

REPORT OF THE 2021/22 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 2022 comprised 18027 individuals, down by 10.7% on the 20186 from the previous year, made up of 8289 in Ireland and 9738 in Britain. Numbers at Wexford, SE Ireland, fell by 901 (14.3%) to 5361, while numbers counted on Islay also fell again by 1581 (23.0%) to 5297. This was balanced by an increase of 780 in the rest of Ireland, but a decrease of 457 in the remainder of Britain away from Islay. Reproductive success was among the lowest on record in Ireland at 5.6% first winter birds, it was better in Britain (11.2%), but still fell below the long term average.

This report presents the results of the surveys of the Greenland White-fronted Goose on the wintering grounds in winter 2021/2022, combining counts from all the British resorts (coordinated by the Greenland White-fronted Goose Study) and those in Ireland (co-ordinated by the National Parks and Wildlife Service). The international coordinated count in spring 2022 found a combined global total of 18027 Greenland White-fronted Geese, a net loss of 2159 birds (a decline of 10.7%) on the previous world population estimate of 20186 in spring 2021.

The annual spring 2022 census in **Ireland** found a total of 8289 Greenland White-fronted Geese (compared to 8410 in spring 2021), made up of 5361 birds in the Wexford area and 2928 elsewhere in Ireland (compared with 6262 and 2148 respectively in the previous spring). Missing spring counts again had to be substituted for 16 flocks, more than has been the case in normal years, accounting for 28.4% of the total, due partly to covid-19 restrictions, but they are thought to reflect the true abundance. The annual spring count of all known Greenland White-fronted Goose wintering flocks in **Britain** found a total of 9738 in spring 2022, compared to 11776 in spring 2021, and comprised four counted in England, 47 in Wales, 5297 on Islay (compared to 6878 last season) and 4390 in the rest of Scotland (compared with 4856 last season). Spring coverage in Britain was reasonably complete. Counts from the specified spring count period were missing from ten resorts, but all were substituted with counts undertaken very close to the defined international count dates, amounting to 4.7% of the British total.

Among **Irish** wintering geese, the percentage young among aged flocks after the 2021 breeding season was an extraordinarily low 5.6% (based on 3116 aged individuals) compared to 6.4% last season. Mean brood size among the Irish flocks was also low at 2.21 (n = 66) compared to 3.24 last season. There were 4.93% young among 2577 aged at Wexford (substantially down on last season's already very low 6.16%), where the mean brood size was also low at 2.17 (compared to 3.26 last season) based on 54 broods. Elsewhere in Ireland, reproductive success was also very low at 8.91% based again on an excellent sample size (n = 539), with mean brood size 2.42 (n = 12, compared to 3.0 last season). The proportion of young in aged samples from **British** wintering geese was substantially higher than in Ireland as has been the case in recent years, but still below the recent average with an overall percentage young of 11.2% (n = 5337 aged, compared to 13.0% last season), mean brood size was 2.51 (n = 185 broods, compared to 2.41 last season). This included 10.5% on Islay, (n = 3321, compared to 11.5% last year) and 12.4% (n = 2016) elsewhere in Britain. Mean brood size on Islay was 2.70 (close to last year's 2.64) and 2.28 elsewhere (almost identical to 2.27 after summer 2020).

The continued decline in overall numbers gives some cause for concern, given the vulnerability of this geographically restricted wintering population and the relatively major declines witnessed at the two most important wintering resorts, Wexford Slobs in Ireland and on Islay in the Scottish Inner Hebrides. Particularly low reproductive success at Wexford and throughout Ireland in all likelihood continues to contribute to the observed declines, but it is also highly likely that poor survival also contributed to the downturn in numbers this season.

INTRODUCTION

The 2021/2022 survey represents the 40th 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, broken down by totals for Wexford and the rest of Ireland, and from Islay and the rest of Britain.

Table 1. Spring population census totals for Greenland White-fronted Geese, 2017-2022.

	Spring 2017	Spring 2018	Spring 2019	Spring 2020	Spring 2021	Spring 2022
Wexford	7047	7637	7436	8312	6262	5361
Rest of Ireland	1912	1950	1899	2106	2148	2928
Islay	6141	5319	6771	5910	6878	5297
Rest of Britain	5456	5379	5360	5223	4898	4441
Population total	20556	20285	21466	21551	20186	18027

AUTUMN ARRIVAL PATTERNS IN AUTUMN 2021

A single White-fronted Goose turned up at Munloch Bay, Moray Firth, NE Scotland on the morning of 26 September 2021, and the poor lost soul later was seen in nearby Nigg Bay further north. Records of singletons at Loch Flemington nearby during 16-19 October could relate to this same individual. Two birds turned up in Udale Bay, also in the Moray Firth on 6 October and remained until at least 27 October, with four seen on 22 November and at least one of which remained through until at least 23 April 2022 looked like becoming a fixture. A single first seen on Hirta (St. Kilda) on 28 September was seen on four subsequent dates until 9 October. A surprisingly large group of 92 birds turned up on Colonsay on the comparatively early date of 1 October. One first-winter bird turned up at Eoligarry (Barra, Western Isles) on 4 October and remained there throughout the winter (joined by another first winter briefly there on 19 November), numbers on Barra then increased to peak at 19 birds on 24 December. Although sometimes scattered across Barra (including often a lone juvenile), simultaneous counts suggested 20 remained there at least through January. A single Greenland White-fronted Goose also turned up at Luskenytre, Harris on 5 October and at Montrose Bay, Angus on 7 October. Pete Dale spotted his first 14 Greenland White-fronted Geese on Clais Moss on 11 October (local observers thought they had heard them the previous afternoon), confirmed the next day by Andrew Dacre on Kentra. Numbers built there quickly to around 86 on 16 and 17 October. The main passage witnessed at Askernish, South Uist occurred on 12 October when 166+ flew south in four skeins, with a further 14 on 15 October, but the autumn lacked dramatic arrivals in the Western Isles. Dominic Berridge saw a single Greenland White-fronted Goose arrived back at Wexford Slobs on 11 October, rising to 24 on 12th, 500 by 19th and 1172 by 28 October. First arrivals at Stranraer (8 individuals) were seen on 12 October, at Loch Ken (5) on 14 October and at Loch Lomond (15) on 15 October. On Tiree, there were none until 15 October when 55 arrived at Loch a'Phuill, followed by 220+ flying over south in small groups all day. Thirty flew south over Balephuill on the morning of 16 October and numbers reached 110 at An Fhaodhail by 27 October. A single bird turned up at Martin Mere WWT on 22 October. Tom Kistruck and Gareth Thomas reported their first 11 geese back on the Dyfi Estuary on 1 November (two days earlier than this time last year), when, just like last year, they came tumbling in and immediately all fell asleep! Next day numbers had risen to 14, including one brood of three and a bird with an unread leg band. By 5 November, there were 24 birds back including 7 first-winter birds, including collar V2J (last seen Dyfi 2019/20), and leg band only birds 40 (seen every year winter since ringing) and V8J (last observed on the Dyfi in 2019/20), all originally marked on the Dyfi in 2016/17. Julian Smith had 45 at Loch of Mey on 1 November, rising to 100 when they left for roost that evening. The first five Greenland White-fronted Geese were not reported from Loch Bee, South Uist until 7 November and a report of 61 at Coot Loch, Benbecula on 10 November also suggest these were recent migrant arrivals there. The first 40 birds back on Lismore did not appear until 7 November. A single Greenland White-fronted Goose turned up with Pink-footed Geese at Rattray, Aberdeenshire on the morning of 15 November. Finally, a lost adult goose at Steinish on the east side of Lewis was reported on 24 November.

No fewer than 15 Greenland White-fronted Geese were reported on the Norway Bird Portal within "Artsobservasjoner" on 12 October 2021 and a gorgeous photograph clearly identified two broods of two and six among the group at Håa, Levanger, Trøndelag. Our intrepid correspondent who alerted us to the record, Paul Shimmings, later had the same group of lost souls come to him, when he found what looked like the same group of 15 (also families of two and six) at Skatval, some 34 km to the south west just north of Trondheim Airport, Norway on 6 November 2021, feeding on stubble among 2597 Pink-footed Geese, a Russian White-fronted Goose and 55 Whoopers. They left that evening and subsequently a group answering to the same description (eight first-winter, seven adults) turned up in a stubble field at Nes in Ådal some 80 km NNW of Oslo on 11 November.

SPRING 2022 DEPARTURE PATTERNS

Numbers at Wexford Slobs likely started to drop from the staggeringly early date of 19 March, when 25 were migrating over Ballon, County Carlow (64 km NNW of the Slobs) at 18:35 in the evening. Numbers at Wexford fell from well over 5000 there to just 616 on 29 March. As usual, considerable passage was witnessed on the Western Isles, starting with 22 flying west at Vallay, North Uist on 25 March. Two skeins of 40+ and 53 passed Askernish northwards on 26 March, with two flocks of 130 and 105 passing Rubha Ardvule the same day. On North Uist, passage was witnessed on 24 March (14 north), 25 March (22 resting) and on 5 (46), 7 (flocks of 10 and 13) and 15 April (4). There were 17 reported from Bernaray on 2 April and the last substantial movement was of 128 over Abhainn Suidhe on Harris on 10 April. Numbers remained high on Tiree into April with 95 at Balinoe on 2 April and 45 at Hough on 7 April, but most birds departed on 9-10 April, with last stragglers 8 (An Fhaodhail on 11th), 19 (Gott, 14th) 12 (Loch a'Phuill, 14th) and 5 (Balinoe, 21st). Last birds seen on Colonsay were 2 on 18 April, numbers on Lismore had fallen to 55 on 3 April and the last were 16 seen on 8 April there. Twenty-six lingered at Loch Ken until 6 April and 47 were last seen at Stranraer on 4 April, although 19 were seen offshore at Corsewaul on 8 April. The Dyfi Estuary flock was last seen on 2 April. The lone Greenland White-fronted Goose that was present at Myerscough Quarry, Lancashire from February, remained late until at least 24 April, while the singleton wintering at Grindon Lough, Northumberland, persisted until at least the 27th of the month. A singleton were also reported on Unst on 12 April.

COUNTS IN BRITAIN 2021/2022

Thanks again to our magnificent count network in the field, who again achieved quite ridiculously good count coverage of wintering Greenland White-fronted Geese in winter 2021/22. We are again extremely grateful to the British Trust for Ornithology (and specifically the good offices of Neil Calbrade and Ailidh Barnes) for prompt and efficient access to all records of Greenland White-fronted Geese entered on the BirdTrack database (organised by BTO with project partners Royal Society for the Protection of Birds, BirdWatch Ireland, Scottish Ornithologists Club, Welsh Ornithologists Society and BirdLife International) and via the Wetland Bird Survey (WeBS, organised by BTO with project partners RSPB and JNCC in association with WWT). As ever, these counts do not add much to our regular basic monitoring, but we are extremely grateful for these observations at non-regular sites and especially during migration periods, which has been invaluable to contributing to overall picture of the wintering population. Thanks to all the observers who take the care and trouble to provide us directly with counts, but also the good folk who do so via these two BTO schemes.

Table 2 provides monthly maximum counts from all known regularly occupied British wintering haunts for Greenland White-fronted Geese, together with counts from the nominated internationally coordinated census periods in December and March. Each year, we encourage count coverage during these two periods to ensure coordination with parallel counts in Ireland. However, as we are keen to look for potential within-winter changes in abundance at regular wintering haunts and to provide counts when coverage during the census periods was not possible, we also ask counters to provide maximum numbers encountered at other times of the winter as well. Marking and tracking of individuals do confirm Greenland White-fronted Geese to be highly winter site faithful, but inevitably birds get blown off course, isolated from their kin and turn up unexpectedly in many different areas. Increasingly, we also see

marked birds moving between sites within winters. We try and pick this up by searching the internet and social media sources, as well as incorporating data from BTO WeBS and BirdTrack. Numbers reported at so-called irregular sites are shown in Table 3 and incorporated into the master totals in Table 2. Once again, we received no reports of birds in the Low Countries and the lack of reports of long staying birds from Norway (despite the group of 15 staying into November) confirms that it is unlikely that we are missing very many wintering Greenland White-fronted Geese outside of the normal range within Ireland and Britain.

We continue to have more confidence in the March count as being representative of numbers in each winter. Our experience continues to be that geese are more easily counted during this spring period at most resorts compared to other times of year and it represents the population size after the course of the preceding winter. Milder autumn weather in Iceland has resulted in geese remaining very late in Iceland in some recent years and delayed straggling arrivals to the winter quarters, which are always complicated by geese resorting to traditional remote peatland habitats in the early season, compounding our ability to count them. Nevertheless, given the harshness of the Icelandic winter we remain confident that no birds remained there throughout winter 2021/22.

Unfortunately spring counts in winter 2021/22 registered declines in population abundance across the board. So after the cheering count of 102 Greenland White-fronted Geese reported from Orkney in the vicinity of the Loons in 2020/21, numbers fell to 85 there for most of this winter. In Caithness, numbers fell slightly from 287 to 269 in spring 2022. Alas, we lacked count coverage on Lewis this last winter. On South Uist, Loch Bee numbers were slightly down on last year (101 versus 123) and the Kilpheder/Askernish flock just held on with seven birds reported as per last winter. Interestingly, 20 Greenland White-fronted Geese were consistently encountered on Barra, also in the Western Isles throughout the winter as late as January, which is not normally a regular wintering resort of the population. As ever, the goose flocks on Skye give cause for concern, although it is encouraging to report sightings of 18 at Broadford, where birds have been impossible to find in recent years, with eight to nine still hanging on at Kilmuir further north. In stark contrast, the Loch Shiel flock increased from 73 birds in 2020/21 to 87 in spring 2022, with numbers peaking at 109 in mid-winter. Lorn numbers were again disappointing, with 35 in the Benderloch area and just 10 at Appin, while on Lismore, 108 were counted in spring compared to 83 last spring, where the spring count was much lower than in mid-winter. Numbers on Coll were disappointing, reaching a maximum of 133 mid-winter relative to just 79 in the census period (compared to 256 and 158 respectively, last winter), although this was slightly compensated for by slightly higher numbers on adjacent Tiree where the spring count was 945 (compared to 909 in spring 2021). Numbers on Colonsay fell from 109 in spring 2021 to an estimated 70 in spring 2022, at Danna/Kiells/Ulva from 209 to 145 over the same period, but against all odds, five birds returned again to winter at Moine Mhor in 2021/22 as in the previous winter. Combined simultaneous counts on the Mull of Kintyre also recorded a drop in numbers from 2123 in spring 2021 to 1717 in 2022, with a similar decline from 134 to 120 on the Isle of Bute over the same period, balanced by a slight increase at Loch Lomond (from 164 to 208 counted in spring 2022). Although the Greenland White-fronted Geese wintering on Islay constitute a complex of many separate "flocks" each with their own feeding range and roost sites, which shift within winters, we have traditionally dealt with these as one "unit" and here too, numbers declined substantially from 6878 in spring 2021 to 5297 in spring 2022. Pleasingly against the general trend, numbers increased modestly in Dumfries and Galloway, both at Loch Ken (161 compared to 129) and Stranraer (175 versus 163), as well as in Wales, both on the Dyfi (22 versus 24) and on Anglesey (18 versus 20). Intriguingly, Gareth Thomas reported that numbers in the Anglesey flock fell from 23 on 21 December to 20 the next day, interesting because on 23 December, Tom Kistruck reported that the Dyfi flock increased from 24 individuals to 27! As ever, we struggled to obtain counts from within the nominated international count periods for four sites in autumn and ten regular resorts in spring, for which we substituted missing counts from other months in the same season (shaded grey in Table 2), amounting to 153 birds in autumn (contributing 1.5% of the total) and 457 in spring (4.7%).

Overall, the general trend for declines in numbers at many resorts resulted in a depressing 17.3% decline in numbers of Greenland White-fronted Geese wintering in Britain in spring 2022 to 9738 compared to the previous spring count of 11776 the previous year. This was in no small measure due to the decline in numbers on Islay where the spring count fell by 23.0% between the two spring counts,

contributing 1581 geese to the difference in spring census totals between the two years (2038, i.e. accounting for 77.6% of the absolute difference between years). This fall is seen in the context of the recent trends in autumn and spring counts since 1982/1983 in Britain in Figure 1.

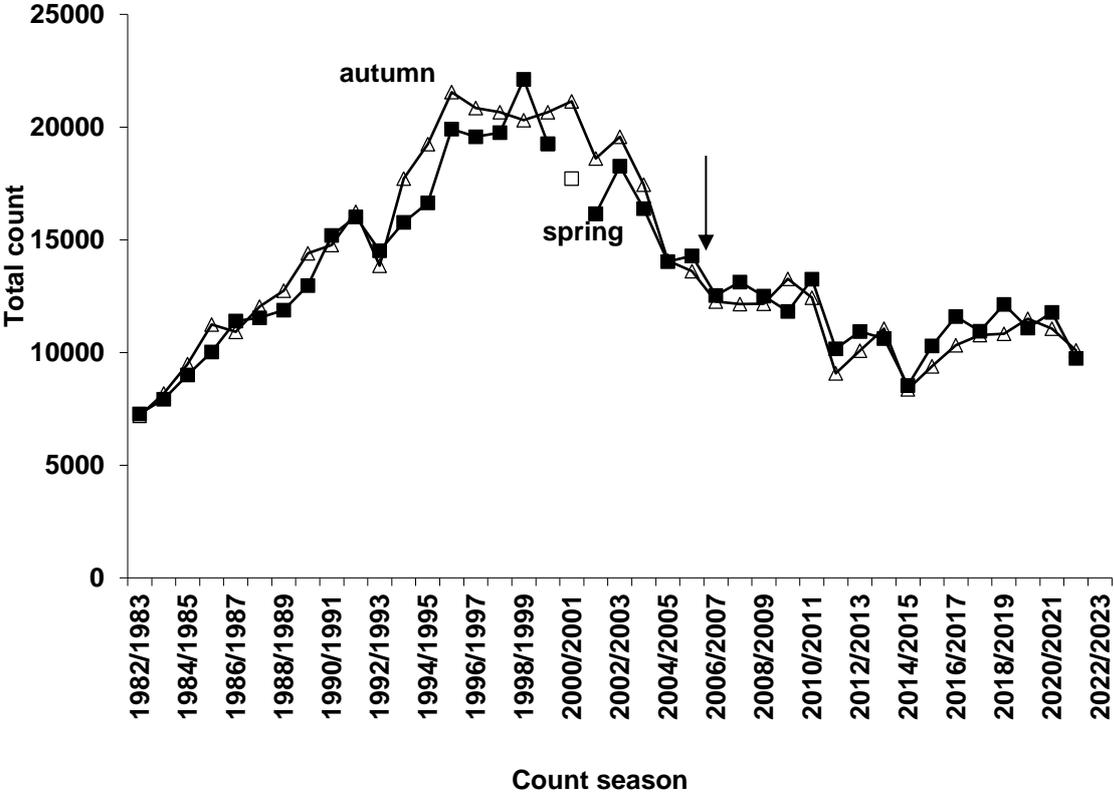


Figure 1. Counts of Greenland White-fronted Geese in Britain, 1982/1983-2021/2022, showing autumn (open triangles) and spring (filled squares) census results for each season. The value for spring 2001 (unfilled square) was missing on account of the outbreak of Foot and Mouth Disease that year and was therefore estimated from previous counts. Vertical arrow indicates the start of the hunting ban in Iceland in autumn 2006.



Greenland White-fronted Geese in snow covered stubble, Wexford Slobs

Photo: Alyn Walsh

Table 2. Summary counts of Greenland White-fronted Geese in Britain 2021/22

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 11-15 Dec	DEC	JAN	FEB	MAR	SPRING CENSUS 5-9 Mar	APR
ORKNEY										
Loons			72	85	85	85	44	60	85	
Mainland, other			2							1
Sanday							1			
CAITHNESS										
Westfield			98	114	114		43	23	114	17
Loch of Mey			148	132	152	153	153	155	155	
WESTERN ISLES										
Barvas/Shawbost, Lewis				5					5	
Benbecula			61							
Kilpheder/Askernish, South Uist	166			6		6	7	14	7	
Loch Bee/Kilaulay, South Uist			85	152	152	126		101	101	
Eoligarry/Allasdale/Cleat/Bruerish, Barra		2	2	19	19	20			20	2
INNER HEBRIDES										
Kilmuir, Skye			9	9		8			8	
Broadford/Pabay, Skye			18	18					18	
LOCHABER/NORTH ARGYLL										
Muck/Eigg										
Loch Shiel/Claish Moss		86	87	94	94		109	87	87	
Lorn: Benderloch			36	36	36		30	35	35	
Lorn: Appin			8	8			10	7	10	
Lismore			100	80		91	99	108	108	55
Tiree			663	668	668	814	910	945	945	
Coll			121	130		133		79	79	
Assapol, Mull				0		5		5	5	
Fidden Mull						3				
SOUTH ARGYLL										
Colonsay/Oronsay		92	134	134		103	70	39	70	2
Jura: Loch a'Chnuic Bhric				13	13				0	
Jura: Lowlandman's Bay				0					0	
Danna/Kiels/Ulva			80	159	159	186	152	145	145	
Moine Mhor			0	0	0	5	5	5	5	
Rhunahaorine			462	510	510	408	363	386	386	
Machrihanish			1453	1647	1647	1392	1358	1182	1182	
Clachan			99	90	94	130	90	84	84	
Gigha			64	100	100	137		27	27	
Glenbarr				63	63	50		38	38	
Isle of Bute				125	125		120		120	
Endrick Mouth, Loch Lomond		65	197	180	170	225	126	208	208	
ISLAY										
			6956	5215	6801		6154	5297	5297	
DUMFRIES & GALLOWAY										
Loch Ken		60	121	127	136	133	131	156	161	26
Stranraer		95	128	120	168	176	176	175	175	47
WALES										
Dyfi Estuary			24	24	24	24	24	24	24	
Cors Ddyga, Cefni valley, Anglesey			23	23	23			20	20	
ENGLAND										
Grindon Lough, Northumberland				1	1	1	1	1	1	1
OTHER IRREGULAR SITES (carried over from next table)										
England combined				7					3	
Scotland combined				4					7	
Wales combined				0					3	
TOTALS										
Rest of GB less Islay				10098					9738	
Rest of Scotland less Islay				4883					4441	
England				4828					4390	
Wales				8					4	
				47					47	

Table 3. Summary counts of Greenland White-fronted Geese at irregular sites in Britain 2021/22

	SEP	OCT	NOV	AUTUMN CENSUS	DEC	JAN	FEB	MAR	SPRING CENSUS	APR
OTHER IRREGULAR SITES										
Scotland										
Papa Westray, Orkney			4							
Orphir, Mainland, Orkney			2							
Steinish, Lewis			1							
Luskentyre, Harris		1								
Hirta, St Kilda		1								
Loch Bhrusda, Bernaray				1	1					
Embo, Sutherland		2	1					1	1	
Resolis, Easter Ross			1							
Jermimaville, Easter Ross			2							
Udale Bay, Easter Ross		2	4			1	1	1	1	1
Nigg Bay, Easter Ross	1									
Loch Eye, Easter Ross		1	1							
Munlochy Bay, Easter Ross	1		1							
Beauly, Inverness			1			2				
Easter Dalaziel, Inverness		1								
Loch Flemmington, Inverness		1								
Forres, Moray							1			
Insh Marshes, Strathspey			9							
Loch of Strathbeg, Aberdeenshire						1	2			
Tarland, Aberdeenshire								1		
Ratray, Aberdeenshire			1	1	1					
Craighill, Aberdeenshire								1		
Loch of Skene, Aberdeenshire					1					
Kintore, Aberdeenshire						1		1	1	1
Montrose Basin, Angus		1								
Letham Flood, Fife								1	1	
Balgray Reservoir, Clyde				1	1			1	1	
Shiskine Valley, Arran						5				
Fail Loch Ayrshire					2					
Hunterston Sans, Ayrshire						2				
Blairbowie Farm Flash, S Ayrshire							1	1		
Balgray Reservoir, Renfrew					1	1	1	1	1	
Various sites, Stirling		1	1	1	1					
Medwin Pools, Lanark		1	1							
Loch Connell, Dumfries & Galloway								1	1	
England										
Kirkbride/Angerton, Cumbria				4	4	4				
Wark, N Tyne							1			
Druridge, Northumberland						1				
Myerscough Quarry, Lancashire							1	1	1	1
Hightown/Plex Moss area, Lancashire							1			
Crossens Marsh, Merseyside					1			1		
Martin Mere WWT, Merseyside		1	2							
Doxey Marshes, West Midlands							1			
Whitmore, Staffordshire					1	1				
Doxey Marshes, Stafford						1	1			
Slimbridge, Gloucestershire			3	3	3	3	3	2	2	
Hollesley, Suffolk					1					
Wales										
Llanfrothen, Glaslyn, Meirionnydd						3	3	3	3	
Tywyn, Gwynedd						23				
RSPB Morfa Dinlee, Gwynedd										1
Cors Caron, Ceredigion						1				
TOTALS										
Scotland		12	30	4	8	13	6	10	7	2
England		1	5	7	10	10	8	4	3	1
Wales		0	0	0	0	27	3	3	3	1
Norway combined		15	15	0	0	0	0	0	0	0

COUNTS FROM IRELAND

Monthly count coverage was achieved throughout Ireland for the majority of the flocks during 2021/22, with excellent coverage at the numerically important sites (Table 4). As has been the case also in Britain in recent years, in many areas, it seems increasingly difficult to locate the entire flock during the March international count period. Many observers (again as in Britain) were only able to find a proportion of the numbers counted in February for their flocks, with the result that these counts were substituted for the International count period. Local counters were confident that the birds had remained, they just were more likely to fragment and difficult to find. Despite this, numbers at many down country sites surprisingly held up quite well, despite the poor breeding success after summer 2021 (see later)

Perhaps the most extraordinary news came with the discovery of a previously completely unknown flock in the very extreme north of Ireland. As you can read later in this report, Hazel Watson and Ric Else reported the regular occurrence of a small flock of wintering Greenland White-fronted Geese that roost overnight on the loughs of Rathlin Island (within sight of the Mull of Kintyre of course) and which commute daily to feed during daylight on the mainland to the south, regularly commuting back and forth. Hazel and Ric reported 20 there this season, but their meticulous records show the presence of geese in previous years during their residence on the island and it is intriguing to speculate on how long this flock has been present in this area.

After a rather disappointing spring count of 899 at Loughs Foyle and Swilly in 2021, the substituted February count of 1419 there in spring 2022 represented a healthy increase and a better representation of numbers present. Numbers also increased modestly at other Donegal sites, from 95 to 119 at Dunfanaghy and from 68 to 72 on the Pettigo Plateau, but sadly the decline continued at Sheskinmore with just 17 in spring 2022 (but midwinter peak of 20) compared to 23 in spring 2021. Counts lacking from Lough Macnean were substituted with counts from last winter. Numbers at Stabannon Co. Louth dropped from 24 to 20, but the tiny numbers in Mayo held up with 41 counted at Lough Conn in March 2022 (compared to 36 last season), 9 on the Bog of Erris (as per last winter) and 22 at Carrowmore (versus 17 last year); unfortunately none were counted in the Owenduff catchment in winter 2021/22. Also encouraging were increases at the important Errif and Derrycraff complex that supported 115 Greenland White-fronted Geese in March 2022 compared to 69 (and consistently lower number throughout) in the previous winter. Numbers also increased from 29 counted in Connemara, mostly using the bogs there, in spring 2021 to 33 in 2022.

Nine birds were present for most of the winter at Tullagher, as per the previous winter, but because there were no counts from the North County Clare complex, the count of 45 has been substituted for that flock for spring 2022. Numbers increased slightly at the important Lough Gara flock, while lower down in flood lands of the Shannon River system, numbers changed relatively little on the River Suck (84 in 2022 compared to 87 last spring) and the Little Brosna (160 compared with 132). Numbers at the Midland Lakes complex also held up with 280 counted there compared to 270 in the previous winter.

Numbers at Wexford in spring 2022 totalled 5361, which represented a 14.4% decline on the previous year when 6262 were counted there. The Wexford total stayed consistently around the 5300-5400 level throughout the winter. Overall, therefore, the total number counted in Ireland fell by just 3% from 8410 in spring 2021 to 8289 in 2022, thanks to the modest increase in numbers elsewhere in Ireland, which actually rose from 2148 to 2928 between the two years.

At 16 sites, difficulties finding all or some of the geese during the spring international count window partly due to covid-19 restrictions, resulted in the substitution of counts from dates outside the spring international count period (shown shaded in Table 3), making up 28.4% of the Irish spring total. Counts from Lough Macnean and North County Clare were missing and had to be substituted with numbers from last year. The remaining missing counts were substituted with counts from other dates in February (including the large flocks on the Foyle/Swilly and those of the lower Shannon catchment), but we remain confident that these counts are a better reflection of birds present than reflected in the March counts for these sites.

Table 4. Summary counts of Greenland White-fronted Geese in Ireland 2021/22
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
Rathlin Island		19	19	19	20			20	
DONEGAL									
Loughs Foyle & Swilly		647	540	540	912	1418	644	1418	
Dunfanaghy		118	72	40	72	48	119	119	
Sheskinmore Lough	4	18	18	18	17	20	17	17	
Pettigo	25	65	72	0	72	50	49	72	
NORTH CENTRAL									
Bunduff									
Lough Macnean			105					113	
Caledon									
Lough Oughter									
Stabannon			20				20	20	
MAYO									
Lough Conn	20	41	41	41	6	29		41	
Bog of Erris		9	9	9				9	
a. Mullet	0	0	0	0	0	0	0	0	
b. Carrowmore		21	21	17	26	22	7	22	
c. Owenduff			8	8				8	
MAYO/GALWAY UPLANDS									
Errif & Derrycraff		106	115		115		62	115	112
Connemara			33	33				33	
GALWAY LOWLANDS									
Rostaff & Killower		68	68		50			68	
Lower Lough Corrib									
Rahasane turlough		61	72	72		67		67	
CLARE/LIMERICK									
Tullagher		9	9	9	9	9	0	9	
North County Clare			42					45	
SHANNON HEADWATERS									
Lough Gara		120	126	126	107		117	117	
MIDDLE & LOWER SHANNON									
River Suck			84		0	84	77	84	
Glenmaddy		132	133	133	73	91	86	91	
Little Brosna			187	187	160	160	28	160	
MIDLANDS									
Midland lakes			230	230	280	280		280	
SOUTH WEST									
Killarney valley									
SOUTH EAST									
Wexford North Slob	1172	4692	5359	5359	5335	5430	5073	5073	
Wexford South Slob	0	0	0	0	0	0	270	270	
Tacumshin		0	0	0	0	0	0	0	
Cahore		0	0	0	0	0	18	18	
COUNT TOTALS									
Ireland without Wexford			7383					8289	
Wexford			2024					2928	
			5359					5361	



Greenland White-fronted Geese at Rhunahaorine, Mull of Kintyre

Photo: Ian Francis

THE INTERNATIONAL TOTALS

The Irish totals comprised just 5361 counted at Wexford added to the 2928 geese counted elsewhere in the rest of Ireland, which, together with the British totals, gave a global total of 18027 Greenland White-fronted Geese in spring 2021, down by 10.7% on 20186 counted in spring 2020 and the lowest spring count since the 1984 spring count (17537), which was the second lowest count ever since the start of coordinated counts (of 16451 in the first ever count in spring 1983, Figure 2).

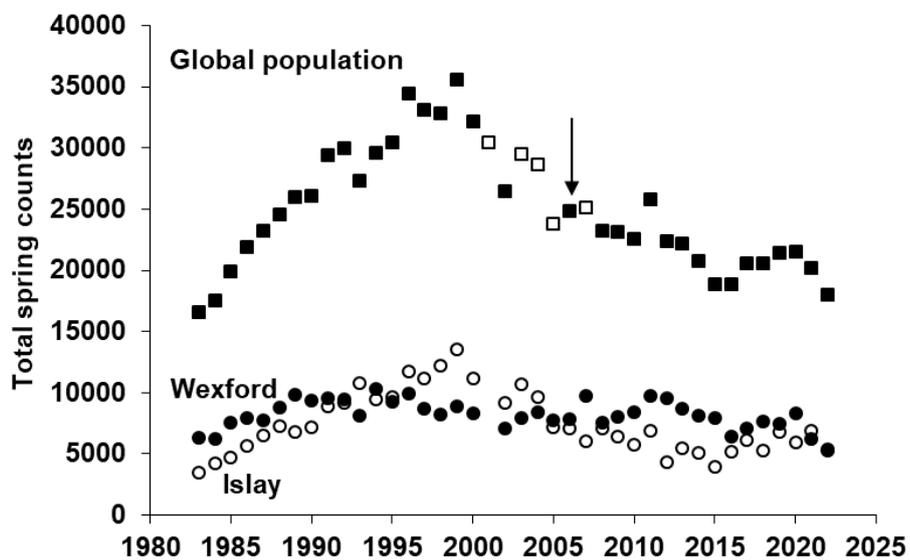


Figure 2. Spring counts of Greenland White-fronted Geese from Wexford Slobs and Islay and the global population count, 1983-2022. Values for the total population size are missing in some years when complete coverage could not be achieved (open squares, for which estimated counts based on previous counts have been substituted). Values for spring 2001 were missing on account of the outbreak of Foot and Mouth Disease that year and were therefore also estimated from previous counts. The arrow marks the point at which autumn hunting in Iceland was stopped in 2006.

AGE RATIOS IN BRITAIN

We are again deeply indebted to our many meticulous observers for sampling age ratios and brood size data for such a high proportion of the British wintering Greenland White-fronted Goose flocks in 2021/22 (see Table 5). Many thanks for a sterling effort. The annual addition of first-winter birds to the population makes a considerable difference to overall numbers that return to the wintering grounds, although of course this is also affected locally by the processes of mortality, immigration and emigration to shape between year changes in flock size.

Table 5. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Britain 2021/2022.

Site	Percentage young	Aged sample	Mean brood size	Families sampled
Orkney	9.41	85	2.00	4
Forss Water, Caithness	23.47	98	4.60	5
Loch of Mey, Caithness	16.44	146	3.00	8
Tiree	8.80	466	2.05	20
Coll	26.74	86		
Ardnacloch, Appin	0.00	8		
Lorn, Benderloch	0.00	36		
Danna	14.40	125		
Clachan	12.50	48	1.20	5
Rhunahaorine, Kintyre	17.72	158	1.83	12
Machrihanish, Kintyre	7.23	249	1.50	12
Gigha	36.36	22		
Islay	10.54	3321	2.70	105
Jura, Inver	0.00	8		
Loch Ken	7.44	121	3.00	3
Stranraer	15.63	128	2.86	7
Endrick Mouth	6.49	185		
Anglesey	17.39	23	4.00	1
Dyfi Estuary	29.17	24	2.33	3
Britain, excl. Islay	12.35	2016	2.28	80
OVERALL	11.22	5337	2.51	185

Following the impressive reproductive success of Greenland White-fronted Geese following the 2019 summer, the proportions of young after the 2021 summer were more like that of summer 2020, i.e. a little below average. On Islay, a sample of 3321 birds found just 10.5% young (Table 5) below the average of 13.5% for the period 1982-2021 and compared to 11.5% after the 2020 breeding season. However, age ratios elsewhere were slightly better with 12.4% among 2016 geese aged, close to the 12.8% average for the same 39 years, giving an overall value of 11.2%, lower than the 14.5% following the previous year. There is no long term trend in reproductive success on Islay back to 1962 ($P = 0.21$), nor for the annual compounded reproductive success at sites away from Islay elsewhere in Britain back to 1982 ($P = 0.13$, see Figure 3). Mean brood size was 2.51 overall based on 185 families sampled from many sites, similar to 2.41 the previous year, including a mean of 2.70 on Islay ($n = 105$) compared to 2.28 elsewhere ($n = 80$, compared to 2.64 and 2.27 respectively after the 2020 breeding season).

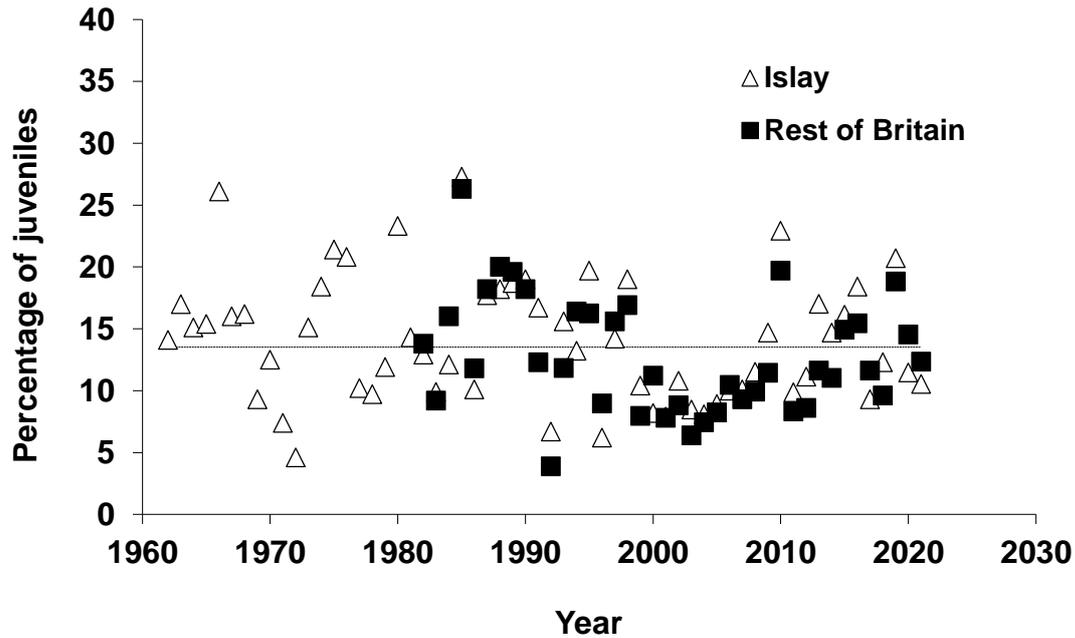


Figure 3. Age ratios sampled among Greenland White-fronted Geese at Islay 1962-2021 (open triangles) and compiled from other sites in Scotland and Wales, 1982-2021 (solid squares). The horizontal dotted line indicates the average percentage young among samples from Islay for 1962-2021.

AGE RATIOS FROM IRELAND

Breeding success following the 2021 summer among flocks returning to Ireland was disturbingly low with just 4.9% first winter birds among 2577 birds sampled at Wexford and 8.9% from 539 sampled elsewhere in Ireland, resulting in a dismal 5.6% young overall (Table 6). There has been a significant decline in the percentage young among birds returning in autumn to Wexford over the period 1970-2021 ($P < 0.001$) as was the case for the percentage young sampled at flocks elsewhere in Ireland over the period 1982-1996 and 2007-2021 inclusive ($P < 0.001$, see Figure 4). Mean brood size following the 2021 breeding season at Wexford was low at 2.17 (compared to 3.26 last season) based on 54 broods as elsewhere Ireland with a mean of 2.42 ($n = 12$, compared to 3.0 last season, Table 6).

Table 6. Summary of age ratio determinations and brood sizes for Greenland White-fronted Geese wintering in Ireland 2021/2022.

Site	Percentage young	Aged sample	Mean brood size	Families sampled
Ballylawn, Lough Swilly	12.38	202	2.50	10
Sheskinmore	0	17		
Pettigo	10.00	40	2.00	2
Midland Lakes	6.79	280		
Wexford	4.93	2577	2.17	54
Ireland, excl. Wexford	8.91	539	2.42	12
OVERALL	5.62	3116	2.21	66

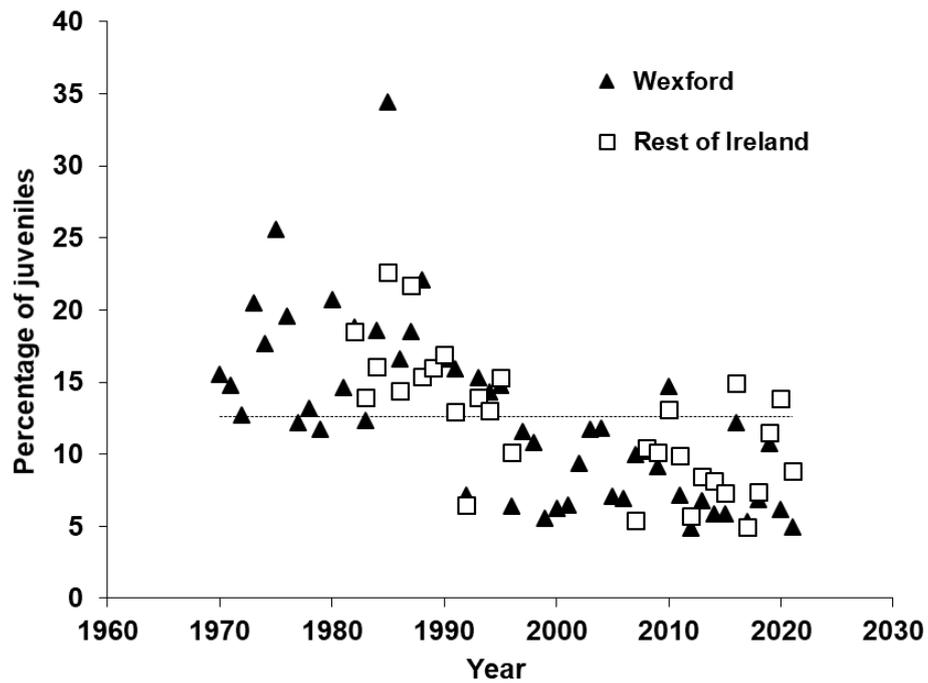


Figure 4. Age ratios sampled among Greenland White-fronted Geese at Wexford 1970-2021 and compiled from other sites elsewhere in Ireland for years in which there exist sufficient data. The horizontal dotted line indicates the average percentage young among samples from Wexford for 1970-2021.



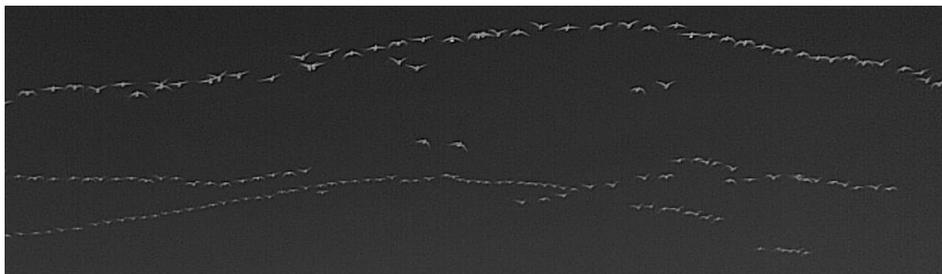
Greenland White-fronted Geese Wexford Slobs

Photo: Alyn Walsh

AVIAN INFLUENZA

With so many bad news stories in the news relating to mass deaths from Avian Influenza among the wintering Barnacle Goose population on the Solway and the horrendous deaths of uncountable Gannets, terns, Great Skuas and so many other species, we have been concerned about whether Greenland White-fronted Geese would show signs of additional mortality from this source. Thankfully to date, there is no evidence of any serious infection and death among the population. In November 2021, a juvenile was picked up sick, but alive near the Raven roost and brought to the Wexford Slobs Reserve. It was suspected to be a case of Avian Influenza and was handed over to the Department of Agriculture, Food and the Marine, where it was euthanased and later tested positive. This was the only known case of Avian Influenza in the population in winter 2021/22 and there was mercifully no further evidence of subsequent casualties, despite the crowding of many thousands of geese together every night on the shoals and banks in Wexford Harbour to roost. Likewise despite numbers of Barnacle Geese succumbing along the coast and offshore islands of Sligo and Donegal, as well as with infected Whooper Swans and Greylag Geese at Lough Swilly in Ireland, there were no reports of mysterious deaths and consequently no positive confirmations from corpses that Greenland White-fronted Geese were affected. Whether Greenland White-fronted Geese have become immune or mortality occurred undetected out of sight is difficult to determine, but we cannot help but wonder if the substantial drop in overall numbers between spring 2021 and 2022 could in some way be explained by unseen mortality from Avian Influenza or any other source of extra mortality in addition to the demonstrably poor reproductive success, especially among birds wintering in Ireland. We can only but cross our fingers that the population has not had to endure additional mortality from this deadly and persistent disease in the way that many less fortunate populations have in the last year, although generally numbers returning in autumn 2022 with very few young yet again give no reason for optimism.

We would ask you all please to keep an eye open in the coming winter for sick, dying or dead geese in your flock, or indeed any avian mortality in the vicinity of flocks, and please let us know if you can see or think that this affects Greenland White-fronted Geese in any way. We can only reiterate the advice of BTO when you find a bird in the UK. If you do encounter unusual cases of mortality or sickness in wild birds, particularly multiple cases please call the Defra helpline on 03459 33 55 77 (Mon-Fri 8am to 6pm) and select option 7. In Northern Ireland, wild bird mortality incidents should be reported to the DAERA Helpline: 0300 200 7840. Please report finding any number of dead wild waterfowl (swans, geese or ducks) or other dead wild birds, such as seabirds (including gulls) or birds of prey. Helpline staff will advise you on whether a response is required e.g. whether the bodies be collected by a representative for testing; not all birds are tested, but collating sightings may reveal patterns of mortality. Always avoid touching dead birds, invert a plastic bag over your hand and pick the bird up through the plastic. Check if the bird is ringed, if so, report the ring details to the BTO (www.ring.ac), then draw the bag over your hand and tie it up and dispose of it in your usual household waste, then thoroughly wash your hands with soap and water. In Ireland, the Department of Agriculture, Food and the Marine (DAFM) has the responsibility for avian influenza testing in Ireland. NPWS is already providing expert advice to DAFM in relation to Highly Pathogenic Avian Influenza and cases in wild birds. NPWS urge members of the public to avoid coming into close contact with any dead/injured wild bird. Please notify DAFM of any suspected avian influenza cases via the Avian Check App or alternatively, please call the Avian Influenza Hotline at 01 607 2512 (or 01 492 8026 outside of normal office hours). Detailed information on Avian Influenza in Ireland is currently available on the DAFM and Gov.ie websites. This includes their most recent overview of the situation with regards to Highly Pathogenic Avian Influenza in Ireland.



Wexford geese departing late evening for the Raven roost revealed by thermal image camera

Photo: Alyn Walsh

ANOTHER NEW CONFIRMED GREENLAND WHITE-FRONTED GOOSE FLOCK! RATHLIN ISLAND, NORTHERN IRELAND

We came to live on Rathlin Island in late March 2017, when we started work at the RSPB Rathlin West Light Seabird Centre, helping visitors to enjoy the spectacular sight of many thousands of nesting seabirds from the unique setting of an upside-down lighthouse. Anytime we were not looking at seabirds, we were out and about recording as much as we could of the island's other birds. Each year we have compiled a Rathlin Bird Report covering bird sightings on the island, and these reports are all available on our blog: <https://rathlinstickybeak.wordpress.com/2021/02/13/rathlin-bird-report-2020/>

Our first encounter with White-fronted Geese on Rathlin was on 6 April 2017, when we saw two birds flying off towards the mainland. Since then, we have had many more observations of similar morning movements, and occasional sightings of a flock returning at dusk. Our observations show that we have a small regular winter flock on Rathlin that apparently commutes daily to the mainland to feed, then returns to roost overnight on the island. In 2017, this resident flock numbered a maximum of nine birds, but we observed up to 14 in 2018, and up to 15 for the next couple of winters. During the winter of 2021/2022, we saw up to 20 together, including eight first winter birds.

Almost all our observations of the White-fronted Geese have been seeing them in flight over Kinramer (55°17'52"N 6°15'27"W), usually early in the morning, travelling in a SW direction across to the mainland. We have looked out for them on many days and seen them making this movement in a very consistent pattern. It has been more difficult to observe them on the return leg in the evening, as we have only seen or heard them arriving back on Rathlin when it is almost dark. The geese roost overnight on, or near Loughnanskan (55°18'18" N 6°15'08"W, also known as Cleggan Lough), or just to the east of this area. Sometimes, the geese spend at least part of the day there too, as we have occasionally seen them doing their commute in the late morning. Only a couple of times have we come across them on the ground, and invariably they have immediately taken off and disappeared. The land around there is mostly rough grassland, with some small loughs. We would need to try watching from a hide and/or use night-vision binoculars to get more of an idea of where they are and to what they get up to at night.



Greenland White-fronted Geese flying directly over as they leave Rathlin for the day.

Photo: Ric Else

Although we have now seen the geese during six consecutive winters, and have observed them making their daily trips to the mainland throughout this time, up to January 2022 we had very little information about where exactly they spend their days. We had been told that, in the past, some White-fronted Geese had been recorded in the area around Dervock (55°7'24" N 6°28'09"W), which fitted well with the regular direction of travel that we had observed, but we knew of no recent local sightings on the north Antrim mainland. Otherwise, the nearest known wintering resort of Greenland White-fronted Geese is on the Foyle/Swilly, which appears to be too far from Rathlin (more than 50km) for daily commuting.

So, on 24 January 2022 we attempted our own wild goose chase on the mainland. In the early morning, we positioned ourselves at a chilly clifftop viewpoint looking back across to Rathlin, and right on schedule the familiar flock of 20 came into view, winging their way across from the island. They disappeared from sight heading inland, and we set off in pursuit, zigzagging along unfamiliar country lanes surrounded by suitable looking grass fields, all the while thinking that surely this would be like looking for a needle in a haystack. Nevertheless, at the first convenient stopping place, between Lagavara and Maghernahar, we parked up and immediately spotted our 20 White-fronted friends just a few hundred metres away! Moreover, they were still present that afternoon when we checked again before returning to Rathlin. Presumably, they do roam more widely in that area, so there remains more to learn about their activities on the mainland, but at least we now have one more piece of the jigsaw puzzle.



Some members of the Rathlin flock making their way to the mainland on 11th April 2020. By this date in the spring, most of the flock had already departed to Greenland. Photo: Hazel Watson

Another significant event in our White-fronted Goose watching occurred in January 2022 – we moved from our cottage on their daily flight path to another part of the island. Initially, we thought that this meant we would have fewer casual encounters with the geese close to home. However, since moving, we have observed the same flock of geese occasionally visiting Ushet Lough (55°16'12" N 6°11'28") at the south end of the island, so it has perhaps also opened up opportunities to understand more about their use of habitats here on Rathlin.

We have compiled the following summary of our records of wintering White-fronted Geese:

Winter 2016/2017

We only moved to Rathlin in late March 2017, but two flying SW early on 6 April was probably about the last of the White-fronted Geese for that winter.

Winter 2017/2018

Four were present during the day near Loughnanskan on 14 November. Then we saw a regular pattern of up to nine moving between Loughnanskan and the mainland in late November and through December. A flock of 14 was regularly seen doing the daily commute from Loughnanskan to the mainland from January to 5 April.

Winter 2018/2019

There were no sightings in the early part of the winter, but throughout January, up to nine were regularly seen commuting from Loughnanskan to the mainland. This number increased to 15 from February to 31 March. The last four were seen doing the same journey on 12 April.

Winter 2019/2020

Nine were seen at Loughnanskan on 29 November. Fifteen were regularly seen commuting from Loughnanskan to the mainland from January to 1 April. The last five were seen doing the same journey on 11 April.

Winter 2020/2021

Five were seen a few times near Loughnanskan in November. Eleven were seen commuting regularly from Loughnanskan to the mainland during December. Twelve were regularly seen commuting from Loughnanskan to the mainland in January and February. Richard Donaghey reported seeing a flock of seven flying towards Rathlin from White Park Bay in the evening on 21 April. This was later in the spring than we have seen them in previous years, and perhaps these were just birds on passage rather than Rathlin's wintering flock. Richard also mentioned having looked for White-fronted Geese around the Bush valley but with no luck.

Winter 2021/2022

Eleven were doing the regular journey on 10 December. We then saw 19 regularly throughout the rest of December, increasing to 20 on several dates in January. On the morning of 1 March, 20 White-fronted Geese were seen flying to the south end of the island and a short time later sighted on Ushet Lough. This was our first definite sighting of the geese away from their usual haunts at the west end of the island, but an earlier unconfirmed sighting suggests this was not a one-off.

In addition to the wintering flock, we also see occasional birds on passage in spring and autumn. These either just pass straight overhead or make only a brief stop on the island.

Prior to 2017, we know that there was a smattering of records of White-fronted Geese on Rathlin, but we do not have much on the details and we suspect they were probably mainly passage sightings. It is unlikely there are many records at all for the western part of the island during the winter months, as there have rarely been ornithologists or other observers present in this part of the island before. It is possible that the White-fronted Geese have only recently adopted Rathlin as a regular site, but it would not surprise us if they have been going about their routine here unnoticed for a long while. Their roosting area is well away from any roads or paths, and they usually leave early in the morning and only return at nightfall. It is really only because we happened to live right on their flight path and are frequently out birding early in the mornings that we have managed to uncover the secret of these most intriguing and stealthy travellers.

Hazel Watson and Ric Else

THE RECENT STATUS OF THE GREENLAND WHITE-FRONTED GOOSE IN MEIRIONNYDD, NORTH WALES.

Despite the proximity of the county to wintering flock on the Dyfi, the Greenland White-fronted Goose remains very scarce in Meirionnydd away from the Dyfi floodplain on the inner northern shore of the estuary. Although Forrest (1907) described the White-fronted Goose as the most common goose species on Dwyryd/Glaslyn, he does not really explain whether that translated to regular wintering numbers. Certainly this area continues to be the most frequent resort for the subspecies since 2011, but despite the assumption that the occasional birds seen in the Dwyryd/Glaslyn area are birds from the Dyfi flock, there does not seem any real evidence to support this. Three birds turned up in late January 2021 and remained in the area well into March in that winter, reminding us of the bird's relatively scarcity away from the Dyfi. In recent years, these have included a single bird with a limp that attached itself to a flock of Canada Geese at Glastraeth on 30 November 2012, which perhaps stayed couple of weeks after that (although no written records were ever submitted to that effect). Glastraeth forms part of the Dwyryd/Glaslyn estuary complex of which the Llanfrothen/Garreg/Pont Croesor (commonly known as the Glaslyn Marshes) also form a part. Glaslyn Marshes are an area of mainly reclaimed grazing marsh grassland providing grazing for dairy farms in the area. Until recently, management was of a relatively low level of intensity, but in recent years, the grassland has been improved and stone tracks constructed, although this does not seem to have had any effects on the wintering Whooper Swans of the area. Since then, two Greenland White-fronted Geese were reported from the Glaslyn Marshes from 7 February until 24 March 2013 with one staying until 16 April. A single bird was again reported on 27 October and 10 November 2013 on the Glaslyn Marshes, and while five at Pont Croesor (Glaslyn Marshes) on 29 March and one on 30 March the same year were not identified to race, the dates are very late for European White-fronted Geese, so although unassigned, these were potentially also of the Greenland race. Prior to this, the only other record is from 2007, when two Greenland White-fronted Geese joined the Canada Geese flock on the Broadwater on 14 December and remained for at least 13 days. Intriguingly, a Greenland White-fronted Goose marked with a gps tracking device on the Dyfi Estuary (Ceredigion) left there with three associates eight days after capture on 12 December 2016, crossed the Irish Sea to a known wintering site near Duleer, Co. Louth, then continued to Wexford Slobs, Co. Wexford (the most important wintering site for the population, supporting 7200 birds in 2016/17, Mitchell et al. 2018). It was seen there on 26 December and the tag showed it remained there until 9 March 2017, when it flew north-eastwards to stop off in the Dwyryd/Glaslyn area briefly before moving back to the Dyfi later the same day! This record confirms that at least some geese have knowledge of these four sites around Irish Sea coasts and move between them.

So, overall, although Greenland White-fronted Geese are common visitors to Meirionnydd on the grazing wet grassland to the north of the Dyfi estuary, away from this area the subspecies is not that common and almost never recorded elsewhere away from Dwyryd/Glaslyn, where the grazing meadows of the floodplain seem suitable for them. Meirionnydd still has relatively few birders and while some may go unseen elsewhere, the lack of extensive area of low intensity grazing elsewhere in the county means it is unlikely regular flocks go unseen. The formerly occupied site at Ystumllyn was apparently finally abandoned as a regular site in the in the late 1960s long after the draining of the lake there (Fox & Stroud 1985), but there have been no records from that area since. If the subspecies were ever to become a regular wintering guest away from the Dyfi, it seems most likely this would occur in the Dwyryd/Glaslyn complex somewhere.

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Jim Dustow

MORE NORTH AMERICAN WINTERING CANADA GEESE MARKED IN WEST GREENLAND, SUMMER 2022

During July 2022, I led a team of 10 people to catch a range of bird species over the course of 25 days in Isunngua, an area of central west Greenland, just north of the airport at Kangerlussuaq (67°01'N 50°41'W). This was a collaborative European Commission-funded wildlife and zoonotic disease research project called VEO (Versatile Emerging infectious disease Observatory, <https://www.veo-europe.eu>). The project required various samples taken from birds and their environment in West Greenland. Fortunately for VEO, significant GWGS know-how, necessary equipment stored in Greenland and my extensive familiarity with the region (this was my 11th visit!) provided the perfect means by which to do this.



Classic Isunngua lake-studded plateau area frequented by Canada Geese in central west Greenland

Photo. Huw Thomas

The team consisted of seven Brits, including two experts that had previously caught geese and other birds in the same area in 2014 with GWGS, two members from the Netherlands and a vet from Germany. As usual, the team would be entirely self-sufficient for this period of living in the wilderness!

It was a notable year in the GWGS study area with only two possible sightings of Greenland White-fronted Geese from field surveys throughout the entire period and none seen or caught on catch lakes. It was also notable for the appalling breeding year for Canada Geese in the study area, with juveniles observed on only five occasions. Lakes normally popular with Canada Goose families had few or no birds on them and the vast majority of sightings were of adults only. No juveniles were caught at all this year, thought to be caused by the unusually late spring in 2022 that seemed to cause many birds not to attempt nesting or for those that did delay or, in most cases, abandonment of nesting.



Result of a successful drive of flightless Canada Geese in Isunngua, July 2022

Photo: Huw Thomas

Nevertheless, the team managed to capture and ring (and sample) 104 adult Canada Geese as well as eight Mallard and good numbers of passerines (nine Wheatear, 172 Greenland Redpolls and 46 Lapland Buntings) and waders (one Purple Sandpiper and nine Red-necked Phalaropes). The 104 geese are the first injection of marked birds into the population by GWGS since 2014, although these included two retrapped birds from 2014 and one that was originally marked in the same area in 2009. A range of samples were taken including blood, swabs, faecal samples from the catch-pen, sediment samples from loafing areas at lakeshores and several samples of the local mosquitoes! These will be analysed by European VEO project partner institutions for a range of pathogens of interest including avian influenza and results will no doubt be published in due course. Meanwhile, as we write, sightings of 45 different marked Canada geese have already started coming in, with three reports from Newfoundland where the geese make first landfall in continental North America, 37 reports from Nova Scotia (including the re-trapped goose from 2009), 30 in New Brunswick, one on Prince Edward Island, one in Quebec and nine reports as far south as Maine, three in New Hampshire and five in Connecticut by 29 November 2022.



GZ6 captured on Lake L, Isunngua, 9 July 2022, already seen in New Brunswick, Canada in October 2022 Photo: Huw Thomas

This excellent hand-picked team worked hard! Seven people carried at least 370 kg of food and equipment to camp over two days, in addition to their own initial full packs. This was only possible because of excellent local support this year that moved everything by road and boat to within a couple of miles of camp. This meant the majority had to face the “Wall of Death” up-and-over ridge climb with heavy packs only the once – lucky blighters! There were some very long days, often 12 hours away from camp carrying equipment, surrounding and catching geese and given the generally low numbers, the team went for catches a little further afield. The longest day saw the team leave camp at around 8am on Wednesday and return at 1am Thursday! Two of the catches were successful despite one of two inflatable kayaks developing an air leak and then the repair failing on the second occasion! The team also adapted superbly when they were dispersed in the landscape to surround one lake only to discover that the birds, 27 Canada geese, had moved to a nearby lake overnight. Radios proved invaluable for re-directing the team in such a huge landscape and eventually, successfully trapping all of these birds.

We look forward to further sightings of marked geese and in time, the results of the samples analyses.

Huw Thomas

Huw Thomas has been involved with catching geese in Greenland with the Greenland White-fronted Goose Study since 2008.

IN MEMORIAM: ARTHUR THIRLWELL



It is truly impossible for me to know where to begin, when I try and write about Arthur Thirlwell, who sadly passed away on 10 October this year, just eight days short of his 90th birthday. Arthur had not only been involved with regular counting of the flock of Greenland White-fronted Geese at Loch Ken from the onset of coordinated monitoring in 1982/83, he had been stoically following their fortunes for many a long year prior to this. His knowledge of these geese was encyclopaedic and his respect for, and understanding of them unbounded.

Arthur was an incredibly astute observer of wildlife, shaped by his early interest as a teenager for ducks and geese, which he shot for the pot on the south side of the Solway Firth to supplement meagre family rations following the Second World War. In 1948, he moved from the Cumberland side of the Solway to Annan, where he became one of the most experienced wildfowlers on the northern marshes of the Solway. A chance encounter with Peter Scott in a trailer hide, whilst rocket-netting Pink-footed Geese on the Solway, forged a lifetime commitment not just to shooting wildfowl but contributing to their conservation through research, monitoring and management. He began to contribute to Mallard rearing programmes with wildfowling clubs, got involved with counting and studying the mythical Bean Goose flock that wintered in those days around Castle Douglas and with the creation of the then Wildfowl Trust reserve at Caerlaverock, began contributing to the monitoring programmes there, and reading leg rings on the Barnacle Geese. In 1975, Arthur and his family moved to Castle Douglas and it was then that he claimed his passion for Greenland White-fronted Geese was born. He immediately set himself the task of trying to understand the feeding distribution of the Loch Ken flock in relation to their roosts, and began making regular counts and sampling age ratios. When David Stroud instigated the first coordinated British survey in winter 1982/83, Arthur already had a good understanding of his local flock and was immediately able to contribute his unique knowledge of their ecology to the national picture. So it has been ever since, to the point where Arthur was one of our loyalist, steadfast and longest contributors to the count network, forty years of extraordinary dedication to the survey, never a year missed. This was despite the enigmatic habits of a flock that could be incredibly difficult to find. He tracked their increase from c.300 in the early 1980s to peak at (looking back) a remarkable 450 birds in 1997/98 and was of course saddened to watch and report upon their depressing decline to number around 160 birds by spring 2022.

Arthur was not just incredibly active with counting and aging his Loch Ken flock of Greenland White-fronted Geese. When Larry Griffin and Wildfowl & Wetlands Trust started catching the geese and marking them with collars at Loch Ken, Arthur was among the first to volunteer and help with recce-ing the sites, helping to bait, setting the cannon nets and catching of birds. Arthur had already been eagle

eyed at searching for marked birds among his flock, but now there was no stopping him. Suddenly he had collared geese among his own beloved flock and he rapidly came to know each of them as individuals not just by code (and his given nickname) but each by their field use, behaviour and character. He quickly recognised immigrants from elsewhere, including X0N (marked at Wexford and something of a wanderer between winters!) which Arthur swore blind called with an Irish accent. His contribution of collar readings to the resightings database was impressive, but so was his intimate knowledge of their characters.

I will so miss the frequent messages from Arthur that I so looked forward to in the past. He was such fun as well as a wonderful deep font of knowledge. His 48 dedicated years of close observations of the Loch Ken flock are unrivalled. In 2018, he himself reckoned he had driven over 20,000 miles following Greenland White-fronted Geese, enough to reach Greenland and back six times according to him! What incredible dedication! He knew his birds as no other and he made a truly massive contribution to our knowledge, not just of the Loch Ken flock, but also by being such inspiration to so many others to contribute to our understanding and their conservation. Thanks to Susan Smith for permission to reproduce this photo of Arthur in his absolute element.

Tony Fox

ACKNOWLEDGEMENTS

Every year, we continue to be inordinately grateful to a huge number of people who enthusiastically give up their own time and endless energy to count, age and read collars and leg rings on Greenland White-fronted Geese! Although we try and express our deep gratitude, it is hard for us to adequately thank you all for everything that you do for us. It is obvious that without your sacrifice, we would be totally unable to survey the numbers of wintering geese in this iconic population, nor would be able to use the annual assessment of breeding success to understand how reproduction balances mortality to understand annual changes in population size. The resightings of individually marked birds are not only fascinating in their own right, but enable us to estimate annual survival rates, reproductive success, site loyalty and many other features of these amazing birds. We really do mean it when we say an enormous thanks to you all for helping us yet again this year to keep tabs on the population and as ever, we express our very sincerely apologies to anyone that we have inadvertently left out in the following listings!

In Britain, those people who have kindly contributed data and information during 2021/2022 include: Paula Baker, Dave and Pat Batty, Yvonne Benting, Ellen Bird, John Bowler, Roger Broad, George Christie, Sue Clare, Andrew Dacre, Pete Dale, Steve Duffield, Ian Fulton, Larry Griffin, Robin Harvey, Brian Henderson, David Holden, Ian Hopkins, James How, Hannah Imlach, David Jardine, Tracey Johnston, Ben Jones, Dave Jones, Russell Jones, John Kemp, Tom Kistruck, Andy Knight, Catriona Laird, Alistair Laming, Morven Laurie, Mary Legg, Alan Leitch, Alison Leonard, Sinclair Manson, Kay-Leigh Marais, Paul Massey, David McCulloch, Rae McKenzie, Bob McMillan, Carl Mitchell, Mark Mitchell, Karen Munro, Brian Neath, Bill Neill, Alex Nichol, Alison and Donald Omand, Malcolm and Carol Ogilvie, Nicky Penford, Brian Rabbits, Bryan Rains, Alan Reid, RSPB staff on Anglesey, Andy Robinson, Chris Rollie, Hannah Sharratt, Pete Skinner, Julian Smith, Andrew Stevenson, David and Judy Stroud, Ash-lynn Tavener, Rachel Taylor, Arthur Thirlwell, Gareth Thomas, Niall and Rachel Tierney, Morgan Vaughan, Heather Vincent, Rob Vincent, Luke Wake, Catriona White, Hanna Wilde and Emily Wilkins.

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Stanley, Alec Schindler, Andrew Speer, Raymond Stephens, Sarah Stapleton, Dave Suddaby, Matthew Tickner, David Tierney, Martin Toye, Eamonn Twomey, Nickey Walsh, Alice Walsh, Mitch Weegman, and John Wilson.

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We are again very grateful for permission to incorporate data from BirdTrack and WeBS, kindly provided by the British Trust for Ornithology (BTO), with our sincere thanks to Ailidh Barnes and Neil Calbrade for organising the supply of data. BirdTrack is organised by the BTO for the BTO, Royal Society for the Protection of Birds (RSPB), BirdWatch Ireland, Scottish Ornithological Club and Welsh Ornithological Society. Data were provided by WeBS, a Partnership jointly funded by the British Trust for Ornithology, RSPB and Joint Nature Conservation Committee, with fieldwork conducted by volunteers. Although WeBS data are presented within this report, in some cases the figures may not have been fully checked and validated. Therefore, for any detailed analyses of WeBS data, enquiries should be directed to the WeBS team at the British Trust for Ornithology, The Nunnery, Thetford, IP24 2PU (webs@bto.org).

Thanks to 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, but also to Dave Tierney for his support. Thanks to SNH for site coverage throughout Argyll, especially to Tracey Johnston and Morven Laurie who so kindly helped with count data on Islay, to the counter teams on Kintyre and Islay and to all the contributors for their kind help in preparing sections of the report. Special thanks as ever to Dr Malcolm Ogilvie for his extensive age ratios and for wise counsel at all times. The census is only possible thanks to the financial support of the Joint Nature Conservation Committee under their UK Goose and Swan Monitoring Programme and we thank Kirsi Peck for her support and help during the past few months. Finally our thanks to Colette Hall and the Wildfowl & Wetlands Trust for their many years of support for our annual census up until 2020/21 under the WWT Swan and Goose Monitoring Programme.

Please be aware that the international census periods to count Greenland White-fronted Geese in the coming season are: **17-21 December 2022 and 11-15 March 2023**, but we welcome all counts from any dates, but the other monthly counts especially during the period: **19-23 November 2022, 14-18 January 2023 and 18-22 February 2023**.



A very rare view of Greenland White-fronted Geese from above - this from an aerial survey of Lough Ree! Photo: Alyn Walsh



Greenland White-fronted Geese, Rhunahaorine, Mull of Kintyre with Gigha in the background

Photo: Ian Francis



Greenland White-fronted Geese, Rhunahaorine, Mull of Kintyre

Photo: Ian Francis