England Natural Environment Indicators

2nd November 2017

This document/publication is also available on our website at:

www.gov.uk/government/statistics/england-natural-environment-indicators

Cover photographs:	Top left – Easdale (Lake District National Park) Top right – Kirkham Priory and the river Derwent Bottom left – Skinningrove Bottom right – Finsthwaite (Lake District National Park) © Martin Fowell

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Introduction

The [Natural Environment White Paper](#) (NEWP) was published in 2011 by the coalition government. It set out the government's strategy for valuing nature in our society and ensuring that it is available for use by future generations. The White Paper contained 92 commitments. The England Natural Environment Indicators (ENEI) publication has been produced under commitment 90 of the White Paper:

"We will develop a set of key indicators...to track progress on the ambitions of this White Paper. These will include a new, compact set of biodiversity indicators for the England Biodiversity Strategy. We will consult on them and finalise them by Spring 2012."

The purpose of the ENEIs is to track progress against the broad ambitions of the White Paper, to communicate this to stakeholders and interested users and to provide a robust evidence base on which to base future policy interventions. Updates are provided for the indicators included in the 2016 ENEI publication. These indicators draw on other indicator sets produced for various reporting purposes including UK and England Biodiversity Indicators. Where appropriate, links are provided to further data, charts and background information in other indicator publications[1].

The government is currently developing a 25 year plan for the environment. The plan will draw on the information provided in these indicators and consider future requirements for tracking progress of the plan.

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[1] Links were correct at time of publishing

Traffic-Light Assessment Methodology

Each indicator is composed of one or more measures which will show trends over time. Several indicators are represented by a single measure, but where data cannot be combined logically, indicators have more than one measure. Each measure is summarised or assessed separately using a set of 'traffic lights'. The traffic lights show change over time. They do not show whether the measure has reached any published or implied targets or whether the status is 'good' or 'bad'.

The traffic lights are determined by identifying a period over which the change is to be assessed and comparing the value of the measure in the base or start year with the value in the end year.

Improving

Little or no overall change

Deteriorating

Not yet assessed due to insufficient or no comparable data

Where possible the assessment has been made by evaluating trends using statistical analysis techniques. The assessment may be made by Defra statisticians in collaboration with the data providers, or undertaken by the data providers themselves. A green or red traffic light is only applied when there is sufficient confidence that the change is statistically significant and not simply a product of random fluctuations.

For some indicators, it is not possible to formally determine statistical significance and in such cases the assessment has been made by comparing the difference between the value of the measure in the base or start year and the value in the end year against a 'rule of thumb' threshold. The standard threshold used is 3%. Where the data allow it, a 3-year average is used to calculate the base year, to reduce the likelihood of any unusual year(s) unduly influencing the assessment. Where an indicator value has changed by less than the 3% threshold, the traffic light has been set at amber. The choice of 3% as the threshold is arbitrary but is commonly used across other government indicators and use of this approach is kept under review

The traffic lights only reflect the overall change in the measure from the base to latest year and do not reflect fluctuations during the intervening years.

Where data are available, 2 assessment periods have been used:

1. Long term – an assessment of change since the earliest date for which data are available. If the data run is for less than 10 years a long-term assessment is not made.

2. Short term – an assessment of change over the latest 5 years. In a minority of cases the short-term assessment has been carried out over a shorter time period, where the earliest data point is within the past 5 years but where statistical analysis allows a robust assessment of change over that time.

The individual indicators also have a third marker showing the direction of change in the last year. This period is too short for a meaningful assessment. However, when it exceeds a 1% threshold, the direction of change is given simply as an acknowledgement of very recent trends and as a possible early indication of emerging trends.
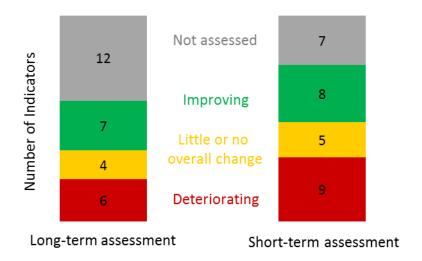
Overview

Indicator	Measures	Long Term	Short Term
1. Species in the Wider Countryside	Breeding farmland birds	❌	❌
	Butterflies of the wider countryside on farmland	❌	❌
	Bats	✅	≈
	Breeding woodland birds	❌	≈
	Butterflies of the wider countryside in woodland	❌	≈
	Breeding wetland birds	≈	❌
	Wintering water birds	✅	❌
	Breeding seabirds	⋯	⋯
2. Water Quality	Proportion of surface water bodies with status classed as good or high	⋯	❌
3. Marine Ecosystem Integrity	Fish size class	≈	✅
	Marine Litter	❌	❌
4. Priority species and habitats	Relative abundance of priority species	❌	❌
	Distribution of priority species	≈	≈
5. Land Use	Change in percentage of woodland in active management	⋯	✅
6. Natural Stocks	Sustainable fisheries	✅	✅
	Water abstraction	✅	❌
	Forest carbon stock	✅	✅
	Soil carbon concentration (all habitats)	≈	⋯
7. Raw Material Consumption	Raw Material Consumption	✅	✅
8. Value of Ecosystem Services	Value of UK woodland ecosystem services	⋯	⋯
9. Integrating biodiversity and natural environment considerations into business activity	Percentage of large companies that use an Environmental Management Scheme	⋯	⋯
	Percentage of companies where the environment is formally considered in the supply chain	⋯	⋯
10. Public Engagement with the Natural Environment	Proportion of people visiting the natural environment several times a week or more	⋯	✅
	Number of visits made by children	⋯	⋯
	Conservation Volunteering	✅	❌
11. Environmental Quality and Health	Number of air pollution days classed as moderate or higher - urban	⋯	✅
	Number of air pollution days classed as moderate or higher - rural	⋯	≈
	Mortality caused by anthropogenic air pollution	⋯	⋯
	Percentage of the population affected by noise	⋯	✅

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There are 29 measures listed. Of those assessed for long-term change (a period of 10 years or more), 65% have showed improvement or remained the same and 35% have declined. More indicators are able to be assessed in the short term (normally the last 5 years). Of these, 59% have either showed improvement or remained the same and 41% have declined.

The chart below shows the number of indicators given each assessment. However, it should be noted that the chart masks differing trends in individual indicators.

Figure 1: A summary of the long and short-term assessments

For example, the abundance of woodland birds and butterflies of the wider countryside in woodland were assessed as declining over the long term but both have levelled off in recent years. Four indicators have shown a decline over the long term and short term: breeding farmland birds, butterflies of the wider countryside on farmland, marine litter and the relative abundance of priority species. Three indicators, wintering water birds, water abstraction and conservation volunteering, have shown long-term improvements but have started to decline in recent years. There is also one indicator, breeding wetland birds, which shows little change over the long term but has also started to decline in the short term. Finally, sustainable fisheries, forest carbon stocks and raw material consumption have all improved consistently in both the long term and short term. Detail on the trends and an assessment of each indicator is given in the following sections.

1. Species in the Wider Countryside

Statistics on the populations of birds, butterflies and bats are used to reflect broader biodiversity changes in the farmland, woodland, wetland and sea environments.

Farmland

In 2015, the England breeding farmland bird index was less than half its 1970 value. The majority of this decline occurred between the late 1970s and early 1980s and was largely due to the impact of rapid changes in farmland management during this period. More recently, since 1990, the decline has slowed; the smoothed index decreased by 7% between 2009 and 2014.

Since 1990, the England farmland butterflies index has fallen by 36%. The figures fluctuate from year to year but overall, based on the underlying smoothed trend, the indicator has shown a significant decline since 2011.

Between 1999 and 2015, the England index for widespread bats on farmland has increased by 32%. The index shows no significant change in the short term (2010 to 2015).

Woodland

In 2015, the breeding woodland bird index for England was 21% lower than its 1970 level. The greatest decline occurred between the early 1980s and the early 1990s, since 1996 the index has been more stable. Over the past 10 years the woodland bird index has showed no significant change despite some yearly fluctuations.

Since 1990, the woodland butterflies index has fallen by 66%. Statistical analysis of the underlying smoothed trend shows no overall change since 2011.

Wetland

Water and wetland bird numbers have remained fairly stable for most of the period since data collection started in 1975 and the smoothed index has always been higher than the 1975 baseline. In 2015, the water and wetland bird index exceeded its 1975 level by 8%. Numbers rose slightly in the early 2000s but more recently the smoothed index showed a significant decline of 5% between 2009 and 2014.

In the winter of 2014/15, the wintering water bird index was 73% higher than in 1975/76. The index peaked in the late 1990s, and has declined since, with the smoothed index falling by 9% between 2008/09 and 2013/14.

Sea

In 2015, the breeding seabird index in England was 22% higher than its 1986 baseline level and is at its highest recorded level. With some fluctuations, the indicator has increased steadily since the late 1990s driven mainly by increases in subsurface piscivore species[2]. The traffic-light assessment was removed for this indicator from the England biodiversity indicators published in August 2017 pending further development.

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[2] Piscivores are species that feed predominantly on fish. Subsurface piscivores forage for fish by diving.

Further commentary and analysis

All of the indicators in this chapter are included within the England Biodiversity Indicators National Statistics publication. Further commentary and background information is included within the publication.

Indicator Assessment

Assessment of change in abundance of species in the wider countryside					
		Long term		Short term	Latest year
Breeding farmland birds	❌	1970-2014	❌	2010-2014	No change (2015)
Butterflies of the wider countryside on farmland	❌	1990-2016	❌	2011-2016	Decreased (2016)
Bats	✅	1999-2015	≈	2010-2015	No change (2016)
Breeding woodland birds	❌	1970-2014	≈	2009-2014	No change (2015)
Butterflies of the wider countryside in woodland	❌	1990-2016	≈	2011-2016	Decreased (2016)
Breeding wetland birds	≈	1975-2014	❌	2009-2014	Increased (2015)
Wintering water birds	✅	1975/6-2013/14	❌	2008/09-2013/14	No change (2014/15)
Breeding seabirds[3]	…		…		Not assessed (2015)

Links to data and further information

Organisation	Subject
Defra	England Biodiversity Indicators
	Populations of wild birds
Forestry Commission	Indicators page
Joint Nature Conservation Committee	Home Page
European Environment Agency	Abundance and distribution of selected species
	State of nature in the EU report
Bat Conservation Trust	National Bat Monitoring Programme
UK Butterfly Monitoring Scheme	Official Statistics
British Trust for Ornithology	Research and data services

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[3] The traffic light assessment for the seabirds measure has been removed from England Biodiversity Indicators until a way of assessing variability is devised. This follows a recommendation in a quality assurance science panel report in January 2016.

2. Water Quality

This indicator assessment is based upon the percentage of water bodies in England assessed as having a good or high surface water status. Surface water status is a composite measure that looks at both the chemical status and the ecological (including biological and habitat condition) status of a water body. The indicator is based on data used to meet reporting requirements under the EU Water Framework Directive. In 2016, England switched their monitoring and classifications over to the standards associated with cycle 2 of the Directive. In 2016, using the cycle 2 classifications, 16% of surface water bodies assessed in England were in high or good status, compared with 26% in 2011. It should be noted that the switch from cycle 1 to cycle 2 in part explains the change. In 2016, a higher proportion of estuaries and coastal water bodies (30%) were in high or good status than rivers and lakes (15% and 16% respectively).

Indicator Assessment

Assessment of change in water quality			
	Long term	**Short term**	**Latest year**
Proportion of surface water bodies with status classified as good or high	⬤	❌ 2011-2016	Decreased (2016)

Links to data and further information

Organisation	**Subject**
European Commission	Water Framework Directive
Environment Agency	Water Framework Directive - Surface Water Classification, Cycle 1 Water Framework Directive - Surface Water Classification, Cycle 2 River Basin Management Plans
European Environment Agency	European level Water indicators Waterbase - Transitional, coastal and marine waters

3. Marine Ecosystem Integrity

There are 2 indicators within the topic of marine ecosystem integrity: fish size and marine litter.

Fish Size

This indicator shows changes in the proportion, by weight, of large individual fish equal to or over 40 cm in length in fish catches in the north-western part of the North Sea, from the Humber Estuary to the Shetland Islands. Larger fish are an indication of healthy fish populations, larger fish are more likely to be caught by trawls and larger fish species are more likely to decline in number when fishing communities are more heavily fished. This indicator has not been updated since the 2016 publication.

In 2014, large fish in the North-Western North Sea made up almost 22% of the weight of the fish community. There was a clear decline in the indicator from 1983 to 1993, to a low of 2% in 2001, but a rapid recovery since 2003 that accelerated after 2010 towards the previous peak of 23% in 1983.

Marine Litter

This indicator shows the number of litter items per km^2 on the sea floor around the UK.

The average[4] number of litter items per km^2 on the sea floor in 2016 was 358; this figure is 222% higher than the 1992-94 baseline average. In 2003, the amount of litter was almost 12 times that of the baseline average, but since this peak it has fallen considerably and since 2009 remained below 400 items per km^2. Sea-floor litter is dominated by plastics, which currently make up 78% of all sea-floor litter[5].

Indicator Assessment

Assessment of change in marine ecosystem integrity measures					
	Long term		**Short term**		**Latest year**
Marine ecosystem integrity (fish size class)[6]	≈	1983-2014	✓	2009-2014	Increased (2014)
Marine Litter	✗	1992-2016	✗	2011-2016	Increased (2016)

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[4] Historically, the collected concentrations data has shown considerable spatial variability. It is possible that the data may have also exhibited considerable year-on-year variation due to exogenous factors such as the weather. The indicator assessment should therefore be treated with caution.
[5] Based on a 3-year rolling average of the most recent data available.
[6] No updates, therefore the assessments remain the same as the 2016 publication.

Links to data and further information

Organisation	Subject
Defra	England Biodiversity Indicator 11: Marine biodiversity, ecosystems services and fish size Charting Progress: The State of UK Seas
European Environment Agency	State of Europe's seas Marine indicators Marine litter watch
British Oceanographic Data Centre	Home page
Marine Environmental Data and Information Network	Home page

4. Priority Species

There are 2,890 species defined as priority species in the UK. The criteria used for their identification include rapid declines in abundance.

Abundance

There are 215 priority species with robust quantitative time-series data of relative abundance (change in population size) available for this indicator[7]. By 2015, the index of relative abundance of these 215 species had declined to 32% of its value in 1970, a statistically significant decrease. Over this long-term period, 27% of priority species showed an increase and 73% showed a decline. Between 2010 and 2015, the index declined by 18% relative to its value in 2010; within this short-term period, 42% of priority species showed an increase and 58% showed a decline.

Distribution

There are 714 priority species[8] with robust quantitative time-series data of the proportion of occupied sites available for this indicator[9]. The distribution is assessed via an occupancy index which relates to the number of 1 km cells where the species concerned were recorded. Between 1970 and 2016, the index has been relatively stable with an even balance of priority species increasing and decreasing. The index value in 2016 was 5% higher than its value in 1970, however this increase is not statistically significant.

Changes to this section

A more detailed analysis and further background information on priority species are included as part of indicators C4a and C4b within the UK biodiversity indicator suite.

Prior to the 2016 ENEI publication, this topic included habitats, although no indicator assessments were ever made.   Information and commentary on these can be still found in indicator 2 within the England Biodiversity Indicators National Statistics publication.

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[7] These include birds (103), moths (80), butterflies (21) and mammals (11).

[8] Note that this is a substantial increase in the number of species included in the indicator relative to the 2016 publication.

[9] These include amongst others, bryophytes (201); lichens (191); bees, ants and wasps (94); moths (38); other insects (112); and fish (12).

Indicator Assessment

Assessment of change in Status of priority species UK			
	Long term	**Short term**	**Latest year**
Relative abundance of priority species	⊗ 1970-2015	⊗ 2010-2015	No change (2015)
Distribution of priority species	≈ 1970-2016	≈ 2011-2016	Increased (2016)

Links to data and further information

Organisation	Subject
Defra	England Biodiversity Indicator 4: status of priority species
Joint Nature Conservation Committee	Relative abundance indicator Distribution indicator

5. Land-use

Our land is used for many purposes including agriculture, forestry, recreation and housing. There are a number of data sources that allow an investigation of how this resource is being used. These include sector specific data sets, such as those with an agricultural focus and more generic sources coving all land types. Land cover map 2015 (LCM2015[10]), released in April 2017, is the new high resolution land cover map that provides land cover information for the entire UK derived from satellite images and digital cartography. The lower resolution Corine land cover map, based on the analysis of satellite images collected as part of the Copernicus program is also available. This map was last updated for the 2012 reference year. For this publication, the assessment of land use is limited to the active management of woodland.

Woodland management[11]

In England there were 1.31 million hectares of woodland in March 2017[12], however not all of it is actively managed. There was a gradual increase from 52% of woodland in active management in 2011 (the baseline year) to 58% in 2015. From 2015 to 2017, the figure has remained steady at 58%. It remains the "aspiration" of the Forestry Commission to have two-thirds of woodland in management by the end of 2018. Currently the only forestry delivery area achieving this aspiration is the North East and Yorkshire (69%), whilst the 2 southern delivery areas both record figures of less than 55%.

Indicator Assessment

Assessment of change of land-use			
	Long term[13]	Short term	Latest year
Change in percentage of woodland in active management	⊙	✓ 2012-2017[14]	No change (2017)

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[10] This is the fourth map in the series following products based on 1990, 2000 and 2007 maps.

[11] It should be noted that the woodland management indicator published in the England Biodiversity Indicators reports the percentage of 'sustainably' managed woodland rather than the percentage of 'actively' managed woodland in England.

[12] To set this in context 1.3 million hectares is roughly half the area of a medium sized county like Cheshire, Durham or Dorset.

[13] While the first figure is from 2008 regular data collection was only from 2011. The Forestry Commission consider this as the baseline year and therefore no long-term assessment has been made.

[14] Snapshot figure as at 31 March in the relevant year

Links to data and further information

Organisation	Subject
Defra	Government Policy on Forestry Agri-environment indictor C2 Agricultural land use
Department for Communities and Local Government	Live tables on land use change statistics Planning system
Office for National Statistics	Sustainable Development Indicators - Environment section, supplementary indicators 30: Land use
Centre for Ecology and Hydrology	Corine land cover 2012 CEH Land Cover Plus: Crops 2015 Land cover map 2015
Forestry Commission	Corporate Plan Performance Indicators and Woodland Indicators National Forest Inventory Woodland Area, Planting and Restocking statistics

6. Natural Stocks

There are 4 indicators covered under this topic. These are fish stocks, water abstractions and the carbon held in forests and the soil. Due to the absence of newly available data, the only portion of this indicator that has been updated is the section on water abstractions.

Fish Stocks

The indicator shows the percentage of fish stocks in seas around the UK that are both harvested sustainably and are at full reproductive capacity. The indicator is based on a group of 7 species, in 13 stocks, with reliable data. In 2013, 31% of these fish stocks around the UK (4 of the 13 stocks) were at full reproductive capacity and were being harvested sustainably. This is an increase from the 1990 to 1992 average of 24% (3 stocks out of 13).

Water abstractions

For 2017, the coverage for this indicator has been changed to England only (instead of England and Wales) and the full data series has been updated to reflect this change. The estimated abstraction of water from non-tidal surface water and groundwater in England in 2015 was 9.4 billion cubic metres. This is similar to the 9.2 billion cubic metres recorded in 2014. Relative to the 2000 to 2002 average, there has been a 16% reduction in abstractions in England. Regionally, there is a long-term trend for reductions in abstractions in all water regions except Anglian and the North West. The short-term (5-year) trend however does suggest a recent increase in abstractions, although the low volume of abstractions in 2011 explains some of this trend.

Over the period from 2000 to 2015, on average 55% of total abstractions in England were for public water supply. This is a change from the England and Wales distribution presented last year when the figure was 45%. In Wales the water usage for electricity supply is the dominant one (75%) whereas in England it only accounts for 20% of the usage. This explains the apparent increase in the proportion of abstractions used for public water supply.

Forest and soil carbon stocks

Carbon capture by forests is important in reducing climate change. The total carbon in UK forests increased between 1990 and 2015. This data is collected every 5 years and will next be updated by the Forestry Commission in 2020. The carbon stored in the first meter of the forest soil profile accounts for approximately 75% of total forest carbon.

The concentration of carbon in soils (0 to 15 cm) across all ecosystem types in England increased by a small amount between 1978 and 2007. More recent data are not currently available so a short-term assessment is not possible.

Indicator Assessment

Assessment of change in Natural stocks				
	Long term		**Short term**	**Latest year**
Sustainable fisheries[15]	✓	1990-2013	✓ 2008-2013	No change (2013)
Water abstraction[16]	✓	2000-2015	✖ 2010-2015	Little change (2015)
Forest carbon stocks[17]	✓	1990-2015	✓ 2010-2015	Not assessed
Soil carbon concentration (all habitats)[18]	≈	1978-2007	⋯	Not assessed

Links to data and further information

Organisation	Subject
Defra	England Biodiversity Indicator 23: sustainable fisheries England Biodiversity Indicator 9: removal of greenhouse gases by forests Water abstraction statistics
Countryside Survey	Soils Survey Report 2007
Forestry Commission	Forestry Statistics 2015 - Forest carbon stock
European Environment Agency	Use of freshwater resources indicator

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[15] No new data for fish stocks are available therefore the assessment remains the same as in the 2016 ENEI publication

[16] The indicator assessment for water abstraction should be treated with caution as it is very difficult to establish trends for this measure. The coverage for this indicator has been changed to England only instead of England and Wales. Therefore, due to data availability, the long-term comparison now relates to 2000 not 1991.

[17] The data is now collected at 5 year intervals for the UK so these figures were not updated in Forestry Statistics 2015. The assessment remains the same as in the 2016 ENEI publication.

[18] Soil carbon data come from the Countryside Survey which has not been repeated since 2007 therefore the long-term assessment remains the same as in previous publications and there are no short-term or latest-year assessments.

7. Raw Material Consumption

This indicator focuses on the use of renewable materials in our consumption. It has not been updated in 2017 due to the absence of new data. Biomass is material derived from living or recently living organic matter and is a renewable source of energy and material. A positive direction for this indicator is a lower overall consumption, alongside moving away from the consumption of finite materials to that of biomass, provided that biomass extraction is sustainable. Biomass consumption is measured in terms of its raw material equivalent (RME).

Total UK consumption = UK production + imports – exports

Net domestic UK consumption = UK production – exports

Total biomass consumption dropped from 188 million tonnes (mt) of RME in 2000 to 173 mt RME in 2013. This represents a 10% fall in consumption. The proportion of biomass consumption from imports has remained between 48% and 52% over the period from 2000 to 2013.

Since 2000, there has been a 24% increase in gross domestic product and a 22% decrease in raw material consumption. The strong negative correlation[19] between these two variables suggests that the reduced consumption could be due to higher resource efficiency.

Indicator Assessment

Assessment of change in Raw material consumption			
	Long term	**Short term**	**Latest year**
Raw material consumption[20] [21]	✓ 2000-2013	✓ 2009-2013	Increased (2013)

Links to data and further information

Organisation	Subject
Office for National Statistics	Experimental estimates of resource use Material consumption in the United Kingdom Environmental accounts

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[19] A correlation of - 0.73 with 14 data points is highly significant with a very low probability of occurring by chance alone (p = 0.002).

[20] The indicator assessment should be treated with caution due to the experimental nature of the statistic.

[21] There are no new data so the indicator assessments remain the same as in the 2016 publication.

8. Value of Ecosystem Services

This indicator aims to take account of the benefits that nature provides, some of which are not priced in the market place. In economic terms, nature can be thought of as an asset, or stock of capital, which has the capacity to generate goods and services that benefit, and are valued by, people. This indicator presents the value of the flow of 4 services (timber production, carbon sequestration, air filtration[22] and recreation[23]) that we obtain from UK woodland as a part of the natural capital of the country.

Experimental statistics (that should be interpreted with caution) show that the total value of all 4 services in 2015 was estimated at £2.3 billion, down from £2.8 billion in 2009 (in 2015 prices). Woodland accounts show that carbon, air quality and recreational benefits are over 9 times greater than the value of timber.

A partial and experimental estimate of the total value of woodland ecosystems in the UK is £90 billion in 2015. This estimate is based on the net present value of the expected future flows of the 4 main services over a 100 year period, using the social discount rate[24].

Indicator Assessment

Assessment of change in value of ecosystem services			
	Long term	**Short term**	**Latest year**
Value of UK woodland ecosystem services[25]	⊙	⊙	Not assessed

Links to data and further information

Organisation	Subject
Office for National Statistics	Environmental accounts

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[22] The estimates of the value of air filtration services provided by woodland have been significantly revised following new research published by the Office for National Statistics on 25 July 2017. The estimates take into account the spatial location of woodland as well as variations in climatic conditions and more up-to-date estimates of pollution deposition rates.

[23] The estimates of the value of recreation services provided by woodland have also been significantly revised in the light of a review commissioned by the Office for National Statistics and published on 30 November 2016. The new estimates are based solely on the travel costs incurred by day visitors to the natural environment. This methodology does not therefore place a value on those trips which do not involve expenditure on travel, or on visits involving overnight stays, and should be viewed as a conservative estimate of the overall value of recreational visits to woodland.

[24] HM Treasury (2003). The Green Book: Appraisal and Evaluation in Central Government

[25] These are experimental statistics which at this stage should be interpreted with caution. Therefore, no assessments have been made.

9. Integrating Biodiversity and Natural Environment Considerations into Business Activity

This indicator relates to the uptake of biodiversity and natural environment considerations in business activity in the UK. The data used for this indicator are currently only available for 3 years (2011 to 2013) so assessments are not yet possible. This indicator has not been updated in 2017 due to the absence of new data.

In 2013, 77% of responding large companies[26] had an Environmental Management System (EMS) in place, compared to 83% in 2012. Companies can have an EMS certified to ISO 14001[27] and 53% of large companies had such a certification in 2013. This is a small increase from the 2012 figure (51%).

Overall, 92% of large companies considered environmental issues within their supply chain in 2013, up from 78% in 2012. Of those companies considering environmental issues, 63% did so in a formal manner in 2013.

A more detailed analysis and further background information is available on the Joint Nature Conservation Committee indicator pages.

Indicator Assessment

Assessment of change in biodiversity considerations in business activity[28]			
	Long term	**Short term**	**Latest year**
Percentage of large companies that use an Environmental Management Scheme	⊙	⊙	Decreased (2013)
Percentage of companies where the environment is formally considered in the supply chain	⊙	⊙	Increased (2013)

Links to data and further information

Organisation	**Subject**
European Environment Agency	European level indicator on the number of organisations with registered environmental management systems
Joint Nature Conservation Committee	Business considerations indicator

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[26] Companies with at least 250 employees

[27] ISO 14001 is the standard that covers the design and implementation of an EMS. It is a framework designed to measure and improve the way natural resources are used and disposed of by an organisation. It is a generic standard applicable to organisations of all shapes and sizes from large construction and manufacturing business to small service based companies.

[28] These assessments have not been updated in 2017.

10. Public Engagement with the Natural Environment

This topic contains 3 separate indicators: visits to the natural environment; visits by children; and, time spent volunteering for conservation.

Visits to the natural environment[29]

This indicator assesses public engagement with the natural environment by estimating the frequency of visits to the natural environment by the adult population in England. During the period March 2009 to February 2010, one-third of adults living in England claimed to visit the outdoors more than once per week. During the same period in 2014/15, this proportion had increased significantly by 4 percentage points to 37%. The small decrease in the proportion visiting more than once a week between 2014/15 and 2015/16 is within statistical margins of error.

The proportion of people who visit the natural environment several times or more a week varies across England with more than 40% of people living in the South East and South West regions visiting the natural environment several times a week. Outside of London, the West Midlands region had the lowest proportion of people visiting the natural environment several times a week than any other region in almost every year from 2009/10 to 2015/16.

The proportion of visits to the outdoors taken with at least one child present has not varied significantly since the period March 2009 to February 2010 when it stood at 22%. Since then the proportion has fluctuated by as little as 1 or 2 percentage points, and during the period March 2015 to February 2016 stood at 20%. Likewise, the mean number of children present during a visit has not changed significantly over time – varying between 2.0 and 2.1 in every year apart from 2009/10 when the figure was 2.6. This indicator requires further methodological development work before a robust short-term assessment can be made.

Time spent volunteering

The amount of volunteer time spent undertaking conservation activities is based on information from 10 major organisations across the environmental sector in England. The work undertaken by conservation volunteers includes assisting with countryside management, carrying out surveys and inputting data, assisting with administrative tasks, and fundraising. The index of time spent volunteering increased rapidly from 2001[30] until 2011 and although the index has declined considerably since then, its level in 2015 is still 13% higher than it was in 2000.

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[29] The figures presented in the commentary represent results that have been weighted and grossed to the population of adults (aged 16 and over) resident in England. Previous results published in this series used unweighted estimates. Although this means changes to previously published results, the effect is small – in most cases less than 1.5% – and the overall patterns and trends remain unchanged.

[30] Restrictions on access to the countryside in 2001 due to the outbreak of Foot and Mouth disease resulted in a sharp fall in the index between 2000 and 2001.

Indicator Assessment

Assessment of change in public engagement with the natural environment			
	Long term	**Short term**	**Latest year**
Proportion of people visiting the natural environment several times a week or more	⚫	✅ 2010/11-2015/16[31]	Decreased (2015/16)
Number of visits made by children[32]	⚫	⚫	Decreased (2015/16)
Conservation volunteering	✅ 2000-2015	❌ 2010-2015	Little change (2015)

Links to data and further information

Organisation	Subject
Defra	England Biodiversity indicator 13: public engagement
Natural England	Monitor of Engagement with the Natural Environment
National Ecosystem Assessment	Home Page

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[31] Data collected for survey years (March to February)

[32] This indicator requires further methodological development work before a robust short-term assessment can be made.

11. Environmental Quality and Health

Poor air quality can have effects on health and wellbeing due to both short-term and long-term exposure. The number of days when air pollution is classified as "moderate or higher"[33] is an indicator of how often air quality is reduced to levels when there is an increased risk of health effects from short-term exposure. There were, on average, fewer days of moderate or higher pollution at urban pollution monitoring sites in 2016 compared with any other year since 2010. The average number of pollution days declined from 24 days in 2011 to 8 days in 2016. The previous lowest level was 10 days in 2015. There is no clear trend in the number of days of moderate or higher air pollution at rural sites but the figure was 12 days in 2016, which is marginally higher than in 2015. The main drivers of the average number of days when air pollution is moderate or higher are particulate matter (specifically PM_{10}[34]) and ozone (O_3), for urban and rural pollution monitoring sites in the UK respectively.

Long-term exposure to air pollution can have adverse effects on health. The Public Health Outcomes Framework Indicator for England, produced by the Department of Health, estimates this long term health burden for different parts of England. In 2015, 4.7% of all deaths for people over the age of 30 in England were attributable to long-term exposure to current levels of anthropogenic $PM_{2.5}$[35]. This is the first time that the figure dropped below 5% since the data series started in 2010[36] and in all regions except the South West the figures are at their lowest in the series.

The Public Health Outcomes Framework also includes information about noise complaints and exposure to transport noise. There are a number of direct and indirect links between exposure to noise and health outcomes such as stress, heart attacks, and other health and wellbeing issues. In 2014/15, there was an average of 7.1 complaints about noise per 1,000 people in England. This figure has declined from 7.8 in 2006/07. At 16.8 complaints about noise per 1,000 people, the rate in London is considerably higher than in any other region, but like all regions except the North East there is a decreasing short-term trend for noise complaints.

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[33] Defined using the Daily Air Quality Index (DAQI) – see Air quality statistics for details

[34] Particulate Matter less than or equal to 10 micrometers in diameter

[35] Particulate Matter less than or equal to 2.5 micrometers in diameter - so small that they can be carried deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases.

[36] Although the air quality data series extends back to 1987, on 1 January 2012, the air pollution bandings and the suite of air pollutants used were changed. Figures were only retrospectively calculated back to 2010 preventing any long-term analyses. See Air quality methodological changes for details.

Indicator Assessment

Assessment of change in Environmental quality and health	Long term	Short term		Latest year
Number of air pollution days classed as moderate or higher - urban	⋯	✓	2010-2015	Decreased
Number of air pollution days classed as moderate or higher - rural	⋯	≈	2010-2015	Increased
Mortality caused by anthropogenic air pollution[37]	⋯	⋯		Decreased
Percentage of the population affected by noise	⋯	✓	2008/09 - 2014/15	Decreased (2014/15)

Links to data and further information

Organisation	Subject
Defra	Air quality statistics
Department of Health	Public health outcomes framework[38] [39]
World Health Organisation	Guidelines for community noise
European Environment Agency	Signals publication Air pollution indicators Air quality in Europe 2016 SOER 2015: Health and environment Managing exposure to noise in Europe Environmental indicator report 2016

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[37] This indicator has a very short time series and requires further methodological development work before robust assessments can be made.

[38] Indicator 3.01 - Fraction of mortality attributable to particulate air pollution, 2013

[39] Indicator 1.14i - The rate of complaints about noise, 2013/14

Annex A. Acronyms

BCT   Bat Conservation Trust

BODC   British Oceanographic Data Centre

BTO   British Trust for Ornithology

CEH   Centre for Ecology and Hydrology

Corine   Coordination of information on the environment

DAQI   Daily Air Quality Index

DCLG   Department for Communities and Local Government

Defra   Department for the Environment, Food and Rural Affairs

EA   Environment Agency

EEA   European Environment Agency

EMS   Environmental Management System

ENEI   England Natural Environment Indicators

EU   European Union

FC   Forestry Commission

GDP   Gross Domestic Product

ISO   International Organisation for Standardisation

JNCC   Joint Nature Conservation Committee

LCM   Land Cover Map

MEDIN   Marine Environmental Data and Information Network

MENE   Monitor of Engagement with the Natural Environment

NE   Natural England

NEA   National Ecosystem Assessment

NEWP   Natural Environment White Paper

ONS   Office for National Statistics

PHOF   Public Health Outcomes Framework

RME   Raw Material Equivalent

RMC   Raw Material Consumption

SDI   Sustainable Development Indicators

SOER   State of the Environment Report

WFD   Water Framework Directive

WHO   World Health Organisation

Annex B. National Statistics

The following statistics presented in this 2017 update of ENEI are sourced from publications which have been designated as National Statistics:

- Species in the wider countryside: breeding farmland birds

- Species in the wider countryside: breeding woodland birds

- Species in the wider countryside: breeding wetland birds

- Species in the wider countryside: wintering water birds

- Species in the wider countryside: breeding seabirds

- Public engagement with the natural environment: proportion of people visiting the natural environment several times a week or more

- Public engagement with the natural environment: number of visits made by children

- Environmental quality and health: number of air pollution days classed as moderate or higher – urban, and

- Environmental quality and health: number of air pollution days classed as moderate or higher – rural

This means that the UK Statistics Authority, which was given a statutory power to assess statistics against the Code of Practice for Official Statistics in the Statistics and Registration Service Act 2007, has assessed the aforementioned indicators as complying with this code of practice. The code is wide-ranging, but designation can broadly be interpreted as meaning that the statistics meet identified user needs, are well explained and readily accessible, are produced according to sound methods and are managed impartially and objectively in the public interest.

The UK Statistics Authority's assessment of these indicators, alongside other environmental statistics, can be found in its reports on Statistics on Sustainability and the Environment in England and the UK (Department for Environment, Food and Rural Affairs) and Statistics on Engagement with the Natural Environment (Natural England), and in the accompanying letters confirming their status as National Statistics.

Designation does not mean that all the individual statistics presented in this publication are National Statistics in their own right; it only relates to the statistics listed above.