England

state of nature

England's landscapes and wildlife have been shaped by centuries of human use, and so little of the English landscape can be considered truly "wild". Despite, and in some cases because of that, we have much to treasure – England has more woodland coverage than any other UK country and on its lowland heathlands many species from further south in Europe reach their northern limits. The blanket bogs in the Northern Pennines are home to a wealth of wildlife, and England's coastline is punctuated with extensive areas of intertidal mudflats and saltmarshes that are of international importance for wading birds.

Many of these habitats are heavily shaped by people, which means that when we change the way we manage our countryside our actions have a huge impact on the wildlife that lives there. For instance, England has important wildflower-rich grasslands, but only 2% of grassland in England is now considered semi-natural. This is to the detriment of a diverse range of fungi, particularly waxcaps, and butterflies like the chalkhill blue[1].

England is often thought of as a highly urbanised country and the area covered by its towns and cities is equal to that of its woodlands[2]. Although urban areas have fewer species than our woods and coasts, they are not deserts for biodiversity and may act as important refuges for some species, given the loss of semi-natural habitat elsewhere. Urban areas also play a crucial role in allowing many people access to green space and nature.

Yellow flag iris

David Osborn

- ***30 out of the 54 butterfly species assessed have decreased in England (56%). 13 species, including the comma and holly blue, have shown strong increases, with some increasing in response to climate change.***
- ***More bird species are increasing (59%) than decreasing (41%) in England. However, many farmland, woodland and sub-Saharan migrant birds are declining, such as the turtle dove, which is declining at the worrying rate of 7% per year.***
- ***60% of England's flowering plants are decreasing, while 29% are decreasing strongly – a similar story to the rest of the UK. The pattern of species of nutrient-poor areas declining, and those of nutrient-rich areas increasing, is particularly pronounced in England.***

Several of the large datasets used in the main *State of Nature* report also provide country-specific assessments. England-specific population trends, covering a period of up to 50 years, were available for flowering plants[3], some birds[4–9] and butterflies[10], and were used to derive the headlines (above). 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 of the main report.

Measuring the state of nature in England

The main *State of Nature* report gives an overview of how wildlife is doing across the UK. Here we concentrate on England. 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 – there are many species and taxonomic groups for which we have no England-specific population trends.

Where possible, we have summarised species' trends, but caution should be used in drawing wider conclusions about the state of English nature from this evidence. As elsewhere in the UK, one of our strongest messages is that we need to know more about how nature is faring in England.

Given these constraints, rather than attempt a lengthy overview of English nature, we will briefly highlight the importance of three of England's most special habitats, as well as a few of the most robust measures of change in England's wildlife.

Many of the government's biodiversity indicators show downward trends, particularly over the longer term.

David Tipling

Bluebells in beech woodland

The government publishes official biodiversity indicators, used to describe the state of species in England[11]. A summary of these is given below: an upwards arrow (▲) indicates an increase in abundance or diversity, a downwards arrow (▼) indicates the opposite, and an equal sign (◀▶) indicates little change.

English biodiversity indicators

Group	Long-term trend[A]	Short-term trend[B]
Farmland birds	▼	▼
Widespread butterflies in farmland	▼	▼
Widespread bats	▼	▲
Woodland birds	▼	◀▶
Widespread butterflies in woodland	▼	◀▶
Wintering water and wetland birds	▲	▼
Breeding water and wetland birds	◀▶	◀▶
Seabirds	◀▶	◀▶
Plant diversity: woodlands	◀▶	◀▶
Plant diversity: farmland	▲	▲
Plant diversity: neutral grassland	▼	▼

A: Direction of trend since start of monitoring, various dates from 1970 onwards
B: Direction of trend since 2000

Lowland heathland

Ben Hall

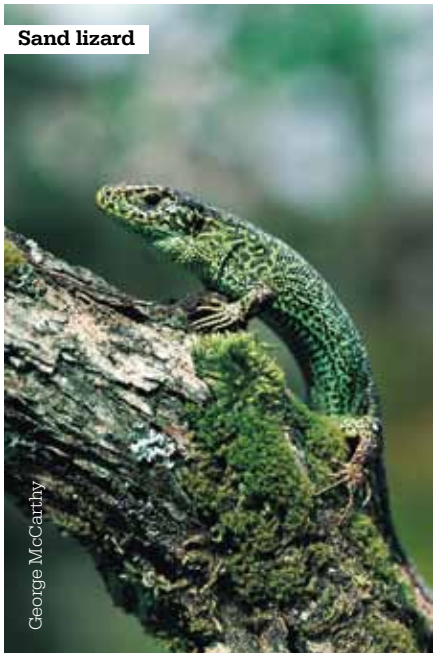
RSPB Arne nature reserve

David Tipling

Nightjar

Lowland heathland is a rare habitat, covering just 0.4% (530 sq km) of England[12], compared to 10% that is woodland. Sadly, over the last 200 years, an estimated 80% of the UK's lowland heathland has been lost to agriculture, conifer plantations and housing developments. Even so, the remaining fragments contribute about 18% of the global total of this important habitat.

Lowland heaths are characterised by nutrient-poor soils and a mosaic of dwarf shrubs, scrub and bare ground. The open, warm heathland conditions are favoured by sun- and heat-loving species, including all of the UK's reptiles. Two of these, the smooth snake and sand lizard, are heavily reliant on heathland. Other specialist wildlife including bees, wasps and ants find a home here. Plants, such as the marsh gentian and dyer's greenweed, rely on nutrient-poor heathland soils, as they are outcompeted in more fertile environments.



George McCarthy

Sand lizard

England's remaining fragments of lowland heathland are now well protected: 73% is designated for its importance to biodiversity, which should mitigate against any further loss. However, inappropriate management, disturbance and nutrient deposition remain problematic[13]. Without active management, such as grazing, burning and scrub removal, heathlands become degraded and are eventually lost through succession to woodland.

Targeted conservation work is improving the conservation status of species such as the sand lizard, and heathland birds including woodlarks and Dartford warblers have increased over recent decades. Restoration projects are also underway in some areas, and often include the removal of plantation forestry. At Farnham Heath in Surrey, 10 years after the removal of conifers, the heathland is coming back to life. Nightjars have recolonised the site, as have woodlarks and grayling butterflies.

Over the last 200 years, about 80% of the UK's lowland heathland has been lost.

Woodland

England's woodlands range from lofty beech hangars on southern downs, to alder carr in the Norfolk Broads and lichen- and bryophyte-rich oak woods in the south west and Cumbria. Each is home to a rich and diverse flora and fauna. There are almost 250 specialist flowers in England's woodlands, most notably the internationally important populations of bluebells that carpet many woodlands in spring. Around a quarter of our breeding bird and butterfly species rely on woodland and it is crucial for all of our bats[14].

The area covered by woodland in England is greater than at any time in living memory, yet three-quarters of specialist woodland plants have declined[15]. The primary cause is thought to be changes to the way we use woodlands. Livestock grazing, charcoal production and timber growing were once common activities in our woods, but today many of these uses are rare.

The proportion of broad-leaved woodland classified as coppice or scrub fell from 49% in 1947 to only 3% in 2002[16] as our woodland stock has matured. This means shadier, more closed forests, which has had big implications for the wildlife they support. Many light-loving woodland plants have declined, while the few shade-tolerant plants have tended to increase[17].

The presence of open areas, such as rides and glades, within woodlands is important for animals too. Flies can be one of the largest components of woodland biodiversity, but in woods that lack rides and clearings, fewer fly species can survive. Recent increases in deer populations, both native and non-native, are exacerbating changes to the structure of woodlands and limiting regeneration[18]. One recent study found that woodland areas where deer had been excluded held 15 times more nightingales than surrounding areas[19].

Although many woodland species need light, open conditions, others, including our woodland bats, require a mosaic of habitats, including mature woodland with a well-developed understorey, veteran trees and ample deadwood. This deadwood also supports at least 1,800 species of invertebrates[20].

In order to support the diverse needs of woodland species, our woodlands must be equally diverse and contain a mosaic of different habitat types. We can achieve this by using different levels of management throughout the wood, and leaving some "wild" areas.

Case study

Heath fritillary


Chris Lloyd

Heath fritillary butterfly

As its name suggests, the heath fritillary butterfly finds its home in heathland in south west England. However, in the south east, it is restricted to woodlands. Here it is known as the "Woodman's Follower" because of its habit of moving around woods as new areas are cut.

The heath fritillary feeds on common cow-wheat, but only where this grows in open sunny conditions. In the 1970s, the species came close to extinction in England, but the restoration of appropriate coppicing has led to a resurgence of these butterflies in Blean Woods in Kent, and in Essex where they have been reintroduced to four re-coppiced sites[21].


Ernie Janes

Felbrigg Woods, Norfolk

Case study

New life in reedbeds

A range of fantastic new reedbeds have been created across England in recent years, aiding the recovery of many specialist species, such as the bittern. These include

- ***Ham Wall, Shapwick Heath and Westhay Moor – all part of the Avalon Marshes complex in Somerset.***
- ***Lakenheath Fen, Suffolk***
- ***Hen Reedbeds, Suffolk***
- ***Far Ings, Lincolnshire***
- ***Langford Lowfields, Nottinghamshire***
- ***Grove Ferry, Kent***
- ***Old Moor, South Yorkshire***

All of these sites are worth visiting at any time of year, but a spring or summer visit with bitterns booming, dragonflies skimming past and bright splashes of yellow flag iris, can offer an unforgettable encounter with nature.

Bittern

Steve Round

Fens and reedbeds

Much of England is low-lying and has been subject to large-scale drainage over the centuries, resulting in the loss of huge areas of wetland. Despite this, important wetland habitats such as fens and reedbeds remain. England holds nearly all of the UK's freshwater reedbeds and although they cover only 50 sq km in total[22], they are an important wildlife habitat hosting many specialist species found in no other habitat.

Reedbeds can be strongholds for mammals such as otters and water voles, while harvest mice clamber from stem to stem and bats, such as noctule and Daubenton's, feed overhead. Forty species of insect, in four orders (Hemiptera, Lepidoptera, Coleoptera and Diptera) feed only on reeds, including moths such as the reed leopard and Fenn's wainscot. As a result, their status is intrinsically linked to the area and condition of reedbeds, as is the status of birds such as the bearded tit, marsh harrier and bittern.

The fen habitats that reedbeds are often interlinked with host many specialist plants, including threatened species such as the fen orchid and crested buckler-fern. Important aquatic plant communities can often be found in dykes and ditches, if the water quality is good enough.

Over 80% of fens and reedbeds in England are designated for nature conservation, which should help reduce direct habitat loss. However, 40% of fens and 20% of reedbeds are in an unfavourable condition[23]. Reedbeds need active management, including cutting, grazing and burning, to maintain the vital mosaic of different habitats, and to prevent gradual drying and succession to scrub. This management must be carefully done, however, since reedbeds cut for thatching tend to be less varied and hold less wildlife, and some scrub is needed to maintain the diversity of species.

At least 700 hectares of reedbed have been recreated in the last 20 years[24], as well as large new wetland systems, and more are planned. Most of these are inland, secure from the danger of saline incursion due to sea level rise, which threatens precious sites around the East Anglian coast. Bittern numbers, down to just 11 booming males in 1997, topped 100 in 2011 for the first time since records began, thanks to a spread of new sites across England – an indication of how new reedbeds are helping nature to thrive.

Malcolm Hunt

Lakenheath Fen nature reserve

Ben Andrew (RSPB)

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Bat Conservation Trust
BRC Biological Records Centre
Botanical Society of the British Isles
BTO Looking out for birds
buglife
Bumblebee Conservation Trust
WWT
The Mammal Society
The Marine Biological Association
bms
Butterfly Conservation
Saving butterflies, moths and our environment
Kew
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