

## FRIENDS OF THE SCOTSMAN /

# Global warming is here already for puffins – and it may wipe them out

This July I took a boat trip with my family to Lunga, the largest of the Treshnish Isles sitting in the Sea of the Hebrides between Mull and Tiree.

Lunga is famous for its puffins, the stocky little seabirds with a seemingly oversized multicoloured beak. On Lunga you can view the birds quite close to the burrows where they nest and watch them whirring above your head with their stumpy wings as they come into land after an exhausting fishing trip.

Some puffins will have travelled many miles, stopping at points to dive beneath the waves and hunt for sand eels, one of their preferred foods, before carrying a dozen or more back to the burrow in their serrated beaks.

We also watched the raucous colonies of guillemots and kittiwakes perched on the narrow ledges of Lunga's Harp Rock. However, not all seabird cities around our isles are doing well and the cliffs are becoming quiet.

Marwick on Orkney and Sumburgh Head on Shetland have seen declines in kittiwake numbers of more than 80 per cent in the past 30 years. A recent count of occupied puffin burrows at Hermaness in Shetland found declines of 69 per cent since 2002.

For a seabird, climate change is not a future problem, it's affecting them



**Jim Densham** urges people to call for stronger targets from the Scottish Government in its new Bill to cut emissions

now. Climate change is warming the oceans much faster than the land and is putting intense strain on the marine food web.

The North Sea has warmed by nearly 2C causing an influx of warm water plankton which are less nutritious to the sand eels which consume them. This means the sand eels caught by puffins, kittiwakes and other seabirds are smaller, fewer and less packed with the energy that a growing chick needs. This chain reaction in the food web is causing seabird populations to decline.

The IPCC report published last month had a stark warning about the effects on wildlife if we allow the planet to warm more than 1.5C above pre-industrial levels; we already have 1C of warming.

The IPCC experts showed that warming from 1.5C to 2C would result in twice as many plant species and vertebrate animals losing more than half of the space they can inhabit in the world. This range contraction would for some lead to extinc-

tion. Three times as many insects would be affected in this way at 2C compared to 1.5C. For many species, a world warmed by 1.5C will be bad but a world warmed by 2C will be much worse.

Fragile marine food webs, like those around Scottish coasts which puffins and kittiwake are part of, would experience much more disruption at 2C. Further afield coral reefs in tropical waters are particularly vulnerable to warming seas. In a 1.5C warmer world we will lose 70-90 per cent of coral reefs but at 2C virtually all will be lost. The warning for our marine world could not be clearer.

The Scottish Parliament is considering a new Climate Change Bill which aims to reset and strengthen our greenhouse gas emission reduction targets so that Scotland does its bit of global efforts to keep warming to no more than 1.5C.

The Scottish Government has proposed that we fix a 90 per cent reduction in emissions by 2050 but the headlines in the IPCC report



↑ Puffins are dependent on a diet of sand eels to raise their chicks but the fish are

becoming smaller because of the effects of global warming, leading to a decline in the number of nesting birds

are clear that by this date we need to be at net-zero emission. Net-zero means balancing small amounts of emissions with activities such as tree planting or good soil management which remove and store CO2 from the atmosphere.

RSPB Scotland is part of the Stop Climate Chaos Scotland coalition which is calling for this target of net-zero emissions by 2050 to be in the Bill along with a 77 per cent reduction in emissions by 2030. These targets, placed into our nation's laws, will help protect vulnerable wildlife from the worst effects of climate change.

We have a moral responsibility to the wildlife around us, like our precious puffins, to prevent global warming rising beyond 1.5C. We also have the moral responsibility to put in place solutions which don't harm wildlife, such as planting trees and locating windfarms in the right places.

The millions of wild species that we share the world with have done nothing to cause climate change but many are struggling now and some may never recover. If we act now in Scotland with a strong and ambitious Climate Change Bill we have a chance to prevent many more extinctions and ecosystem collapse.

You can add your voice for stronger targets by going to [bit.ly/SCCS-Act](http://bit.ly/SCCS-Act).  
*Jim Densham, senior land use policy officer – climate, RSPB Scotland.*



Pear trees may not feature in our land management – but partridges still benefit

Dr Dave Parish reports on moves to boost farm bird populations

It seems hard to believe that winter's blast is just around the corner – possibly days away although some of the trees are still clinging stubbornly to their leaves late into November.

At this time in 2010, and again in 2016, snow hit the east of the country with a vengeance, so by the time this appears in print we may already be in winter's clutches.

The Game & Wildlife Conservation Trust (GWCT) is working across many aspects of our environment applying science and research to develop ways to assure the future for our native birds and wildlife.

At the top of our list is the grey partridge – in fact it is our emblem – a wonderful indicator for the health and biodiversity of farmland, and the focus of the aptly named PARTRIDGE project, supported by the North Sea

Region Interreg fund. The big picture for grey partridge however is one of steep decline – a 92 per cent drop from 1967 to 2016 although we have no separate data for Scotland. We do know however, from the considerable amount of science we and others have conducted, that this decline is driven mostly by the loss of invertebrates for chicks to feed on shortly after hatching, as well as loss of nesting habitat and increased predation of hen birds and nests.

We also know that where land managers intervene with positive measures then this decline can be abated. Where the greys are doing well then other species – plants, invertebrates, birds and mammals – will all benefit.

The Scottish Government's State of Nature 2016 Scotland report painted a worrying picture for Scotland's

birds with 44 per cent of species declining over the longer term, with 14 new species recently added to the red list of conservation concern.

So, what can farmers and land managers do to halt this spiral? Much is already known about grey partridge requirements and the PARTRIDGE project aims to show what can be done via ten demonstration sites across northern Europe.

We know that grey partridges need tall, reasonably dry vegetation during the breeding season in which to conceal their nests. They need protection from predators such as foxes and stoats, and they need access to habitat that is insect rich for the chicks to feed on.

Through autumn and winter they also need tall cover, but more as 'umbrella cover' that they can move through freely and unimpeded, out

of the gaze of predators above. This is particularly important in late winter when the stubbles have gone under the plough, most wild vegetation has died back and winter cropping is still short in the fields. This is the time when cock and hen birds start to pair up and move about and, when in the open particularly, are more at risk.

This type of cover can be created by land managers relatively easily, with a variety of seed mixes, providing protection from predators and seed food for some, but not all, of the winter. No crop can be guaranteed to provide seed right through to late winter and what there is will be foraged by slugs, snails, insects, mice, deer, rabbits and other birds too – and much drops off the plants to rot.

Because of this, supplementary feeding is important, especially late in winter, sited close to

cover so that the birds can find shelter easily should they sense a threat.

Ideally more farms working together over larger catchments, all of them providing sympathetic habitat not just for grey partridge but for many other farmland species, would move matters forward.

Managing hedges properly is also important as this key habitat feature can provide year-round cover and resources, as is leaving field margins and headlands to provide food, shelter and nesting cover. There is a delicate balance to be struck between farming for nature and farming for food, and both should have their place on the modern farm.

GWCT has two PARTRIDGE demonstration sites in Scotland. On these sites we are increasing the area of habitat crucial to grey partridge and other target wild species to 7 per

cent of the farmed area as that is the percentage that we estimate is needed to support healthy populations.

We are also trialling new crops and seed mixes and have deployed a new variety that gives all the essential elements described above. The mix contains several species of annuals, biennials and perennials sown in large blocks of around 1ha or in 24m wide margins. Through a programme of cutting and reseed this can provide a habitat ideal for chicks in summer with short, open vegetation rich in insect life, adjacent to taller canopy cover for nesting in spring and protection in winter.

Where we have done this grey partridge numbers are increasing significantly. If more farms and estates would deploy such measures, ideally working together with their neighbours, then we can put the grey



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