in Ireland was far less encouraging, with continued worrying declines at many resorts (see Table 4), as at Dunfanaghy, Co. Donegal, where the flock which regularly numbered 100 in winter 2014/15 failed to exceed 44 in 2015/16, Lough Conn (declines from 54 to 30) and Errif and Derrycraff (51 to 14). Of more concern are the declines at the major resorts of Lough Garra (114 to 101) and the Midland Lakes (220-230 to 201 maximum). Elsewhere, numbers at the increasingly important Lough Swilly-Foyle complex were generally around the same in 2015/16 as the previous winter and counts at Stabannon confirmed 39 birds there although down slightly on the last confirmed count in winter 2013/14 when there were 45 present. The flock that winters on the Pettigo plateau showed an encouraging increase to 120 in 2015/16 compared to a maximum of 103 during the previous winter, however, it is evident that this flock can move easily between there and resorts at Durnesh, making it difficult to synchronise counts effectively. Numbers held up at Lough MacNean (60), Bog of Erris (several resorts totalling 35), Rostaff and Killower (84), Rahasane Turlough (68), North Clare (39), and Little Brosna (137). The flock wintering on the River Suck proved difficult to accurately census, as is the case in many years, because differences in flooding patterns makes the geese extremely difficult to find, the spring substituted count of 111 was from the count in February. It must be concluded from failures to find geese that the flocks at Caledon and Lough Oughter in the north centre of Ireland and River Nore in the Midlands are likely no longer in existence at these resorts, while no geese were counted in the Killarney Valley. Unfortunately, in winter 2015/16, no counts were received of geese from Connemara (so the count of 7 was substituted from 2014/15) or at Lower Lough Corrib (where none were seen last winter). No counts were made at Tullagher this winter, so the status of this flock remains unknown, although the count of 18 has been substituted from last season. The spring 2016 Wexford count (which as always includes counts combined from the North and South Slobs, Cahore, Lady's Island and Tacumshane Lakes), was an unusually low at 6421 down on the 7984 counted in spring 2015. This is the lowest count since 1984 and is remarkable insofar as it represents a continued dramatic decline in the Wexford area, which until winter 2012 had been relatively unaffected by the overall increase in the population until 1999 or by the subsequent decline (see Figure 2 for instance relative to counts on Islay).

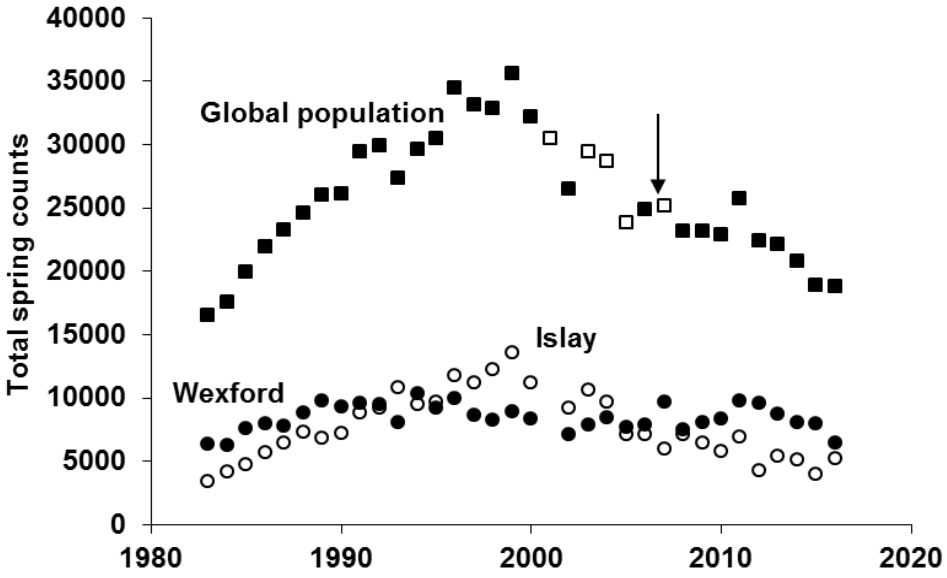

Figure 2. Total estimated global population size of Greenland White-fronted Geese spring 1983-2016 (filled squares), showing Wexford (filled circles) and Islay (open circles) annual contributions to these counts. Note that whilst Islay numbers have generally followed the overall trend, those for Wexford have not. Values for the total population size are missing from some years because it was not possible to achieve full coverage of all resorts, including spring 2001 because of the Foot and Mouth outbreak. The arrow marks 2006, when autumn hunting was banned in Iceland.

AGE RATIOS SAMPLED IN BRITAIN

Since the mid-1990s, Greenland White-fronted Geese have consistently failed to produce sufficient numbers of young during the breeding season to balance natural losses and has been the overall cause of the fall in population size. For this reason, it continues to be essential that we gather data on the proportions of young geese in the flocks every winter to see how this varies between season and flocks. As it is simply not possible to gather these data on the breeding grounds because of their highly dispersed nature there, we are dependent on the efforts of the count network to gather these data. Again in 2015/16, our counters have been outstanding in gathering these statistics for us and we are not being glib when we say that we continue to be deeply indebted to those that gather age ratios and brood sizes from flocks in the field and send them to us each year. We know how frustrating this can be, but it means a great deal to be able to present these data! The excellent coverage obtained from counters in 2015/16 is shown below with the large number of observations in Table 5.

Table 5. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Britain 2015/16.

SITE	% YOUNG	AGED SAMPLE	MEAN BROOD SIZE	FAMILIES SAMPLED
The Loons, Orkney	11.67	60	1.75	4
Loch of Mey, Caithness	30.43	46	2.80	5
Westfield, Caithness	10.53	133	4.67	3
Kilpheder, South Uist	18.18	11		
Tiree	11.99	542	2.17	30
Coll	19.64	56		
Lorn, Appin	11.11	36		
Lismore	3.45	116		
Lorn, Benderloch	15	40		
Mull, Fidden	26.67	15		
Keills/Danna	7.86	140		
Moine Mhor	0	8		
Glenbar[1]	10.17	59	3.00	2
Rhunahaorine, Kintyre[1]	22.15	325	3.60	20
Machrihanish, Kintyre[1]	12.05	805	3.59	27
Clachan, Kintyre[1]	7.02	114	3.00	2
Islay[1]	16.13	2442	2.92	134
Inver, Jura[1]	16	25	4.00	1
Bute	27.63	76	4.33	3
Loch Ken	20.61	165	3.40	10
Stranraer	28.22	202		
Endrick Mouth	20	110	2.00	8
Dyfi Estuary	0	21		
Druridge Bay, Northumberland	20	5		
Carthorpe Mires, Yorkshire	25	4		
Britain, excl. Islay	14.93	3114	3.01	119
OVERALL	**15.46**	**5556**	**2.96**	**253**

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

The 2015 breeding season was again reasonably good based on the proportions of first winter individuals amongst some of the flocks. The percentage young exceeded 10% at 20 out of 25 sites and 15% amongst 13 sets of samples, all but two of these from reasonable sample sizes, with 30% in Caithness and more than 20% on Mull, Rhunahaorine, Bute, Loch Ken, Stranraer and Loch Lomond (Table 5). The percentage young only fell below 5% in three flocks (Lismore, Moine Mhor and Dyfi; Table 5). Average percentage young away from Islay was 14.9% (n = 3114) and mean brood size 3.01 (n = 119). On Islay production was 16.1% (n = 2442), above average for recent years giving an overall mean of 15.5% young in Britain (Table 5 and Figure 3). Mean overall brood size was 2.96 (see Table 5) based on 253 families sampled from 13 sites, comprising a mean of 2.92 on Islay (n = 134) and 3.01 elsewhere (n = 119).

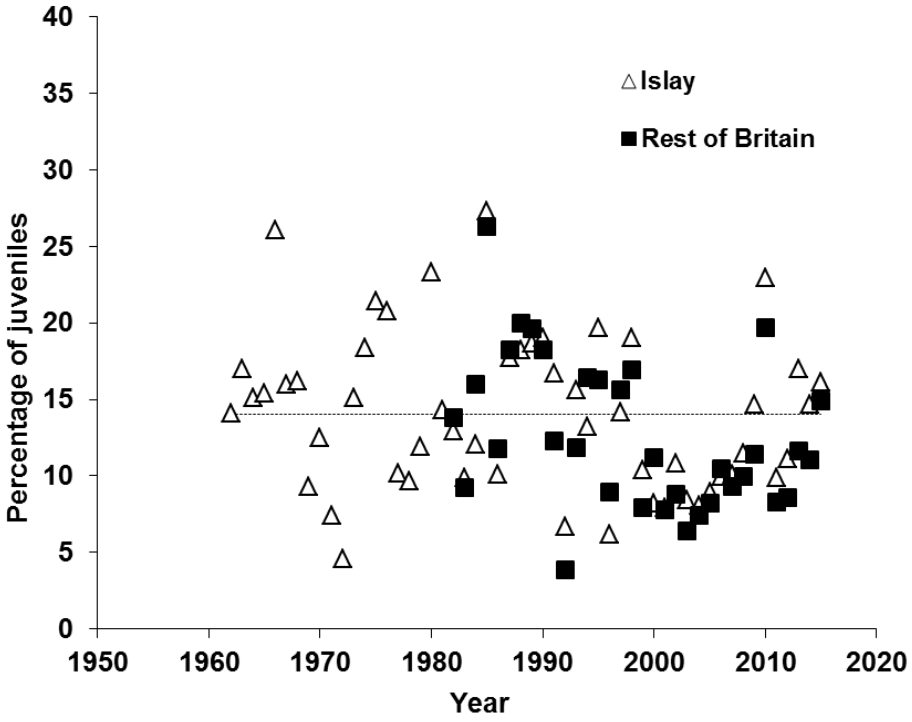

Figure 3. Age ratios sampled amongst Greenland White-fronted Geese at Islay 1962-2016 and compiled from other sites in Scotland and Wales, 1983-2016. The dotted line indicates the average percentage young amongst samples from Islay for 1962-2016.

AGE RATIOS FROM IRELAND

Breeding success at Irish sites where age ratios were sampled was depressingly low, with no young birds at all among those sampled at Sheskinmore, Lough Conn, Errif and Derrycraff or Rostaff and Killower (Table 6). Little Brosna was very low at 4.4% although the Midland Lakes did at least provide 14% among a sample of 186. Wexford continued its pattern of witnessing very low levels of young return from the breeding areas, with just 5.83% young among 3599 geese sampled for age, almost identical with last year (Table 6 and Figure 4). This contributes to the depressing lack of response in reproductive success in very recent years that contrasts slightly with the modest recovery that seems to have characterised the proportions of young on Islay and in Britain generally (Figure 3) but of which there seems no current sign in Ireland and at Wexford (Figure 4). Mean brood size at Wexford was 2.57 (similar to 2.69 last season) based on 68 broods. Elsewhere in Ireland, brood size was available only from the Midland Lakes with a mean of 2.89 based on 9 families (Table 6).

Table 6. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Ireland 2015/16.

SITE	% YOUNG	SAMPLE	MEAN BROOD SIZE	SAMPLE
Sheskinmore	0	12		
Lough Conn, Co. Mayo	0	28		
Errif and Derrycraff	0	8		
Rostaff and Killower	0	86		
Little Brosna	4.40	91		
Midland Lakes	13.98	186	2.89	9
Wexford	5.83	3599	2.57	68
Ireland, excl. Wexford	**7.30%**	**411**	**2.89**	**9**
OVERALL	**5.99%**	**4010**	**2.61**	**77**

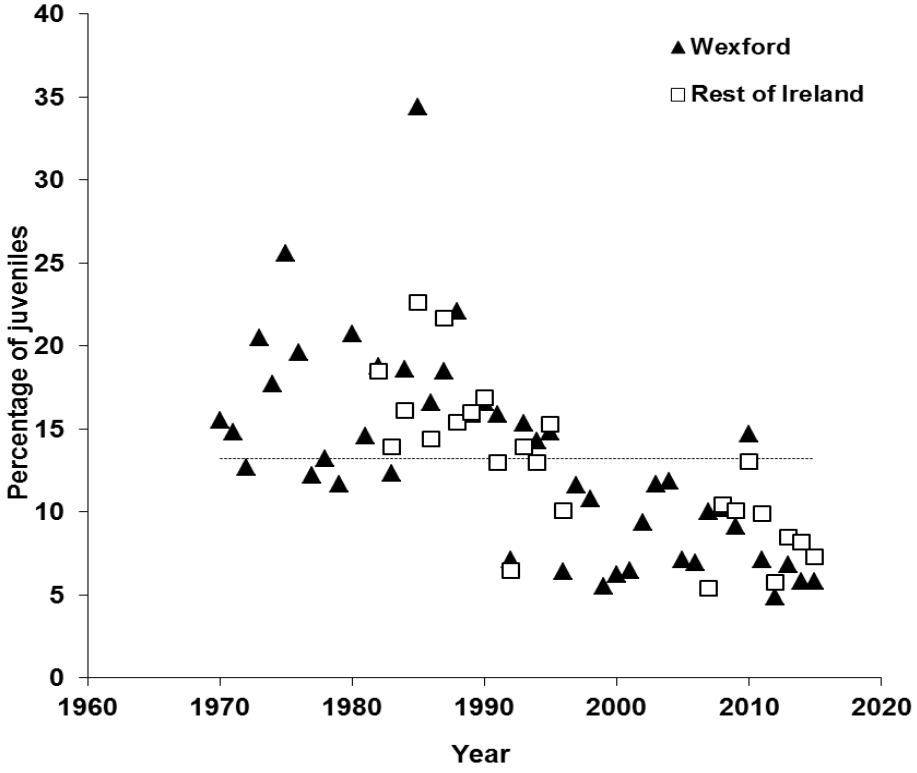

Figure 4. Age ratios sampled amongst Greenland White-fronted Geese at Wexford 1970-2016 and compiled from other sites elsewhere in Ireland for years in which there exist sufficient data. The dotted line indicates the average percentage young amongst samples from Wexford for 1970-2016.

CONSERVATION NEWS

PROTECTIVE LEGISLATION IN WALES

The Greenland White-fronted Goose is Red-listed in the United Kingdom, is recognised under IUCN criteria is an Endangered taxon and has recently been the subject of an international Flyway Action Plan adopted at the Fifth Meeting of Parties of the Agreement on the conservation of African-Eurasian Waterbirds (AEWA) in France in spring 2012. Since the mid 1990s, the small global population has shown consistent declines to the present day, and it is clear that all sources of additional mortality should be avoided at all costs. The UK and Ireland have responsibility for supporting the whole of the world population of this rare goose during the non-breeding season, and, with Iceland and Greenland, share the global responsibility for its conservation.

The 2012 Action Plan drafted for AEWA congratulated wildfowling groups for their long-standing voluntary shooting ban on of Greenland White-fronted Geese on the Dyfi Estuary, Wales: "which had probably avoided that flock becoming extinct. As of now however, the Greenland White-fronted Goose still remains legal quarry in Wales. Birds using the traditional wintering site of Grindon Loch in northern England are also still theoretically legal quarry. The Action Plan urged the governments of Wales and England to remove Greenland White-fronted Geese from the quarry list in those countries at the earliest opportunity." In addition, it states: "With low annual productivity it is critically important to reduce sources of mortality. This will conserve the very small numbers of successful breeders that produce subsequent generations and help restore the population to former levels. To this end, the workshop and the subsequent Plan concluded that hunting cannot currently be undertaken on a sustainable basis at the present time and therefore "any kill would exacerbate the current unfavourable conservation status of the population." Through a quirk of the existing legislation, Greenland White-fronted Geese therefore are still legal quarry in England or Wales, the last two countries along the entire flyway where hunting can still place legally. For some years this has meant that the UK Government has been in breach of its AEWA obligations and the adoption of the international plan will highlights this fact. European White-fronted Geese are of course far more numerous elsewhere in Europe, but the fact remains that despite there being several regular wintering sites in Wales for this population as late as the 1970s, this subspecies is now extinct as a regular wintering bird in the Principality. For this reason, and for reasons of misidentification between the two races, since the drafting of the AEWA plan, GWGS has been lobbying the Welsh Government to amend the legislation and protect the White-fronted Goose as a species from all shooting in Wales.

Earlier this year, the Welsh Government undertook another round of public consultation regarding the implementation of a possible ban on hunting White-fronted Geese in Wales. They set out four proposed options as follows, after each of which we have explained the GWGS recommendations along with our reasons for advocating each:

- **Option 1: A statutory ban on shooting of all European White-fronted Goose (EWfG) and Greenland White-fronted Goose (GWfG) throughout Wales throughout the year.**

  GWGS supported this recommendation because

  (i) EWfG are functionally extinct in Wales and hunting will only inhibit any return of that population,
  (ii) GWfG have declined from more than 35500 in 1999 to less than 18800 in 2015 and are teetering on the edge of extinction in Wales (max 23 last winter on the Dyfi) and the loss of every single bird lost will accelerate that process, and
  (iii) removing both populations will, in addition, remove any possible identification problems associated with the killing of GWfG because of misidentification as EWfG.

- **Option 2: A statutory ban on shooting of all White-fronted Goose (EWfG and GWfG) only in specified parts of Wales, used by GWfG, throughout the year.**

  GWGS rejected this option because the effects of hunting and hunting disturbance are not site related. For the reasons provided above, it makes no sense to allow the effects of hunting disturbance and mortality to inhibit the return of EWfG and push the GWfG to extinction in Wales just because individual birds do not respect human interpretations of geography. The law should provide the moral framework that removes all factors likely to affect the survival and status of these two incredibly rare populations in Wales.

- **Option 3: A statutory ban on shooting of GWfG throughout Wales throughout the year.**

  GWGS supported this idea in principle, but rejected it as an option because of (i) and (iii) in Option 1 above.

- **Option 4: A statutory ban shooting of GWfG only in specified parts of Wales, used by GWfG, throughout the year.**

  GWGS rejected this option for the reasons given for supporting Option 1 and for rejecting Option 2

- **Option 5: Maintain the non-statutory voluntary ban of shooting of GWfG in Wales on land over which the wildfowling clubs have specific rights to shoot.**

  GWGS totally supports this in principle, but totally rejected this option as the sole mechanism for protection Greenland White-fronted Geese in Wales for the reasons stated in support of Option 1. Implementation of this option alone (*i.e*. continuing with the *status quo*) would mean that in reality ANY hunter anywhere who is not a member of a club has the total legal right to shoot individuals from both populations and contribute to their extinction and continuing absence in Wales without recourse to the law. This position is highly disingenuous to the governments and peoples of Greenland and Iceland, who long ago removed the White-fronted Goose from their own quarry list for indigenous hunters in the interests of international conservation and in order to safeguard the global population.

Everyone can read the analyses of the results of the consultation at:

https://consultations.gov.wales/sites/default/files/consultation_doc_files/160708-consultation-responses-conservation-white-fronted-geese-en.pdf

Of the 1137 individuals that responded, 80% (907) indicated their preference for option 1, only 73 specifically indicated they were against a statutory ban and another 157 indicated a preference other than option 1. Another 67 individuals did not indicate a preference for any of the options.

Despite this overwhelming support, to our utter surprise and dismay, the Welsh Government decided against introducing any statutory ban on the shooting of White-fronted Geese in Wales, despite the precariously low numbers of Greenland White-fronts and very few regular Russian birds in the country. Instead, the Welsh Government maintained that the current voluntary ban by shooting clubs was sufficient. Wales and England now remain the only part of the birds' range where they can legally be shot. Despite a voluntary ban by wildfowlers on the Dyfi estuary, the geese can still legally be shot there and elsewhere and this may happen at times, even if by accident. Many, including GWGS, campaigned for the law to be changed and we are deeply disappointed by this outcome, which we believe is ill-advised and completely unjustified. GWGS continue to examine whether the decision to continue a voluntary ban on shooting Greenland White-fronted Geese on the Dyfi and by some clubs elsewhere as the sole non-statutory means of contributing to the protection of the race places the government in breach of its international obligations under the flyway plan for this threatened goose.

We are grateful to the RSPB, WWT, Welsh Ornithologists Society and other organisations for their continued support of this campaign, as well as to all the many folk who contributed their views to the consultation process.

OBITUARY

HUGH BOYD

It is with deep regret that we announce the death of Hugh Boyd 12 May 1925 – 3 July 2016

The very first time I met Hugh Boyd at Slimbridge in 1978, when we parted, he wrote out a personal cheque for hundreds of pounds to the Greenland White-fronted Goose Study. In doing so, he not only confirmed that a dishevelled bunch of undergraduates would undertake a 4 month expedition to west Greenland to study their quarry, but that this action would launch a long running project that continues 38 years later with the work reported in these pages.

Hugh's interest in Greenland White-fronted Geese was long established. It was Hugh Boyd that started the all-island counts of Barnacle and Greenland White-fronted Geese on Islay that also continue to the present day. He undertook the first pioneering estimation of their annual survival rates based on recovery data from metal ringing, published in the Danish Journal D.O.F.T. in 1958 and as a result of a string of spring and autumn studies in his beloved Iceland, he was to publish no fewer than 11 scientific publications (the latest in 2012) on them from work carried out in a series of expeditions after 1989, at an ae when mere mortals would gracefully retire from active research. He was a great fan of the subspecies, but also a sterling supporter of the Greenland White-fronted Goose Study and everyone who shared a passion for these geese.

Hugh Boyd was born and educated in Bristol. Even at school he had a deep love of nature and the countryside and would cycle out to the Somerset Levels and the Bristol reservoirs to watch waterbirds and to the Mendip Hills to count rookeries. National service intervened and Hugh never formerly finished his university education (zoology, chemistry and microbiology at the University of Bristol) but this did not stop him landing his first job as warden at Lundy Bird Observatory, Devon, in 1948. The following year, Peter Scott asked him to join the Severn Wildfowl Trust at Slimbridge as its first research biologist. The enormous good fortune of this decision could never have been foreseen, but is strikingly evident in hindsight. Hugh's enquiring and highly disciplined scientific mind was perfect for the role at the fledgling and rapidly developing Trust. Hugh's quiet thoughtful reflection and deep understanding was also a perfect foil for Peter's charisma, artistic abilities, networks and wide interests and together they nurtured a hot house environment at Slimbridge to study all aspects of wildfowl ecology, behaviour and biology. In doing so, they laid the foundations for just about everything we hold dear today regarding waterbird conservation, management and research.

Peter and Hugh saw the need to be able to monitor the relative abundance of the migratory waterbirds through count networks, and laid the foundations of what we now call “citizen science”, enthusing volunteers to go out and count the numbers of birds using wetlands and submit their results to enable year on year comparisons that provide annual indices of abundance. Hugh travelled to North America and, deeply impressed by the developing techniques there, was pivotal in introducing new methods to Europe, such as using aerial survey to simultaneously count the Barnacle Geese wintering on remote islands along the coasts of Scotland and Ireland (a survey which also continues to the present).

Hugh Boyd (second from left) being blown away in a cold wind during Greenland White-fronted Goose studies at Hvanneyri, Iceland with Ian Francis, Tony Fox and David Stroud in May 1998 (photo Ian Francis)

Hugh and Peter realised that to properly interpret these results, they needed a fundamental understanding of the population structure of the species, and so it was that Hugh was the first to organise the first ever analysis of metal ring recoveries from Barnacle Geese that established the three distinct wild populations that still winter on (i) the Solway, (ii) off western Ireland Britain and (iii) around North Sea coasts but which all originate from discrete and very different breeding areas. With Peter, Hugh was also instrumental in developing the application of large scale metal ringing of geese to generate ringing recoveries from shot birds to estimate annual survival, winter and staging site fidelity as well as population structure. In doing so, he pioneered the development of large scale annual rocket-netting of Pink-footed and Greylag Geese around Scotland that also involved very many more “citizen scientists” who gladly gave of their free time to help in these remarkable endeavours. The early 1950s also saw Hugh travel with Peter to the interior Iceland to round up and ring large numbers of flightless moulting Pink-footed Geese which was to form the basis for his great love of that country. In the early 1960s, Hugh was also breaking new ground by applying cannon-netting techniques perfected for geese to the capture of waders. As a result, he was to become one of the founding fathers of the Wash Wader Group and wader studies in general, as well as producing the first ever estimate of survival rates for most common British wader species which for some species remains the gold standard to the present day.

Even in those early years, Hugh’s boundless curiosity was applied to all aspect of waterbird ecology. With visitors such as Konrad Lorentz and Niko Tinbergen on the cutting edge of the new field of ethology, Hugh’s interest in wildfowl behaviour was encouraged to bloom and he wrote the definitive study on the nature and functions of parent-offspring relationships in extended goose families on the wintering grounds, published in 1953, which is still regularly cited to the present day. He quickly realised the need to integrate measures of reproductive success with his estimates of survival to be able to interpret the annual changes in the coordinated counts of discrete populations. This was clearly

essential if it was ever to be possible to offer up recommendations for best management interventions to improve the conservation status of these populations, many of which were recovering from very low levels on a continent recently ravaged by world war.

So it was that Hugh for many years edited the Wildfowl Trust Annual Report (which would later become the journal Wildfowl) and gradually built the foundations of our modern approaches to the population monitoring and the modelling of population dynamics of our common duck, goose and swan species that we now take so much for granted. Not content with this, Hugh also contributed directly to the development of new and innovative statistical and numerical methods of analysing such data. Eventually, Hugh was seconded to the Nature Conservancy in Edinburgh and he rented a cottage out near Loch Leven for early morning goose watching and birdwatching at weekends. His reputation however, went before him and his visits and collaboration with waterbird biologists in North America finally led to his being offered the very prestigious position of Head of Research for Eastern Canada in the Canadian Wildlife Service. Given this opportunity, Hugh's influence quickly became enormous and in Canada, he was instrumental in developing their national seabird, shorebird, nest recording, ringing and breeding bird research and monitoring programmes, as well as laying the foundation for the North American Waterfowl Management Plan that now integrates the management of all waterbirds throughout that enormous continent. It is difficult to really appreciate what a massive contribution Hugh made to waterbird conservation and management in North America, but suffice it to say this mild, meek and humble man has made a truly massive global contribution in his long life in two hemispheres.

Hugh Boyd was not "just" an outstanding biologist, he was husband to Gillian (whom he met at Slimbridge) and father to three boys. He had a deep knowledge of macroeconomics and current affairs, was a huge fan of opera, an expert on A.E. Housman and the Bloomsbury group and loved a nip of Islay Bunnahabhain whisky while working up the data of an evening. But for those privileged to work with him the field, we will remember him with huge affection for his warmth and friendship, crackling good humour and inspirational help, encouragement, support and advice, especially to the young and to the underdog. As a founding father of waterbird and wetland conservation and research on two continents, we have lost a major treasure, but as a very dear friend and valued colleague Hugh is already very sorely missed.

Tony Fox

Hugh Boyd, with Malcolm Ogilvie (centre) and Roy King (right) on location in northern Iceland celebrating Hugh's 80th birthday in May 2005 (photo Tony Fox)

ACKNOWLEDGEMENTS

Thanks so very much indeed to all of you for giving up your time to count, gather data on age ratios, brood sizes, collars and ring readings and to take the time and care to forward this information to us. While it is worrying to see little sign of an upturn in numbers, at least the fruits of your labours in this last winter have confirmed that the population has not fallen to an even lower level in 2015/16.

We are deeply indebted to the following for counts, age ratios and other information from Britain during 2015/16, these include: Paula Baker, Ian Bainbridge, Dave and Pat Batty, John Bowler, Ed Burrell, George Christie, Paul Collin, Robert Coleman, Andrew Dacre, Steve Duffield, John Dye, Derek Foreshaw, Ian Fulton, Julia Gallagher, Larry Griffin, Robin Harvey, Kath Hamper, Brian Henderson, Ian Hopkins, James How, Iain Jamieson, David Jardine, Tracey Johnston, Ben Jones, Russell Jones, John Kemp, Andy Knight, Morven Laurie, Mary Legg, Alan Leitch, Sinclair Manson, Paul Massey, Rae McKenzie, Bob McMillan, Dougie Menzies, Carl Mitchell, Brian Neath, Bill Neill, Donald Omand, Malcolm and Carol Ogilvie, Mike and Val Peacock, Nicky Penford, Brian Rabbitts, Bryan Rains, Alan Reid, Robin Reid, Brian Ribbands, Andy Robinson, Chris Rollie, Geoff Small, Julian Smith, Andrew Stevenson, David and Judy Stroud, Paul Tarling, Arthur Thirlwell, Morgan Vaughan, Catriona White and Emily Wilkins. For Ireland, these include: Alan Brady, Dominic Berridge, Derek Brennan, Kieran Buckley, Noel Bugler, Brian Burke, A. Burns, David Cabot, Sue Callaghan Helen Carty, Cameron Clotworthy, Dick Coombes, Fionnbar Cross, Olivia Crowe, Jack Cullen, Eamon Doran, Tom Fiske, Triona Finnen, Ciara Flynn, Katherine Freeman, Emma Glanville, Michael Hackett, John Higgins, Chris Ingram, Donal Keown, 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. With our apologies for anybody regrettably forgotten, this is simply down to old age! Thanks to folk who maintain web sites and blogs (too many to thank individually) that provided extra count data and interesting sightings in 2015/16. Thanks to the National Parks and Wildlife Service for the continued research and monitoring programme, the count network in Ireland for their support of this report and to John Wilson who continues to be the source of great support. Thanks to SNH for site coverage throughout Argyll, especially to Rae MacKenzie, Tracey Johnston, Morven Laurie and Margaret Morris, to the Kintyre and Islay counter teams and 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:
10–14 December 2016 (autumn international census); 11–15 March 2017 (spring international census) otherwise please also try and count on or near to: 12 –16 November 2016; 14–18 January 2017; 11–15 February 2017 and 25 February – 1 March 2017. Thank you!!!

Greenland White-fronted Geese near Frackersaig, Lismore Island (photo Ian Francis)