



State of Nature report shows Scotland's wildlife continues to decline

- New landmark report reveals 1 in 9 species is threatened with national extinction
- State of Nature, the most precise scientific report on Scotland's nature, shows a 15% decline in average species abundance across closely monitored wildlife since 1994. In the last decade alone, 43% (172) of the species have declined strongly.
- Some of the worst declines were in familiar species such as swift, greenfinch, kestrel, curlew and lapwing. While others were in species unfamiliar to most including moths such as rosy minor, satyr pug and grey mountain carpet.
- Lichens, bryophytes and flowering plants have suffered massive declines in distribution since 1970 – showing the importance of restoring key ecosystems, expanding native woodlands like Scotland's rainforest, tackling climate change and helping wildlife withstand its effects.
- Scotland's globally important seabirds are among the biggest concern – declining by nearly half between 1986 and 2019 – before the more recent devastating impacts of Avian Flu.
- Investment in restoring Scotland's nature will generate green jobs, improve national health and wellbeing, help tackle climate change, build inward investment and reflect our national culture and identity.

Scotland is famous for its spectacular wildlife and wild places, but historic nature loss means it is one of the most nature-depleted countries in the world¹. Now a new report, released today, shows that Scotland's wildlife continues to decline.

One in nine of the species assessed² (11%) are at risk of becoming nationally extinct. However, this figure is much higher for some groups eg vertebrates (animals with backbones) (36.5%).

Between 1986 and 2019, the abundance index of 11 annually monitored Scottish breeding seabird species fell by 49%³. Importantly, these results pre-date the huge impact of the ongoing outbreak of Avian Flu.

There has also been a decline in the distribution of 47% of flowering plant species, 62% of bryophytes (mosses, liverworts and hornworts) and 57% of

lichen species since 1970⁴. This demonstrates huge shrinkage in the number of places where these important plants and lichens are found.

The State of Nature Scotland report is the most precise review of how nature in Scotland is faring. Working with professionals from more than 50 nature and conservation organisations the recent report – which updates and supersedes previous editions in 2013, 2016 and 2019 – uses the latest and best data from monitoring schemes and biological recording centres, collected by thousands of skilled volunteers and professional naturalists, to provide a benchmark for the status of wildlife.

Since systematic monitoring of 407 species began in 1994, the abundance of those species has declined on average by 15%. While some of these species have seen increases⁵, in the last decade alone 43% (172) have declined⁶. Since 1994, swifts, curlews and lapwings have all declined in abundance by more than 60%, while kestrels have declined by more than 70%. Moths such as rosy minor, satyr pug and grey mountain carpet have all declined by more than 90%.

Some of the species that have suffered the biggest declines are less widely known and recognised. However, they form key parts of native ecosystems and are indicators of wider environmental health. Their declines signal deep issues that must be recognised and tackled.

Bruce Wilson, Head of Policy and Advocacy for Scottish Wildlife Trust, said:

“The Scottish Government has committed to ambitious nature targets which are strongly welcome. A crucial part of meeting these targets is having a firm grasp of the challenge that lies ahead. The data the State of Nature report supplies does not make for comfortable reading, however, it comprehensively highlights that greater action is necessary if Scotland is to reverse biodiversity loss.”

Paul Walton, Head of Species and Habitats for RSPB Scotland, said:

“Species are the building blocks of ecosystems. Every time we allow a species to go into decline, or to be lost from our country, we progressively undermine the health and functions our ecosystems. This is a fundamental problem for the living world, including us. Ecosystems provide food, water, air, they underpin the economy and give us health and wellbeing. The State of Nature report shows that not only is Scotland one of the most nature-depleted countries in the world due to historic losses, but that we are still losing nature now. The findings should be a further wakeup call that, despite extraordinary efforts across our society to restore ecosystems, save species and move towards nature-friendly land and sea use, there’s much more we need to do to halt and reverse the declines. Thankfully, there are straightforward solutions and plenty of opportunities for the Scottish Parliament to make a difference in the coming months. Our nature is declining, but Scotland still has incredible natural treasures, deeply

embedded in our culture, that we must urgently conserve and restore. We must take these opportunities before it's too late."

Professor Colin Galbraith, Chair of NatureScot, said: "Scotland is rich with passion, endeavour and concern for our natural world and, as we work tirelessly to tackle the nature-climate emergency, it is clear that ambition for landscape-scale, collaborative conservation efforts has never been so vital. The State of Nature report is evidence that Scotland's nature is in crisis, but it also inspires us with what can be achieved by farmers, foresters, communities, charities and scientists when we all take the urgent action needed to protect and restore our ecosystems and species before it is too late."

Centuries of habitat loss, over-exploitation, the intensification of farming, development, invasive species and persecution (killing of wildlife) means Scotland is one of the most nature-depleted countries in the world, ranking 28th from bottom out of more than 240 countries/territories in terms of the biodiversity it has remaining¹.

The evidence, from the last 30-50 years, presented in the State of Nature report, shows how our management of land and seas, climate change, pollution and invasive non-native species are all causing ongoing nature loss.

While 18% of Scotland's land is currently protected, just 65.2% of the features for which these areas are protected were in favourable condition in the most recent assessment, down from 67.5% in 2007. While, in the most recent condition assessment, just 3% of native woodland was in favourable condition. Furthermore, the blanket bogs of Caithness and Sutherland store 400 million tonnes of carbon (double that stored in the UK's forests and woodlands combined); Scotland's peatlands extend much further, but 80% are damaged and releasing carbon equivalent to an estimated 13% of Scotland's terrestrial emissions. Improving and expanding native woodlands and restoring peatlands can address the nature and climate emergency.

Despite moves in recent years towards more nature-friendly land and sea use, just 20% of Scotland's farmland is currently in the Agri-environment Climate Scheme. The best available information suggests that nature-friendly farming needs to be implemented at a far wider scale to halt the decline in farmland wildlife and help Scotland reach net zero, while ensuring we can meet future needs for food, energy and fuel. Nearly three quarters of Scotland's land is farmed, meaning there are significant opportunities to achieve this.

On a more positive note, the report also reveals that communities, conservation projects and legislation can have a positive impact on nature and the wider environment. Numbers of the rare and critically endangered pine hoverfly have increased thanks to population reinforcement; great-crested newts have benefited from pond creations by farmers and foresters; water voles have recolonised areas in which invasive non-native American mink have been

controlled; numbers of critically endangered flapper skate are increasing thanks to better fisheries management and Marine Protected Areas.

Furthermore, one of the species that has seen a massive increase in Scotland thanks to conservation efforts is the white-tailed eagle – not only restoring an important missing part of Scotland’s wildlife and culture, but one that brings millions of pounds to the Scottish economy through tourism.

More restoration projects, for native woodlands, peatlands and species-rich grasslands are now getting underway too. If these projects can be scaled-up to work across Scottish landscapes, not only will restoring these habitats have clear benefits for nature, but they can help us mitigate and adapt to the impacts of climate change and provide other benefits to people including for health and wellbeing.

Often the solutions to the challenges facing nature are known, there just needs to be sufficient funding and support, including investing in the jobs and skills needed, to deliver solutions at scale and speed.

To download a full copy of the Scotland State of Nature 2023 report and to find out what you can do to help, visit www.stateofnature.org.uk.

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The report

You can download the Scotland report here: <https://we.tl/t-sSVrrUrAa2>

Images

A wide selection of images to support this story are available to download here: <https://we.tl/t-AjVxHNZH4C>.

They must be credited to the photographer and only used in relation to this story.

A short film about the report is available to embed (from 7 pm on Wednesday 27 September) here: <https://youtu.be/IwmgZC6FRFY>

Editor's notes:

Additional partner quotes:

Jenny Hawley, Policy Manager, Plantlife: "This landmark report shows devastating declines in the state of Scottish nature and wild plants and fungi are on the frontline. The decline in distribution of 47% of flowering plant species and 62% of bryophytes (mosses and liverworts) in Scotland between 1970 and 2019 is staggering and brings into sharp focus the need to act, and act fast, to arrest the loss and create more space for nature.

"Healthy plant communities must be better safeguarded as they are the bedrock of functioning ecosystems and their wellbeing is crucial to the fate of other wildlife. The state of Scottish lichens is particularly alarming; of 1577 lichen species, 57% have declined, making Scotland the only UK country where lichen distribution is declining on average. The plight of lichens is under-reported but more must be done to understand and safeguard them as we still have so much to learn about how lichens enrich ecosystems and offer great promise to medicine. From temperate rainforests – home to many rare and threatened lichens – to wildflower meadows, and other species-rich grassland habitats, Plantlife Scotland is committed to working with partners to arrest these losses and improving the state of nature for generations to come."

Ruth Taylor, Agriculture and Land Use Manager at WWF Scotland said: "The way we use land is putting major pressures on our precious nature and wildlife. We know what we need to do to turn this around, but to achieve it we need greater guidance from the Scottish Government in the upcoming Agriculture and Natural Environment Bills.

"With 70% of Scotland under agricultural management, it's a no brainer that we need more ambitious agricultural policies aimed at supporting our farmers and crofters to introduce practices that tackle climate change and protect nature whilst continuing to produce food and support rural communities."

Dr Mark Wilson, BTO Scotland acting head of science, said: "We wouldn't know any of this without the work of tireless volunteers who carry out surveys in some of our most challenging landscapes, whatever the weather! There's a lot we still don't know about how wildlife is doing, especially in parts of the UK where few people live, and which are difficult to get to. This makes the contributions of volunteers in remote areas, including many parts of Scotland, particularly valuable."

Jim Foster, Conservation Director at Amphibian and Reptile Conservation, said: "The state of Scotland's nature should be of vital importance to all of us. Animals such as frogs, toads, newts, snakes and lizards are a fundamental part of our natural and cultural heritage, but like many of the other species and habitats covered in this report, they are increasingly under pressure from factors such as land-use and climate change. This report shows that it is possible for conservation projects to recover species populations, and how important it is that we scale up our efforts to reverse nature declines."

Matt Larsen-Daw, CEO, Mammal Society said: "Due to the long history of our declining nature, no one alive today has ever actually seen our landscapes as they could be - fulfilling their potential as havens for nature as well as people. Much of our cultural

ties to the landscape are linked to the very practices that have contributed to denuding it of wildlife. We need a mind shift to normalise gardens, roads, parks and ground in our landscapes that are frayed around the edges. When people see long grass, scrubland and bulging hedgerows as signs of nature being allowed a place in the landscape, rather than as evidence of neglect and wasted space, we move a step closer to a society that will see the missed opportunities when nature is suppressed or excluded, and demand better.”

1. The most recent Biodiversity Intactness Index for Scotland is 45% which is similar to other UK countries but far lower than other European countries. In the assessment which looks at more than 240 countries and territories across the world, Scotland ranks 28th from bottom. More at <https://www.nhm.ac.uk/our-science/data/biodiversity-indicators/what-is-the-biodiversity-intactness-index.html>
2. The number of taxa formally assessed using the IUCN Regional Red List process and known to have occurred in Scotland is 7508. Of extant taxa, which sufficient data, 764 (10.75) qualify as threatened and are therefore at risk of extinction from Great Britain (the scale at which Red List assessment are made).
3. Scotland’s breeding seabirds are of international importance. Since 1986, the abundance indicator for 11 breeding seabird species shows an average decline of 49%. Of particular concern are precipitous declines in Arctic Skua and Kittiwake, influenced by climate change and changes in fish populations in part associated with fishing pressure. These declines predate the as yet unknown but significant impact of ongoing outbreaks of highly pathogenic avian influenza.
4. Between 1970 and 2019, of 1223 species of flowering plants assessed 47% have declined; Species associated with arable farmland and semi-natural grassland showed particular declines. Of 879 bryophyte species 62% have declined; warmer drier summers as a result of climate change are likely to be having a negative impact. Of 1577 lichen species 57% declined.
5. Species like White-tailed Eagles have seen large increases due to conservation efforts, while climate change is likely increasing the range and therefore abundance of summer migrants such as Blackcaps, Willow Warblers and Tree Pipits.
6. Over the last 10 years (2010-2020), 172 species (43%) showed strong or moderate declines and 144 species (36%) showed strong or moderate increases; 82 species (21%) showed little change.
7. **Case study 1: Seagrass restoration.** Since the 1980s, 33% of UK seagrasses have been lost. There are several community-led restoration projects underway in Scotland including Seawilding that has so far restored 0.53 ha of subtidal seagrass habitat on the west coast and Restoration Forth where WWF is working with communities to restore four hectares of seagrass in the Firth of Forth.
8. **Case study 2: Woodland expansion.** The Woodland Expansion Project focused on the protection and growth of native woodland within the Coigach and Assynt

Living Landscape area of 4,000 ha with 6.5% of woodland. The primary objectives were to secure existing woodland fragments, enable expansion via natural regeneration and strategic planting of native species, and improve connectivity between woodland fragments to establish wildlife corridors for woodland biodiversity. Benefits to people were also a core objective, by illustrating the practical benefits of woodland such as shelter for people, wildlife and livestock, sources of sustainable firewood and support for community orchards.

9. **Case study 3: Peatland restoration.** Work in the Flow Country includes restoration projects by RSPB at Forsinard National Nature Reserve over the last 25 years. This included felling 2,593 ha of non-native forestry with the aim of restoring natural bog habitat⁹¹. Large-scale trials of different ways of restoring bog following forestry removal has enabled the implementation of the best restoration practices. Initial results suggest the water table is rising, and invertebrates and bird assemblages are gradually converging with those found in natural bogs. The Flow Country is currently under consideration for World Heritage status which could bring significant social, cultural and economic benefits.
10. **Case study 4: Woodland restoration.** Cairngorms Connect is the UK's largest habitat restoration project, covering 60,000 ha in the Cairngorms National Park. It has a 200-year vision that aims to improve and protect habitats such as native woodland, peatlands and rivers. Neighbouring landowners have united around a shared vision for landscape restoration, including collaborative deer control. This enables native woodland to regenerate, resulting in its marked expansion including the return of palatable species that are otherwise challenging to regenerate, such as birch and aspen. Cairngorms Connect works closely with local communities, including farmers and landowners, to develop conservation plans and initiatives that are compatible with their needs and interests. The project also provides opportunities for local people to participate in its conservation efforts through volunteering and citizen science programmes. These help to build a sense of ownership and pride in the local environment, while increasing public awareness of conservation issues.
11. The State of Nature (SoN) is a partnership of organisations that are directly involved with conservation evidence and/or conservation delivery, who work together on appropriate science and evidence-based products.

The principal role of the SoN Partnership is to improve the collection, collation, and efficient use of data from biodiversity recording and monitoring relevant to nature conservation in the UK and its Crown Dependencies and Overseas Territories: understanding the status and trends of species, habitats, sites and other environmental variables including those which drive changes in biodiversity, and the causes and consequences of changes in these.

12. Scotland report partners: A Rocha, Action for conservation, Amphibian and Reptile Conservation (ARC), Association of Local Environmental Records Centres (ALERC), Bat Conservation Trust (BCT), Biological Records Centre/CEH (BRC), Botanical Society of Britain and Ireland (BSBI), British Arachnological Society (BAS), British Bryological Society (BBS) (CEH), British Dragonfly Society (BDS), British Lichen Society, British Trust for Ornithology (BTO), Buglife, Bumblebee Conservation Trust, Butterfly Conservation, Centre for Ecology & Hydrology (CEH), Chester Zoo, Continuous Plankton Recorder, Earthwatch, Freshwater Habitats Trust, Friends of the Earth, iSpot (The Open University), James Hutton Institute, John Muir Trust, Joint Nature Conservation Committee (JNCC), Mammal Society, Marine Biological Association (MBA), Marine Conservation Society,

MARINELife, National Biodiversity Network (NBN), National Forum for Biological Recording, National Trust for Scotland, Natural History Museum, NatureScot, ORCA, People's Trust for Endangered Species (PTES), Plantlife, Plymouth University, Royal Botanic Gardens, Edinburgh, Royal Society for the Protection of Birds (RSPB), Royal Zoological Society of Scotland, Scottish Environment Link, Scottish Wildlife Trust, Shark Trust, University of Sheffield, Vincent Wildlife Trust, Whale and Dolphin Conservation (WDC), WWF Scotland, Wildfowl & Wetlands Trust (WWT), Woodland Trust, Zoological Society of London (ZSL),

13. Full list of UK partners: A Rocha, Action for conservation, Alderney Wildlife Trust, Amphibian and Reptile Conservation (ARC), Association of Local Environmental Records Centres (ALERC), Bat Conservation Ireland, Bat Conservation Trust (BCT), Biological Records Centre/CEH (BRC), Botanical Society of Britain and Ireland, British Arachnological Society (BAS), British Bryological Society (BBS) (CEH), British Dragonfly Society (BDS), British Lichen Society, British Trust for Ornithology (BTO), Buglife, Bumblebee Conservation Trust, Butterfly Conservation, CEDAR Centre for Environmental Data and Recording, Centre for Ecology & Hydrology (CEH), Chartered Institute of Ecology and Environmental Management (CIEEM), Chester Zoo, Continuous Plankton Recorder, Earthwatch, Freshwater Habitats Trust, Friends of the Earth, iSpot (The Open University), James Hutton Institute, Jersey Government Department of the Environment, John Muir Trust, Joint Nature Conservation Committee (JNCC), Local Environmental Records Centre Wales, Mammal Society, Manx BirdLife, Marine Biological Association (MBA), Marine Conservation Society, MARINELife, National Biodiversity Network Trust (NBN Trust), National Forum for Biological Recording, National Trust, National Trust for Scotland, Natural England (NE), Natural History Museum, Natural Resources Wales (NRW), NatureScot, Northern Ireland Environment Agency (NIEA), Northern Ireland Marine Task Force, ORCA, People's Trust for Endangered Species (PTES), Plantlife, Plymouth University, Royal Botanic Gardens, Edinburgh, Royal Society for the Protection of Birds (RSPB), Royal Zoological Society of Scotland (RZSS), Scottish Environment Link, Scottish Wildlife Trust, Shark Trust, States of Guernsey, Ulster Wildlife Trust, University of Sheffield, Vincent Wildlife Trust, Whale and Dolphin Conservation (WDC), Wildfowl & Wetlands Trust (WWT), Wildlife Trusts, Woodland Trust, WWF, Zoological Society of London (ZSL)