

# UK Biodiversity Indicators 2019

This document supports  
C1. Protected areas

## Fiche

For further information on C1. Protected areas visit [jncc.gov.uk/ukbi-C1](https://jncc.gov.uk/ukbi-C1)

For further information on the UK Biodiversity Indicators visit [jncc.gov.uk/ukbi](https://jncc.gov.uk/ukbi)

## C1. Protected areas

### a. Total extent of protected areas: on land

### b. Total extent of protected areas: at sea

### c. Condition of Areas/Sites of Special Scientific Interest

**Type:** Extent – Response Indicator;

Condition – State/Response Indicator

#### Summary

The total extent of land and sea protected in the UK through national and international protected areas, and through wider landscape designations, has increased by 7.4 million hectares, from 21.2 million hectares (ha) in December 2014 to 28.6 million hectares at the end of May 2019 (Figure C1i).

This increase is almost entirely down to the designation of inshore and offshore marine sites under the European Union (EU) Habitats Directive, the designation of Marine Conservation Zones (MCZ) in English, Welsh, and Northern Irish waters, and designation of Nature Conservation Marine Protected Areas (NCMPA) in Scottish waters. The extent of protected areas on land has increased by 11,200 hectares since 2014.

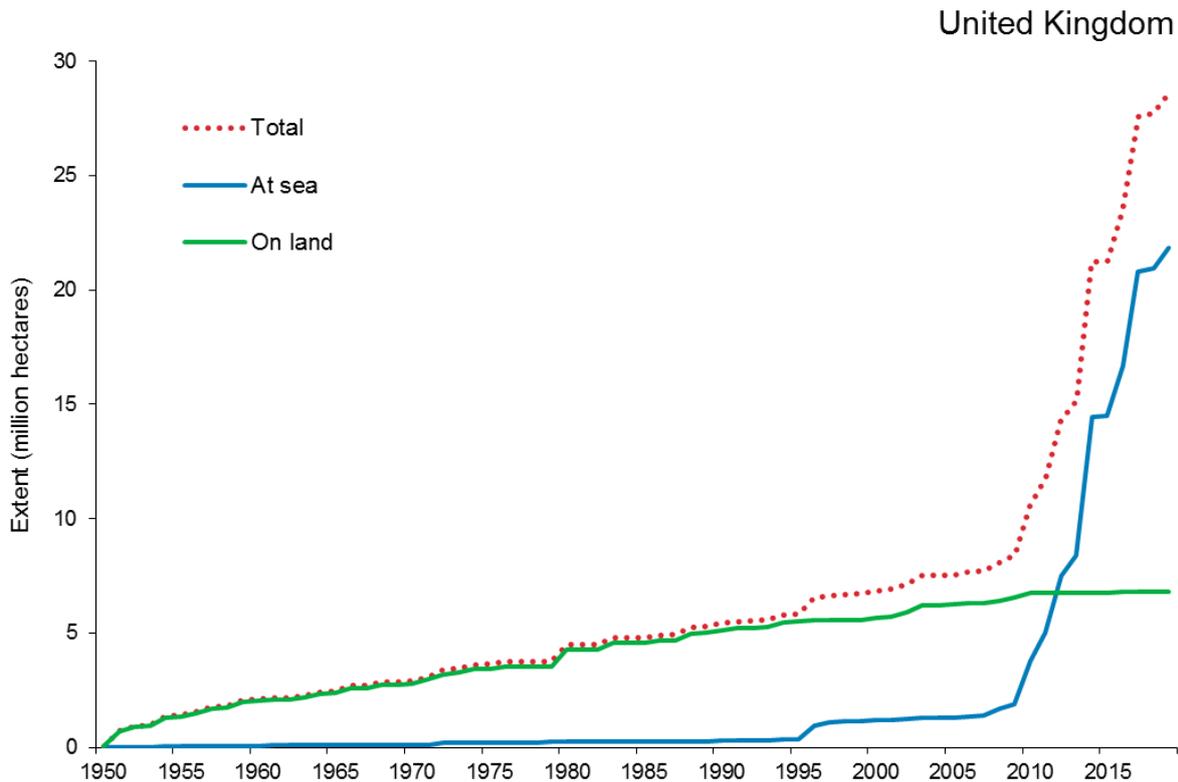
The percentage of features, or area, of Areas or Sites of Special Scientific Interest (A/SSSIs) in favourable or unfavourable-recovering condition increased from 67% in 2005, to 86% in 2014, and remained stable at 85% in 2019 (Figure C1ii). The proportion of features or area of land in unfavourable-recovering condition (the light blue part of Figure C1ii) has increased from 14% in 2005 to 35% in 2019. These changes reflect improved management of sites, but may also be affected by a greater number of sites/features having been assessed over time.

#### Indicator Description

This indicator shows the extent of UK protected areas both on land and at sea. The 2 extent measures are a calculation of the net (non-overlapping) extent of protected areas using mean high water as the boundary between the on-land and at-sea measures.

The indicator also shows the condition of terrestrial and coastal features on Areas or Sites of Special Scientific Interest (A/SSSIs). A/SSSIs are designated for their 'features' – habitats or species which give them their scientific interest. Each country in the UK assesses the condition of features and reports either the area or the number of features in favourable or unfavourable-recovering condition. These assessments are converted to percentages in this indicator, to allow them to be combined, but the percentage does not equate exactly to the area that is favourable or unfavourable-recovering.

**Figure C1i. Extent of UK nationally and internationally important protected areas: (a) on land and (b) at sea, 1950 to 2019.**

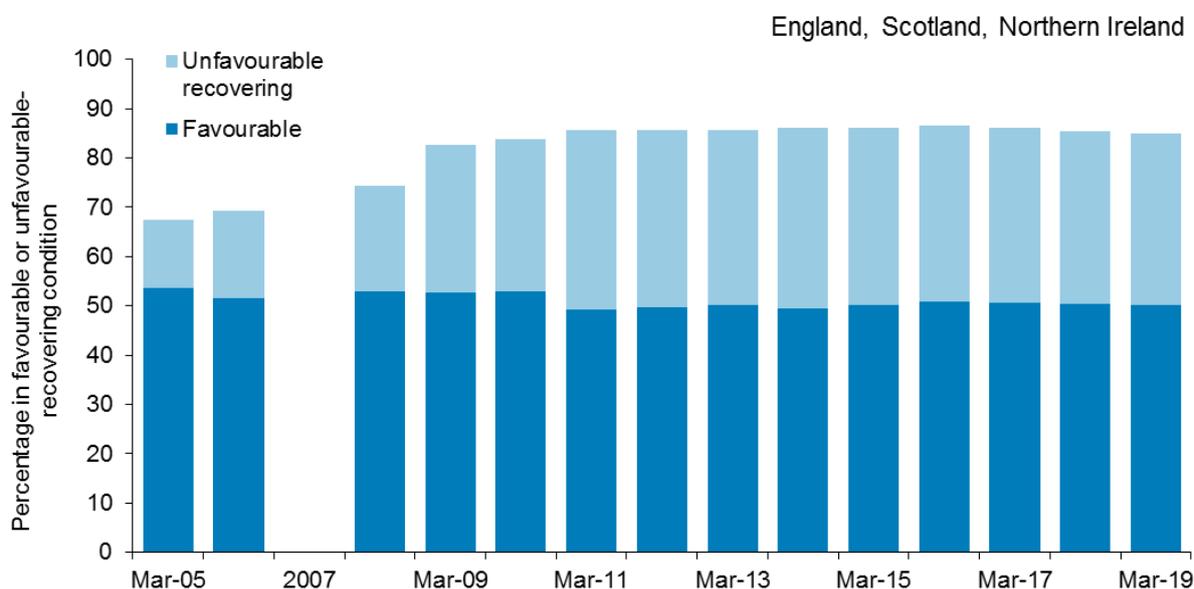


**Notes:**

1. The boundary between protected areas on land and at sea is mean high water (mean high water spring in Scotland). Coastal sites in the indicator are split between 'on land' and 'at sea' if they cross the mean high water mark. At-sea extent includes offshore marine protected areas out to the limit of the UK continental shelf. The area of UK sea is calculated at 88,613 million hectares.
2. Based on calendar year of site designation. For 2019, the data cut-off is 31 May. The calculation method and projection of spatial areas has changed since the last publication of this indicator (2018); these data are therefore not directly comparable to those presented in previous publications (see the 'Indicator description, Extent' section for further details).
3. Extent is based on the following site designations: Areas of Special Scientific Interest (Northern Ireland), Sites of Special Scientific Interest (England, Scotland and Wales), National Nature Reserves, Marine Conservation Zones, Nature Conservation Marine Protected Areas, Ramsar Sites, Special Areas of Conservation (including candidate Special Areas of Conservation and Sites of Community Importance), Special Protection Areas, Areas of Outstanding Natural Beauty, National Scenic Areas, National Parks.

**Source:** Joint Nature Conservation Committee, Natural England, Natural Resources Wales, Northern Ireland Environment Agency, Scottish Natural Heritage.

**Figure C1ii. Cumulative proportion of Areas of Special Scientific Interest (Northern Ireland) and Sites of Special Scientific Interest (England and Scotland) in 'favourable' or 'unfavourable-recovering' condition, 2005 to 2019.**



**Notes:**

1. England figures based on area. Scotland and Northern Ireland figures based on number of features.
2. Based on data to the end of March, except in 2006 and 2008, when data are to end of December. Data were not collated in 2007.
3. Imputation has been used to calculate the breakdown between favourable and unfavourable-recovering for Northern Ireland for the years 2009 to 2011.
4. Figures exclude condition of A/SSSIs notified for geological features only.

**Source:** Natural England, Northern Ireland Environment Agency, Scottish Natural Heritage.

Assessment of change in extent and condition of UK protected areas			
	Long term	Short term	Latest year
Total extent of protected areas: on land	✓ 1950–2019	≈ 2014–2019	No change (2019)
Total extent of protected areas: at sea	✓ 1950–2019	✓ 2014–2019	Increased (2019)
Condition of A/SSSIs.	✓ 2005–2019	≈ 2014–2019	No change (2019)

**Note:** Assessment of this indicator is based on comparison of latest data point with a 3-year average from the baseline, using the 3 earliest consecutive years available. See '[Assessing Indicators](#)' for details.

## Indicator description

### Extent

The indicator was expanded in 2014 to include wider landscape designations (Areas of Outstanding Natural Beauty (AONBs), National Scenic Areas (NSAs), and National Parks), sites designated under the Convention on Wetlands of International Importance (Ramsar sites), and new Marine Protected Areas (MPAs). In 2015, National Nature Reserves (NNRs) were added to the indicator. As at the end of May 2019 (Table C1i), over 6.7 million hectares of land and freshwater have been designated under national and international legislation – representing 28% of the land area of the UK (Figure C1i). A further 21.8 million hectares of UK seas, both within the 12 nautical mile limit and offshore, have also been designated, representing 25% of UK waters (based on the UK continental shelf limit). In all cases when new designation types were added to the indicator, the series was recalculated to the start, so those new site types appeared in all years for which it was valid that they do so.

**Table C1i. Extent and percentage cover of protected areas by country, as at 31 May 2019, for all site types included in the indicator.**

	On land		At sea	
	Million ha	Percentage	Million ha	Percentage
England	3.440	26.4	9.172	39.9
Scotland	2.331	29.6	10.883	17.6
Wales	0.612	29.4	1.547	50.3
Northern Ireland	0.402	28.5	0.242	35.3
<b>United Kingdom</b>	<b>6.785</b>	<b>27.8</b>	<b>21.843</b>	<b>24.7</b>

For comparison, the same figures for the terrestrial A/SSSI, MCZ, NCMPA, NNR, Ramsar, Special Areas of Conservation (SAC) and Special Protection Areas (SPA) site designations are given in Table C1ii.

**Table C1ii. Extent and percentage cover of terrestrial protected areas by country, as at 31 May 2019 for A/SSSI, MCZ, NCMPA, NNR, Ramsar, SAC and SPA site designations.**

	On land	
	Million ha	Percentage
England	0.844	6.5
Scotland	1.424	18.1
Wales	0.221	10.6
Northern Ireland	0.140	9.9
<b>United Kingdom</b>	<b>2.629</b>	<b>10.8</b>

Table C1ii in effect excludes the landscape scale site types (AONBs, NSAs and National Parks). It only shows the terrestrial sites, as these are not considered to support marine features directly, so the marine figures would not change compared to table C1i.

The on-land extent measure shows an increase in 1980, reflecting the designation of 40 NSAs in Scotland. Terrestrial changes since 1995 mainly reflect the establishment of SACs and SPAs, plus the designation of 2 National Parks in Scotland in 2002/03. There has been a large increase in the extent of MPAs since 1995, but especially since 2010. In 1995 and 1996, the first set of sites under the EU Habitats Directive extending below mean high water were established. These inshore and coastal SACs may also have a terrestrial/freshwater component, but the calculations to create the indicator split them between the on-land and

at-sea lines in the indicator. Marine sites totalling 5 million hectares were designated in 2016 and 2017 for harbour porpoise. In May 2019, a third tranche of 41 MCZs in English and Welsh waters were designated covering a total of 1.17 million hectares.

In 2019, a new projection was used for the spatial data to provide consistency with figures being produced on MPAs. This has a negligible effect on the areas calculated. While drafting the fiche it was discovered that the 2018 results were in error due to a small shift in the spatial location of one of the designations when preparing the overlapping geometry, which led to an increase in the total area. This was corrected in the 2019 publication, but means that the results are not directly comparable with the previous publication.

More importantly, the basis for the split between the terrestrial and marine lines in the indicator was also amended in 2019. Previously the split between marine and terrestrial was taken to be at the high-water mark (see the technical document for details). However, this meant that sites which straddle the high-water mark contributed to both the marine and terrestrial extent lines, regardless of what features they protect above or below high-water. From 2019, a marine 'components' approach has been implemented. This identifies which sites protect features (or 'components') in the marine environment (below high water), and therefore qualify the site as a MPA. Sites which straddle the high-water mark continue to contribute to the terrestrial line, but only those with marine components contribute to the marine line. The main change to the indicator is to the rise in the extent measures in 1980, which was due to the designation of 40 NSAs in Scotland. This rise now only occurs in the terrestrial extent line, as these sites are not considered to be MPAs, even though their boundaries are drawn to include areas below the high-water mark. The entire series has been recalculated, so this is consistent between years in the presentation in the 2019 publication. Effectively this approach means that AONBs, NSAs, and National Parks only contribute to the terrestrial line, as they are considered as terrestrial designations only. In addition, intertidal areas for some other sites, such as SSSIs, will not be represented in either line as they are below high water (the terrestrial cut-off), but do not have marine features designated.

### Condition

A/SSSIs are designated with the aim of conserving specific biological or geological features. A monitoring programme was initiated in 1998 to evaluate the outcomes of management action and conservation policy. Under this programme, the condition of these features is assessed on a rolling cycle against agreed standards. The indicator (Figure C1ii) identifies the proportion of these features – by feature or by area – that are in a desired state (favourable) or have appropriate management but are yet to have regained their favourable status (unfavourable-recovering). The underpinning legislation for A/SSSIs extends to low water, so the condition part of the indicator is mainly based on terrestrial features.

The [first collation of results](#) (to March 2005) was published by the Joint Nature Conservation Committee in 2006. The cut-off date is 31 March each year unless otherwise stated. The condition graph is cumulative and includes assessments from a number of years. As new assessments are completed they replace the previous ones; so the graph is a snapshot of the condition of the site network at that point in time. Both unfavourable-recovering and favourable assessments are shown in the graph, as it will take many years to reverse previous declines in species populations, or to restore the ecological functioning of habitats.

Assessment of the condition indicator is based on the sum of favourable and unfavourable-recovering condition. The background section includes information for protected areas designated under the EU Habitats and Birds Directives. More detailed information is available on individual country websites (see web links below).

Improved analysis in 2017 allowed the weighting to be based on the extent of protected areas in the month of the condition data, rather than just the year, increasing accuracy.

### Relevance

Designation and management of protected areas are key mechanisms for taking action to reverse the loss of biodiversity. These protected areas cover many of the most valuable sites for biodiversity in the UK with associated legal mechanisms for safeguarding habitats and species. Wider landscape designations have a number of purposes, including conservation and public enjoyment.

In a densely populated country like the UK, where the landscape and habitats have been modified by centuries of use, protected areas often need to be actively managed to ensure the species and habitats they contain persist into the future. The condition indicator is a measure of the outcomes of management action and conservation policy on protected areas.

### Background

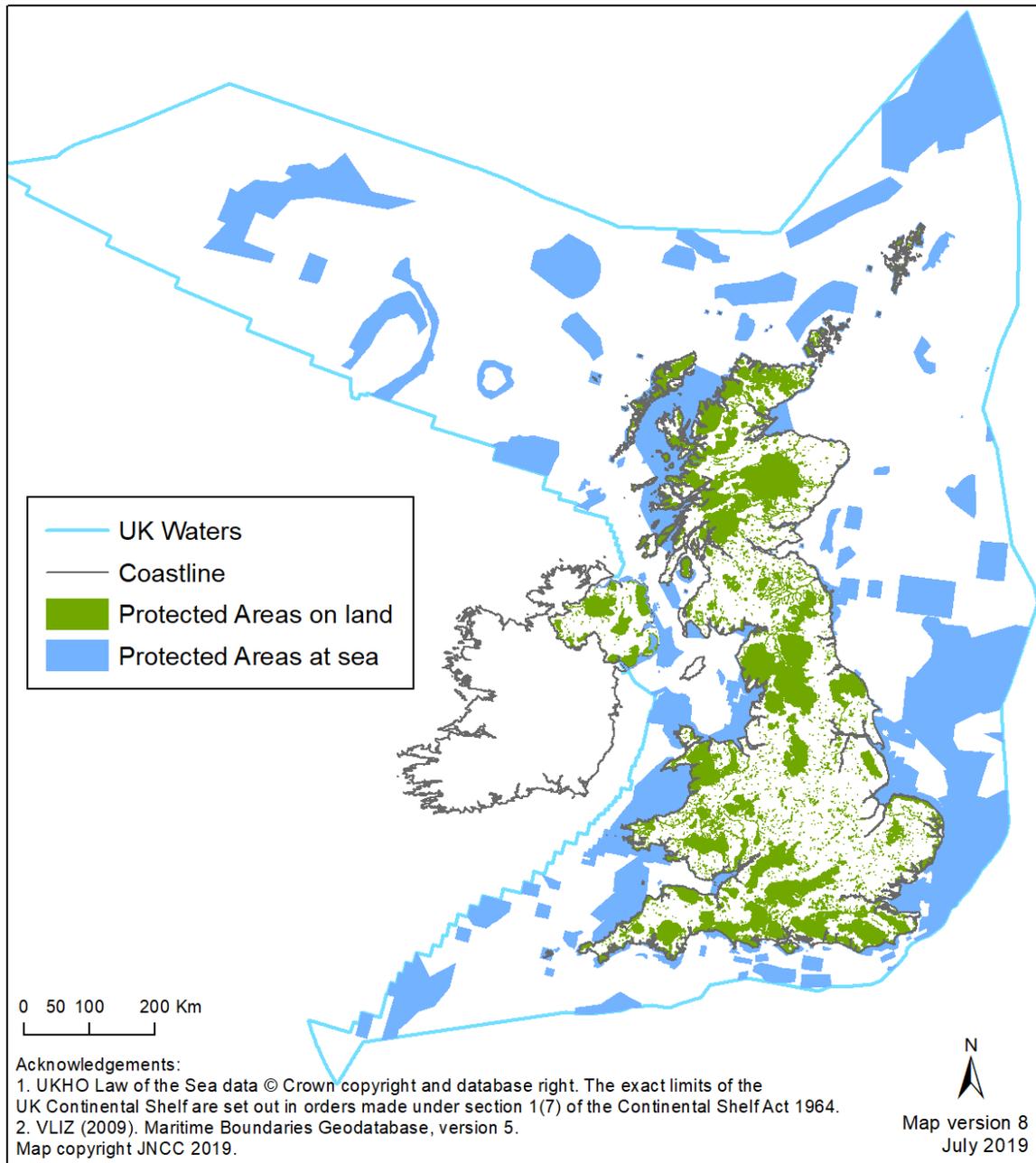
#### Extent

The extent of protected areas in Figure C1i is the combined (net) area of:

- nationally designated National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) in England, Scotland and Wales, and Areas of Special Scientific Interest (ASSI) in Northern Ireland;
- Marine Conservation Zones (MCZ) in English, Welsh and Northern Irish waters, and Nature Conservation Marine Protected Areas (NCMPA) in Scottish waters;
- internationally designated Special Protection Areas (SPA) and Special Areas of Conservation (SAC, including candidate Special Areas of Conservation and Sites of Community Importance) under the EU's Birds and Habitats Directives respectively, and sites designated under the Convention on Wetlands of International Importance (Ramsar); and
- wider landscape designations: Areas of Outstanding Natural Beauty (AONB) (England, Wales and Northern Ireland), National Scenic Areas (NSA) (Scotland), and National Parks (England, Scotland and Wales).

There is considerable geographic overlap between these designations: for example, many sites are designated as A/SSSI, SAC and SPA. Almost all Ramsar sites are underpinned by the A/SSSI designation, and most Ramsar sites are also SPAs. The calculation method used identifies non-overlapping areas or 'polygons', and thus ensures that each protected area contributes only once to the total area. Coastal sites are split at mean high water (mean high water spring for Scotland), and contribute to both the on-land and at-sea lines in Figure C1i as appropriate. The total line on Figure C1i is the net area of all of the protected areas (shown in Figure C1iii). Further information about individual site types can be found by following the web links given below.

Figure C1iii. Map of UK terrestrial and marine protected areas, as at 31 May 2019.



**Note:** Includes the following site designations: Areas of Special Scientific Interest (Northern Ireland), Sites of Special Scientific Interest (England and Scotland), National Nature Reserves, Marine Conservation Zones, Nature Conservation Marine Protected Areas, Ramsar Sites, Special Areas of Conservation (including candidate Special Areas of Conservation and Sites of Community Importance), Special Protection Areas, Areas of Outstanding Natural Beauty, National Scenic Areas and National Parks.

**Source:** Joint Nature Conservation Committee, based on its own data and data from Natural England, Natural Resources Wales, Northern Ireland Environment Agency and Scottish Natural Heritage.

### Condition

The UK-wide Common Standards Monitoring programme is undertaken by the statutory nature conservation bodies to assess the effectiveness of management action aimed at maintaining or restoring the features for which protected areas have been designated. The

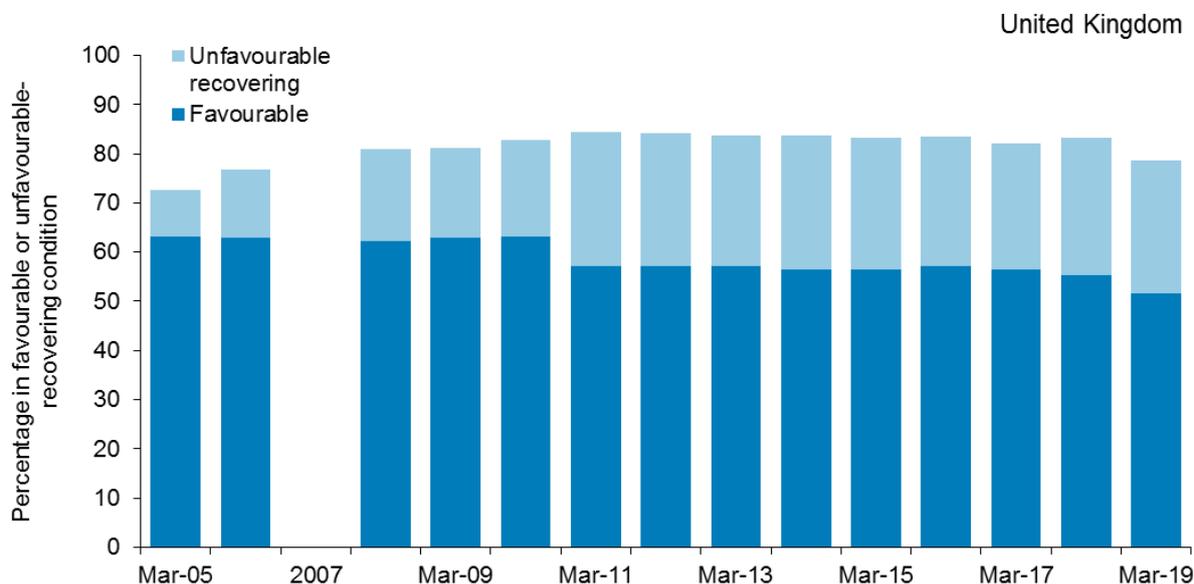
data presented for this indicator are for the biological (species and habitats) features only; the monitoring of condition of features is also undertaken for geological features. Conservation objective(s) (sometimes called performance indicators) will have been set for each feature or site. The monitoring tests whether these objectives have been met.

Sites may have one or more interest features on them and each of these is assessed separately. Conservation objectives (or performance indicators) are developed by identifying the key attributes which make up or support the feature (e.g. extent, quality, supporting processes), and setting targets for them. Each attribute is then measured and compared against the target value set. If all the targets are met, the feature is in favourable condition. Human activities which are likely to be affecting the site adversely, and the conservation measures taken to maintain or restore the site, are also recorded. Sampling and assessment methods may vary between countries.

In order to calculate a UK indicator, the country condition results, presented as the percentage in 'favourable' or unfavourable-recovering condition, have been weighted by the proportion of the protected area network in each country. In 2017, this weighting was adjusted to the end of the financial year (except for 2006 and 2008) to match the end of financial year date stamp of the condition data. Further details are available in the accompanying technical document.

Sites or features which have yet to be assessed are excluded from the indicator; effectively this means the indicator is based on terrestrial and coastal features. Figures C1iv and C1v provide analogous information to that in Figure C1ii, but for features protected on sites designated under the EU Habitats and Birds Directives respectively (SACs and SPAs).

**Figure C1iv. Cumulative proportion of Special Areas of Conservation (SAC) in 'favourable' or 'unfavourable-recovering' condition, 2005 to 2019.**



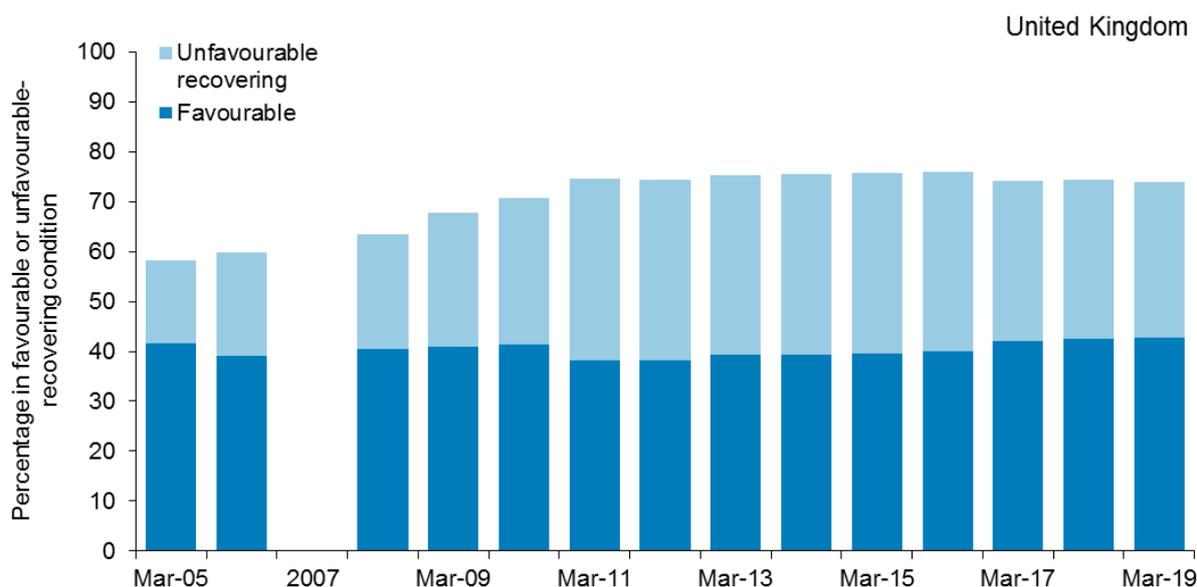
**Notes:**

1. England figures based on area; Scotland, Wales, and Northern Ireland figures based on number of features.
2. Based on data to the end of March, except in 2006 and 2008, when data are to end of December. Data were not collated in 2007.
3. Imputation has been used to calculate the breakdown between favourable and unfavourable-recovering for Northern Ireland for the years 2009 to 2011, and for Wales for the years 2008 to 2012.

4. Includes candidate Special Areas of Conservation and Sites of Community Importance (except Scotland). Includes coastal but not offshore sites.

**Source:** Natural England, Natural Resources Wales, Northern Ireland Environment Agency, Scottish Natural Heritage.

**Figure C1v. Cumulative proportion of Special Protection Areas (SPA) in 'favourable' or 'unfavourable-recovering' condition, 2005 to 2019.**



**Notes:**

1. England figures based on area; Scotland, Wales, and Northern Ireland figures based on number of features.
2. Based on data to the end of March, except in 2006 and 2008, when data are to end of December. Data were not collated in 2007.
3. The figures for December 2006 were calculated by imputation based on the figures in March 2005 and December 2008 for England, as a breakdown was not provided.
4. Includes coastal but not offshore sites.

**Source:** Natural England, Natural Resources Wales, Northern Ireland Environment Agency, Scottish Natural Heritage.

The proportion of European sites in favourable or unfavourable-recovering condition increased from 58% in 2005 to 74% in 2019 for SACs, and from 73% in 2005 to 79% in 2019 for SPAs. The proportion in unfavourable-recovering condition has increased from 17% in 2005 to 31% in 2019 for SACs, and from 9% to 27% for SPAs. This change reflects improved management of sites, but is also affected by a greater number of sites/features having been assessed over time. Significant effort has been put into targeted conservation effort, including agreement of the management required with land-owners/occupiers.

Note that there was a change in the weighting used for this measure (see technical document) since the publication in 2015, and that the results are not therefore directly comparable. Improved analysis in 2017 allowed the weighting to be based on the extent of protected areas in the month of the condition data, rather than just the year, increasing accuracy.

## Goals and targets

### Aichi Targets for which this is a primary indicator

**Strategic Goal C.** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.



**Target 11:** By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.

### Aichi Targets for which this is a relevant indicator

**Strategic Goal B.** Reduce the direct pressures on biodiversity and promote sustainable use.



**Target 5:** By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.



**Target 6:** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.



**Target 8:** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

**Strategic Goal C.** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.



**Target 12:** By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

### Web links for further information

Reference	Title	Website
Joint Nature Conservation Committee	Common Standards Monitoring Programme	<a href="https://jncc.gov.uk/our-work/common-standards-monitoring/">https://jncc.gov.uk/our-work/common-standards-monitoring/</a> <a href="https://hub.jncc.gov.uk/assets/15967de5-9da9-4d1f-b067-a8e76549bdca">https://hub.jncc.gov.uk/assets/15967de5-9da9-4d1f-b067-a8e76549bdca</a>

Reference	Title	Website
Joint Nature Conservation Committee	Broad information on Surveillance and Monitoring	<a href="https://jncc.gov.uk/our-work/the-uk-terrestrial-biodiversity-surveillance-strategy/">https://jncc.gov.uk/our-work/the-uk-terrestrial-biodiversity-surveillance-strategy/</a>
Natural England	Condition information	<a href="https://designatedsites.naturalengland.org.uk/">https://designatedsites.naturalengland.org.uk/</a>
Scottish Natural Heritage	Information service	<a href="https://www.nature.scot/information-library-publications-data-and-research">https://www.nature.scot/information-library-publications-data-and-research</a>
Natural Resources Wales	Protected areas of land and sea	<a href="https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en">https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en</a>
Department of Agriculture, Environment and Rural Affairs-Northern Ireland	Protected areas	<a href="https://www.daera-ni.gov.uk/topics/biodiversity-land-and-landscapes/protected-areas">https://www.daera-ni.gov.uk/topics/biodiversity-land-and-landscapes/protected-areas</a>
The National Association for Areas of Outstanding Natural Beauty	Introduction and links	<a href="http://www.landscapesforlife.org.uk/">http://www.landscapesforlife.org.uk/</a>
National Parks	Introduction and links	<a href="https://nationalparks.uk/">https://nationalparks.uk/</a>
National Scenic Areas	Nature Scotland, Introduction and links	<a href="https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/national-scenic-areas">https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/national-scenic-areas</a>
Marine Conservation Zones	Joint Nature Conservation Committee, Site Information	<a href="https://jncc.gov.uk/our-work/uk-marine-protected-area-datasets-for-download/">https://jncc.gov.uk/our-work/uk-marine-protected-area-datasets-for-download/</a>
Nature Protection Marine Protected Areas	Joint Nature Conservation Committee, Site Information	<a href="https://jncc.gov.uk/advice/marine-protected-areas/">https://jncc.gov.uk/advice/marine-protected-areas/</a>
Ramsar Convention	Joint Nature Conservation Committee, Site Information	<a href="https://jncc.gov.uk/our-work/ramsar-convention/">https://jncc.gov.uk/our-work/ramsar-convention/</a>

Full details of this indicator, including a datasheet and technical documentation are available at: [jncc.gov.uk/ukbi-C1](https://jncc.gov.uk/ukbi-C1)

**Last updated:** September 2019

**Latest data available:**

Extent data (C1a and C1b) – 31 May 2019

Condition data (C1c) – 31 March 2019