

SPECIES FOCUS

Flagship species suffers decline

Greenland White-fronted Geese on the North Slob in Wexford, their main wintering ground in Ireland.
(Chris J Wilson)



Researchers seek explanations

The last ten years have seen Greenland White-fronted Goose numbers fall to historic lows for reasons that are not fully understood. **Olivia Crowe** investigates

“I’ve got a visual. We have them surrounded, there are nine and two kids, they’re on the west bank. Over.”
“Line-up! Now close in... Move it...”

These are the words, not of an advancing army, but of a bunch of goose researchers trying to round up and catch geese in west Greenland. But these are no ordinary geese. They are our Greenland White-fronted Geese, which travel over 3,000 kilometres, passing over the Greenland ice-cap, twice each year, to spend the winter in Britain (mostly western Scotland) and Ireland.

The Greenland White-fronted Goose should certainly be no stranger as it has flown many a flag as the BirdWatch Ireland (formerly Irish Wildbird Conservancy) logo for over forty years now. It is the smaller of the two main ‘grey goose’ species that occur here, the other being the Icelandic Greylag Goose. It is unmistakable by its bright orange legs, very conspicuous white face and broad black bars which cross the belly. They are known as “Specklebelly” in North America due to the salt-and-pepper appearance of their underside. A BBC World Service radio documentary in 2008 called Greenland White-fronts “one of the world’s most charismatic birds.” Anyone who has been fortunate enough to witness the mind-blowing, at times uncountable, gatherings on the Wexford Slobs would surely agree.

Changing habits

The Greenland White-fronted Goose, or Bog Goose as it was once known, was formerly scattered across peatlands in both Britain and Ireland. Traditionally, they were widely distributed in upland and blanket bog areas, which were rich in nutritious food plants such as white-beaked sedge and bog cotton.

It is widely thought that the ongoing destruction of peatlands since the late 1800s,

mostly from drainage, has resulted in this peatland specialist switching away from bogs to feeding on a variety of grasslands and crops, freshwater marshes and wet grasslands in recent decades.

Nowadays, most of the bogland flocks are extinct, and here in Ireland, Lough Nillan Bog in Donegal and the Killarney Valley in Kerry are just two examples of peatlands which are still occasionally used.

Greenland White-fronted Geese fitted with neck collars and leg rings are released during the 2008 expedition to Greenland.
— (Huw Thomas)



Wintering hotspots

The wintering "honey pots" are the Wexford Slobs in the southeast and the island of Islay off western Scotland, which together host two-thirds of the population. Elsewhere, smaller flocks, most of them of fewer than one hundred birds, are found scattered across western Scotland and the north, west and midlands of Ireland. Away from the Slobs, just over thirty flocks occur in a variety of locations around Ireland, with largest numbers at Lough Swilly in Donegal (up to 1,000 birds) and at the Little Brosna Callows on the Offaly/Tipperary border (almost 300 birds).

Like most of their close relatives (swans and geese) that spend the winter here, Greenland White-fronts are highly site-faithful. What is also very unusual, and perhaps unique to this species, is that many young birds remain with one or other of their parents for up to nine winters. We know this from resightings of birds that have been ringed, a practice that began well over thirty years ago.

The geese typically roost for the night on water, such as on a lake or the sea, where they are free from predators, and then feed by day in nearby fields or coastal marshes. This high level of site fidelity, which is possibly the greatest among this group of birds, means that they are extremely reluctant to move to other sites, even to other fields, if these become less favourable.

Ups and downs

Greenland White-fronted Geese have shown dramatic changes in numbers since coordinated monitoring began in Britain and Ireland during the early 1980s. The first major concern was expressed during the late 1970s when it was realised that numbers at several key wintering sites had declined quite dramatically. At this point,



Greenland White-fronted Geese on the North Slob, Wexford. – (Chris J Wilson)

Greenland White-fronts were legal quarry throughout their range, and substantial numbers were shot, especially in Ireland, where this was one of the few wild goose species that was available as a quarry species at that time.

The geese were also being captured and killed in their breeding areas, and were hunted illegally in Iceland in autumn and spring. As a result of the efforts of a few key individuals, including Major Robin Ruttledge here in Ireland, in highlighting the severity of the decline, the population was afforded protection from hunting in both Britain and Ireland by the early 1980s. A group of concerned goose enthusiasts, collectively known as the Greenland White-fronted Goose Study (<http://greenlandwhitefront.homestead.com/>), has since been closely monitoring the situation. Full surveys in autumn and spring have been undertaken each year in Britain and Ireland since the early 1980s. This tracked a recovery of Greenland White-fronts as the population more than doubled, increasing

from 16,500 in 1983 to a peak of more than 35,000 in 1999. The ban on hunting seemed to be working!

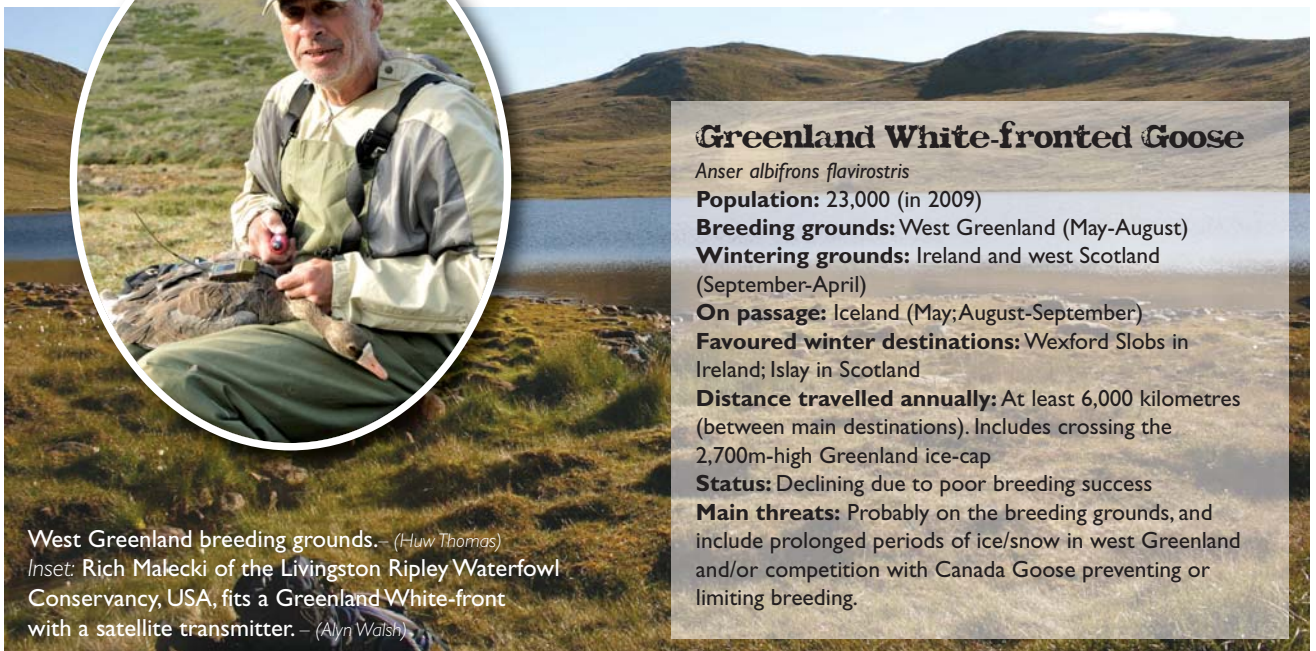
Alas, this peak was short-lived, and goose numbers began to fall once more. They have continued to decline to the present, to 23,000 birds in 2009, making this one of the smallest goose populations in the world.

In Ireland, it seems that most of the decline has taken place in the smaller, satellite flocks, with numbers in Wexford remaining roughly stable over the same decade.

Declining family size

The legal hunting of Greenland White-fronts in Iceland, which was taking up to 3,000 birds each year, has been banned since autumn 2006. This certainly alleviated some of the pressure, and numbers appeared to stabilise almost immediately.

However, the ultimate cause of the current decline is known to be chronic low productivity.



West Greenland breeding grounds. – (Huw Thomas)
Inset: Rich Malecki of the Livingston Ripley Waterfowl Conservancy, USA, fits a Greenland White-front with a satellite transmitter. – (Alyn Walsh)

Greenland White-fronted Goose

Anser albifrons flavirostris

Population: 23,000 (in 2009)

Breeding grounds: West Greenland (May-August)

Wintering grounds: Ireland and west Scotland (September-April)

On passage: Iceland (May; August-September)

Favoured winter destinations: Wexford Slobs in Ireland; Islay in Scotland

Distance travelled annually: At least 6,000 kilometres (between main destinations). Includes crossing the 2,700m-high Greenland ice-cap

Status: Declining due to poor breeding success

Main threats: Probably on the breeding grounds, and include prolonged periods of ice/snow in west Greenland and/or competition with Canada Goose preventing or limiting breeding.

In other words, the number of young birds making it out of Greenland and reaching our shores each winter is incredibly low. This productivity, measured as the proportion of young birds in the population, has declined from slightly more than 15% during the 'better' times to current levels of below 10%. This level is too low even to balance out the natural mortality in the population, never mind rebuilding its numbers.

It is also thought that the large majority, possibly as many as 80%, of adults do not breed each year. Certainly, during expeditions to Greenland in 2008 and 2009, large numbers of non-breeding adults were recorded, and Greenland White-front family groups were few and very small, most with between just one and three young birds per family.

The decline in productivity may be due to increasing late winter/spring snowfalls on the breeding grounds in west Greenland in recent years limiting nesting opportunities, or the result of inter-specific interactions on the breeding grounds with Canada Geese, or perhaps some combination of both.

As if the geese don't have enough to worry about on their breeding grounds, the additional threat of predation by Arctic Foxes and White-tailed Eagles is never too far away.

What is most worrying is the urgency with which we need to act to reverse this decline, and our limited control over the threats listed above, at least in the short term.

Canada Goose threat

Canada Geese began expanding their range from North America into west Greenland in the mid to late 1980s. This expansion could well have been assisted by climate change, with milder conditions creating appropriate nesting habitat for Canada Geese. These geese are bigger, bulkier and more aggressive than the Greenland White-fronts, so they are well able to push them out of the better nesting and feeding areas. This could be a critical factor affecting the condition of the White-fronts for breeding, especially during the spring, as good feeding is so important for bulking up after that long journey across the Greenland ice-cap.

Meanwhile, Canada Geese seem to be doing very well in west Greenland. Their numbers and range are increasing rapidly and, unlike the Greenland White-fronts, they seem to be having



Canada Geese and a Greenland White-front are released followed tagging. They are moulting and flightless. — (Alyn Walsh)

much better breeding success. Recent expeditions proved that Canada Goose families were very widespread and family groups quite large, with between five and seven goslings per group. Most of them winter in North America, though a few



The team prepares the goose collars. (Becks Denny)

stragglers reach Ireland.

Interestingly, we are now also seeing increasing numbers, albeit small for now, of Greenland White-fronts moving west during the winter, into North America, presumably following the return migration path of the Canada Geese. This could prove problematic, especially as it once again opens up the threat of hunting pressure, as Greenland White-fronts are not protected in North America.

Next steps

We previously reported (*Wings*, Summer 2009) on a workshop which took place on Islay in February of last year, which brought together fifty goose experts from throughout the flyway of this species. The aim was to share information and assessments of current threats, and develop an international Action Plan summarising the means to reduce or eliminate these threats. The Action Plan is due for publication in 2010.

The plan highlights that appropriate management of areas used by flocks in Ireland and Britain is critical to ensure that geese leaving each spring are in optimal condition for breeding.

We need to minimise any further contraction in range by ensuring that all wintering flocks are protected from disturbance and that their habitats are managed appropriately.

It is very important that we also make every possible attempt to protect the smaller, more vulnerable flocks and their habitats so that we don't end up with all of our eggs in the one basket here in Ireland, i.e., in Wexford.

However, heading the priority list in the Action Plan is the requirement for more research in Greenland to increase our understanding of the factors responsible for their low productivity.

So, it will be necessary for our researchers to head back to Greenland once again, to find ways of reversing this very worrying trend in the Greenland White-fronted Goose population.



Musk oxen. — (Huw Thomas)



Caribou calf. — (Huw Thomas)



Red-necked Phalarope chicks. — (Becks Denny)