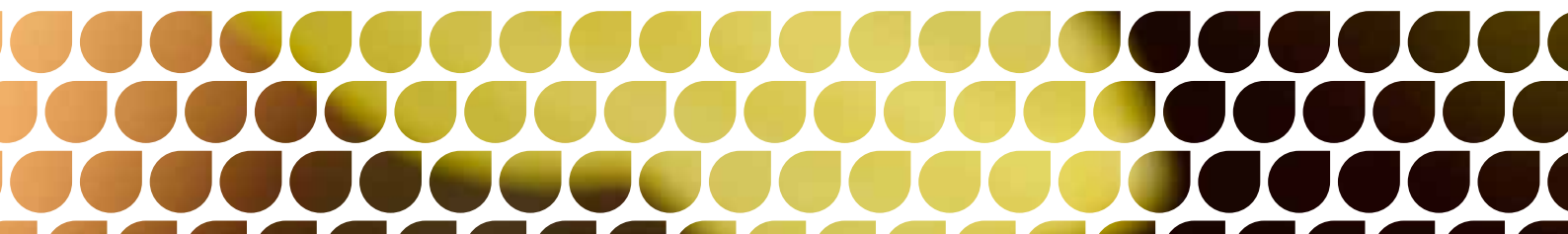




Wales



The Welsh landscape is incredibly varied and home to an array of special wildlife. Much of the land is farmed, predominantly for livestock production but with areas of dairy and arable farming in the south and west, and the borders. A significant proportion of land in Wales is considered to be upland, with a distinctive Welsh habitat, *ffridd*, forming a transitional zone on the lower hillsides where mountain and moor give way to enclosed farmland on the lower hill slopes.

The diverse character of Welsh freshwater and wetland systems means that they should support a correspondingly rich suite of native wildlife. However, increasingly intensive land management has led to the contraction, fragmentation and modification of wetlands to the point that many no longer function effectively as natural wetland systems and are unable to support the wildlife they could, or once did.

Although they account for less than 1% of the Welsh landscape¹, lowland heathland habitats are home to many of Wales's threatened species. Woodland is also a key component of the Welsh environment, and includes important upland oak woodlands. With over 2,700 km of coastline, Wales has a rich coastal and marine environment, which supports internationally important breeding seabird and wintering waterfowl populations, such as the 39,000 pairs of gannets that breed on Grassholm.



- ***Of the 25 butterfly species assessed, a similar number (13) have decreased in abundance in Wales compared to those that have increased.***
- ***57% of Wales's flowering plants are declining, while 43% are increasing – a similar story to the rest of the UK. The overall pattern of change is similar to that found in England, with species of open, nutrient-poor, basic or acidic areas declining, and those of shaded, nutrient-rich, neutral areas increasing.***
- ***We can assess population trends for less than half of bird species in Wales. Of the bird species assessed, slightly more have increased than decreased. Wintering waterbirds are doing particularly well; however, many farmland species continue to decline rapidly.***
- ***Between 1970 and 1990, twice as many bird species suffered contractions to their Welsh ranges, compared to species whose ranges increased².***

Measuring the state of nature in Wales

The main *State of Nature* report gives an overview of how wildlife is doing across the UK. Here we concentrate on Wales. Due to a lack of suitable data, we were only able to present quantitative trends for about 5% of the UK's species, and when we look at a smaller scale, the problem becomes even greater. As a result, although we report the best available data here for Wales, the picture is far from complete – we simply don't have sufficient knowledge to make a robust, quantitative assessment of the state of nature in Wales.

In many cases, we suspect that trends at the UK level may hold true in Wales, but this is not always the case. Caution should be used in drawing wider conclusions about the state of Welsh nature from the evidence we present here. Even within the groups included, we can only report on a non-random sample of species, often biased towards those that are sufficiently widespread to be picked up in UK-level monitoring schemes. As elsewhere in the UK, one of our strongest messages is that we need to know more about how nature is faring in Wales.

Given these constraints, rather than attempt a lengthy overview of Welsh nature, we will briefly highlight the importance of four special habitats, as well as a few key measures of change in Welsh wildlife.



We still need to know more about how nature is faring in Wales.

IUCN Red Lists for Wales have been produced for flowering plants³, lichens⁴, mosses and liverworts⁵. The results are shown in the table below.

More than one in six plant species are considered threatened in Wales.

Group	Number of species			% threatened
	Extinct	Threatened ^A	Total	
Flowering plants	38	256	1,467	17
Lichens	22	204	1,290	16
Mosses and liverworts	26	146	850	18

A: Species designated as Critically Endangered, Endangered or Vulnerable

Several of the large datasets used in the main *State of Nature* report also provide country-specific assessments. Wales-specific population trends, covering a period of up to 50 years, were available for flowering plants⁶, some birds^{7,8,9} and butterflies¹⁰, and were used to derive the headlines (left). The same rules were used to allocate species into the four trend categories as in the main *State of Nature* report. These rules, as well as details of the datasets and analysis methods used, are given in the methods section in the main report.

Farmland



Andy Hay

View over Welsh farmland

Farming is the major land use in Wales: more than 70% of the land surface is under some form of agricultural management, with permanent pasture for dairy and livestock production the most common¹¹. If we discount the farmed uplands, and only focus on enclosed farmland in the valleys and lowland areas of Wales, farmland habitat still covers a large proportion of what is considered the Welsh “countryside”.

Breeding birds in farmed habitats have been lost at an alarming rate. Results of long-term monitoring schemes show that, despite increases in some species, as a whole, farmland birds have declined significantly. They are now found in fewer places in Wales than at any time in the last two decades². Some, such as the turtle dove and corn bunting, have almost disappeared from Wales¹².



David Slater (NHFA/Photoshot)

Small-flowered catchfly

In Wales, as elsewhere in the UK, changes in farming practices, especially the loss of mixed farming and the move from arable to permanent pasture, are thought to have driven declines in many farmland species. In response, many farmers and landowners, often with the help of government and conservation charities, have invested a lot of effort into improving the farmed landscape, through agri-environment schemes and other mechanisms.

Wildflowers, especially arable flowers such as the small-flowered catchfly and corn buttercup, continue to decline and have a smaller range now than at any other time in recent decades⁶. The loss of wildflowers has resulted in a loss of nectar and pollen sources in the countryside, which is a serious threat to insect pollinators like bees, flies and moths.

However, shortcomings in the way that the schemes are designed have left too little focus on the requirements of wildlife, and sadly these efforts have largely failed to halt the continued loss of species and habitats.

Breeding birds in farmed habitats have been lost at an alarming rate: some, such as the turtle dove, have almost disappeared from Wales.

Woodland

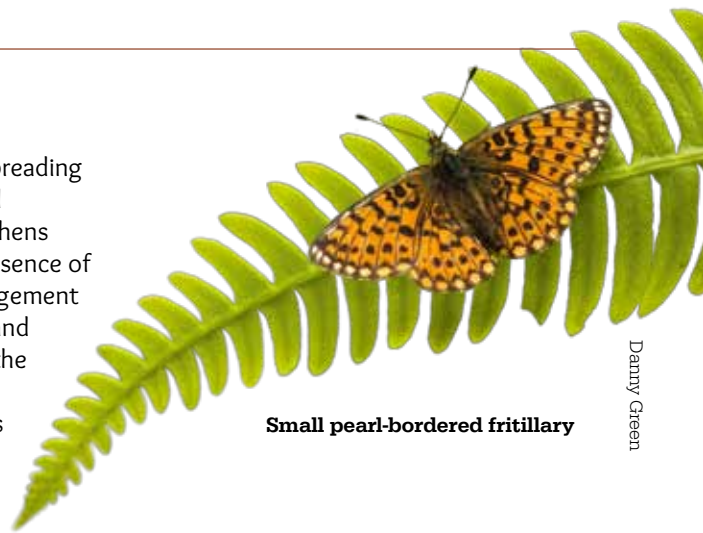
Although wooded areas cover 14% of the land surface of Wales (304,000 hectares)¹³, 43% of this is non-native coniferous forest; just 38% is broadleaved woodland and only 4% is mixed native woodland¹⁴. However, within this relatively small land area, there is outstanding diversity, helped by the varied geology and landscapes, unique geographic position and the influence of prevailing Atlantic weather. For example, Wales holds 26,000 hectares of upland oak woodland^{1,15,16}, 40% of the UK's total of this globally important habitat.

Within woodlands, different species have a variety of different requirements. Many species rely on specific conditions and types of management to survive, including rotational coppicing, appropriate grazing by cattle and sheep, and the presence of woodland glades. Other species, like our woodland bats, rely on mature woodland, with a well-developed understorey, veteran trees and ample deadwood. Shading and competition by invasive non-native species, such as rhododendron, leads to reduced plant and fungal diversity, and affects the structure of woodlands¹⁷. These changes, together with a reduction in the amount of deadwood, result in fewer feeding, nesting and hibernation sites for mammals, birds and invertebrates.

Woodland plants, such as spreading bellflower and narrow-leaved helleborine, and lungwort lichens continue to decline in the absence of appropriate woodland management and the effects of nitrogen and sulphur dioxide pollution in the atmosphere^{18,19}. The level of nitrogen deposition depends on both rainfall and the amount of atmospheric nitrogen. Since Wales has a wet climate and many important habitats are close to atmospheric nitrogen sources, "background" levels of nitrogen are often high and the localised impacts can be acute.

The abundance and range of woodland bird species appears to be stable overall. However, some species are in decline. For instance, the wood warbler, a species of Western Atlantic woodlands, has declined rapidly over the last two decades. A range of other species, such as the lesser spotted woodpecker, marsh tit and willow tit, are also continuing to decline^{7,20}.

To restore the biodiversity of Welsh woodlands, we need to reintroduce a range of management practices, as well as non-intervention areas. This will create structurally complex woodlands, with varied habitats and vegetation that will meet the needs of the local wildlife. Long-term continuity of management as part of the wider landscape is also vital.



Small pearl-bordered fritillary

Danny Green

Planting new woodlands with native species should be a priority in locations where it would increase the area and diversity of wooded habitats and link currently isolated woodlands, provided that this does not compromise the native biodiversity of open habitats.

We also need to address issues outside the woodland edge, such as reducing atmospheric nitrogen pollution and nutrient run-off.

Wales holds 40% of the UK's upland oak woodland, a globally important habitat.



Oak woodland

Jodie Randall

Case study

Ffridd: a distinctive Welsh habitat

A little-known but important ecological zone in Wales is ffridd (also known as coedcae or upland fringe): a mosaic of irregular and diverse habitats at the boundary of historically enclosed farmland and unenclosed uplands. It can also include areas on rocky knolls and steep slopes within enclosed fields.

Ffridd is incredibly diverse, due to its variety of vegetation communities and structural features, and provides resources for many species, including a high proportion of protected and priority species, like the Welsh clearwing moth. It also provides a link between the lowlands and uplands, allowing increasingly fragmented populations of species, such as water voles and adders, to move in response to changes in climate and land management.

Upland

The Welsh uplands are found on the western periphery of Europe, and are the most southerly of the major upland regions in Britain. The definition of what constitutes “uplands” varies, but in general, uplands cover more than 40% of the land area of Wales¹⁵, and most of them are farmed or managed in some way. However, there are also large areas of Wales, at a range of altitudes, that are considered to be “enclosed farmland”, which is also upland in terms of land quality and landscape character.

The Welsh uplands and their margins are home to some of our most charismatic and threatened wildlife, as well as vegetation communities that are important not just for the ecological health of upland habitats but also the cultural fabric that makes Welsh uplands so special.

Some of these species, such as the Snowdon lily and weaver’s wave moth, are found nowhere else in the UK. Many are also at the south-western edge of their range in the UK (and in some cases Europe), such as the golden plover, which has declined by more than 83% in Wales in recent decades²¹.

The upland landscapes of Wales are important not just for their wildlife and beauty, but for farming, forestry, water management, energy supply and recreation too. These uplands are currently highly modified and simplified in ecological terms, and their biodiversity has been significantly reduced due to a long history of inappropriate grazing, burning and afforestation, together with drainage and atmospheric pollution.

Recently, abandonment and lack of management have emerged as new threats to the Welsh uplands and their wildlife. Traditional management practices that once maintained habitat diversity are dying out, and without them wildlife, not to mention farmland and other land uses, will suffer.

However, there are examples of how the fortunes of our upland wildlife have been turned around. Hen harriers are bucking the downward UK trend, and increasing in the North Wales uplands¹², while black grouse are responding well to targeted management. Despite this, their range has continued to contract in areas without such management²².



Case study

High brown fritillary

The high brown fritillary is the UK’s fastest declining butterfly. Following a decline of 81%²³ in its Welsh range, just 17 adults remained in Wales in 1999, in the Alun Valley, on the western edge of the Vale of Glamorgan. But thanks to effective management and long-term planning by a pioneering conservation partnership, the number of adults had

risen to 588 by 2011²⁴. This work has also resulted in increases in a number of other species, including the small pearl-bordered fritillary, early purple orchid and dotted bee-fly. Encouragingly, the hornet robber fly has been recorded in managed areas for the first time in 100 years.

Richard Revels



Cwm Ystradllyn, Porthmadog

Graham Eaton

Lowland heathland

Lowland heathland is characterised by a range of dwarf shrubs, including heather and gorse, as well as species such as the three-lobed water crowfoot, pillwort and lesser butterfly orchid. Together with invertebrates, these plant communities underpin the health of lowland heathland, and support other wildlife, including iconic Welsh bird species like the chough.

Much of this habitat occurs around the iconic Welsh coast, in places such as Pembrokeshire, Anglesey and the Gower and Llŷn Peninsulas, and it forms a familiar, much-used and much-loved landscape. Although around 13% of lowland and maritime heath is protected, this important habitat and the species it supports are in trouble. Around the UK, the habitat itself has declined by up to 80% over the last two centuries, and those areas that remain are fragmented and under threat.

David Tipling



Chough



Maritime heathland

Geoff Simpson

Lowland heathland is an important habitat and the species it supports are in trouble.

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The *State of Nature* report is a collaboration between the 25 UK conservation and research organisations listed below:



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