JOINT NATURE CONSERVATION COMMITTEE

Common Standards Monitoring
for Designated Sites: First Six Year Report

Species

Common Standards Monitoring for Designated Sites: First Six Year Report

Legislation in the United Kingdom makes provision for Sites of Special Scientific Interest (SSSIs) designated for their biological or geological features. By March 2005, there were 6,569 SSSIs in England, Scotland and Wales, and a further 225 Areas of Special Scientific Interest in Northern Ireland (ASSIs), covering between them over 2.4 million hectares.

The United Kingdom has also entered into international commitments to establish a network of protected sites under the Ramsar Convention. Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are required to be established under the EC Birds and Habitats Directives respectively. In many cases, the same area of land is protected by more than one designation; the basic building block is the SSSI or ASSI, which underpins the vast majority of the international site designations.

The basis of the common standards for site monitoring is that those special features for which the site was designated are assessed to determine whether they are in a satisfactory condition. The nature conservation component which is assessed is therefore not the site itself, but the feature (e.g. habitat, species, or earth science feature) for which it was designated. Sites may have one, two, or several interest features on them. Key attributes of the feature (e.g. extent, quality, supporting processes) are identified and targets set for each. 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 and other factors which are likely to be affecting the site adversely, and the conservation measures taken to maintain or restore the site, are also recorded.

The report is presented in four parts:

1. Summary
2. Geology
3. Species
4. Habitats

The first part is an introduction and executive summary which draws together results across the site networks as a whole. The subsequent three parts present the detailed data collated in 44 reporting categories. A standardised set of presentations and graphics have been created for each reporting category which portray the detailed results.

This information can also be found on the JNCC website at **www.jncc.gov.uk/page-3520**; these data will be updated at regular intervals.

Recommended citation:

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Mammals

Context

Mammal features on SSSIs can be notified if they qualify under criteria outlined in sections 3.1 - 3.4 of *Chapter 13 Mammals* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative. Sites are currently notified mostly for bats, otter and seals.

Sites for seals may be notified both for moulting haul-out or for breeding locations. The basis of site selection for otter is mainly breeding holts or holt complexes, together with the immediate surroundings and cover. For bats, both hibernating and breeding sites can be selected, in some cases for individual species, in others for an assemblage of breeding and hibernating species.

Sites are not notified directly for other mammals such as pine marten *Martes martes*, wildcat *Felis sylvestris*, polecat *Mustela putorius*, red squirrel *Sciurus vulgaris*, common dormouse *Muscardinus avellanarius*, yellow-necked mouse *Apodemus flavicollis*, Orkney vole *Microtus arvalis orcadensis* and lesser white-toothed shrew *Crocidura suaveolus*, but such species can be taken into account as attributes that enhance the value of sites that are notified predominantly for habitat or botanical features.
Mammals listed on Annex II of the EC Habitats Directive, and thereby qualifying as features for the selection of Special Areas of Conservation (SACs), are: lesser horseshoe bat *Rhinolophus hipposideros*, greater horseshoe bat *Rhinolophus ferrumequinum*, barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, bottlenose dolphin *Tursiops truncatus*, harbour porpoise *Phocoena phocoena*, otter *Lutra lutra*, grey seal *Halichoerus grypus* and harbour (common) seal *Phoca vitulina*.

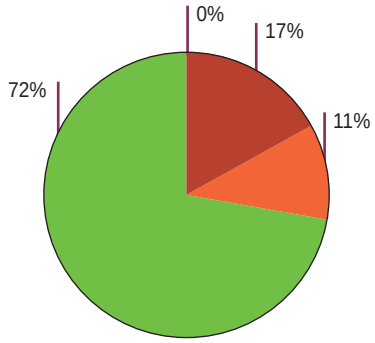
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition	65%	72%	67%
Main monitoring coverage	E, S	E, S	
Reported assessments	97	47	144
Completeness of assessments	66%	unknown	
Distribution of features			UK

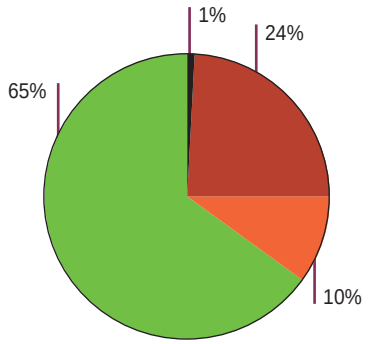
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	48	32
Scotland	42	15
Wales	7	0
Northern Ireland	0	0
United Kingdom	**97**	**47**

Condition assessment - SSSI features



Condition assessment - Natura 2000

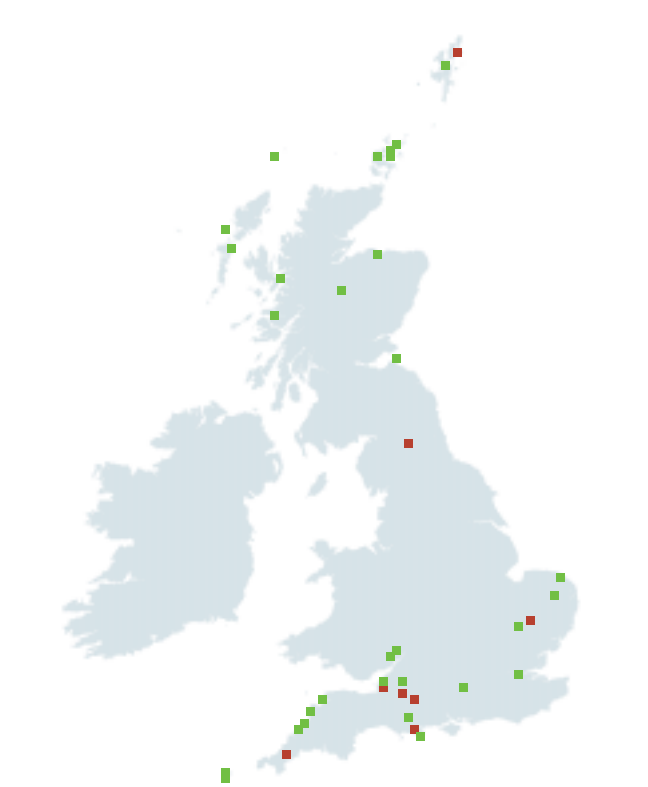


Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

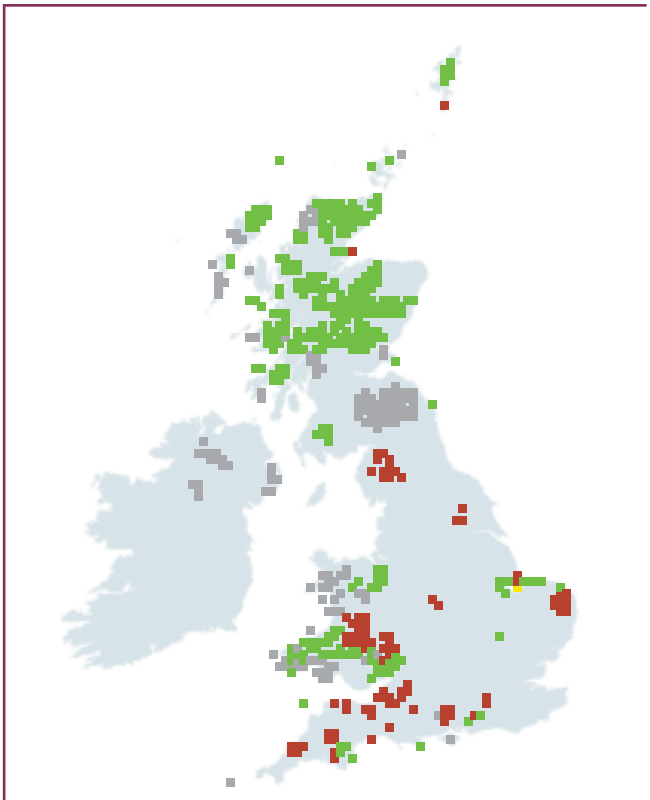
Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

SSSIs



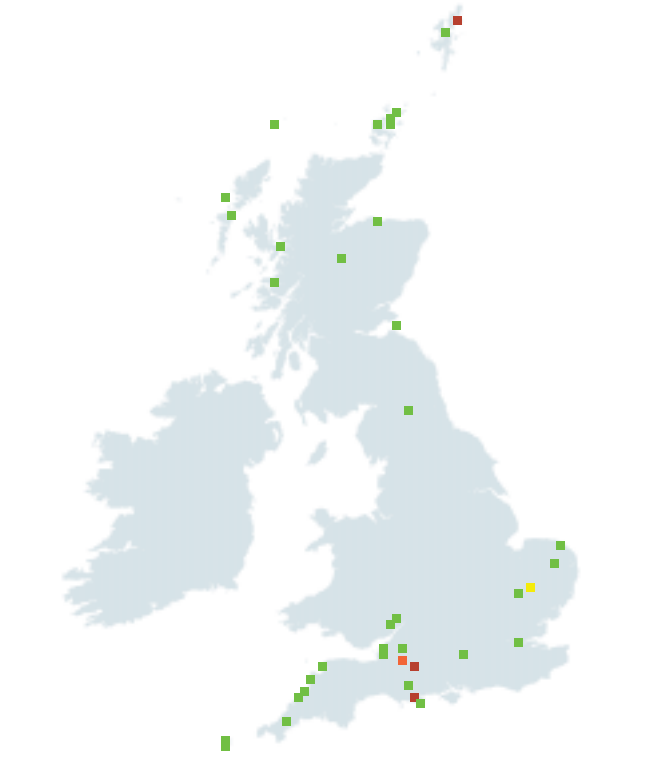
Current condition of SSSI/ASSI features

Natura 2000

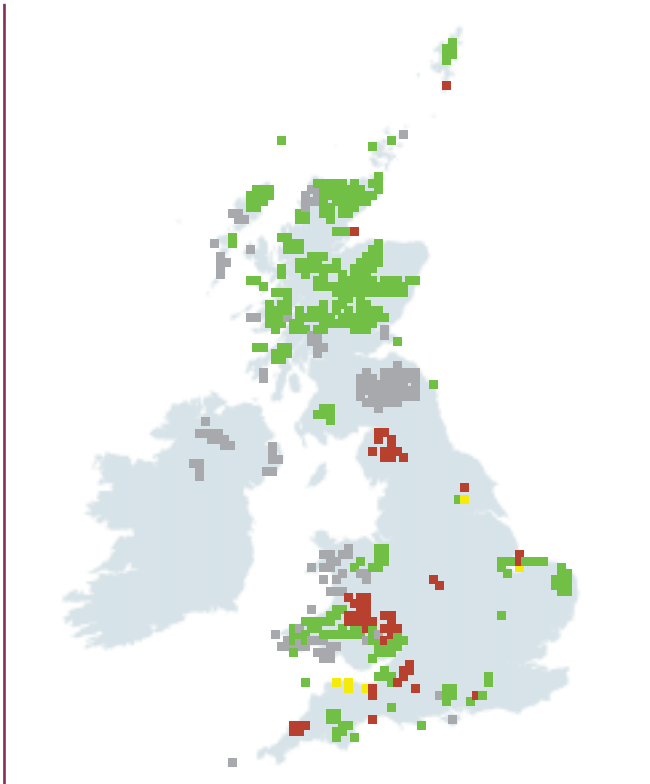


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

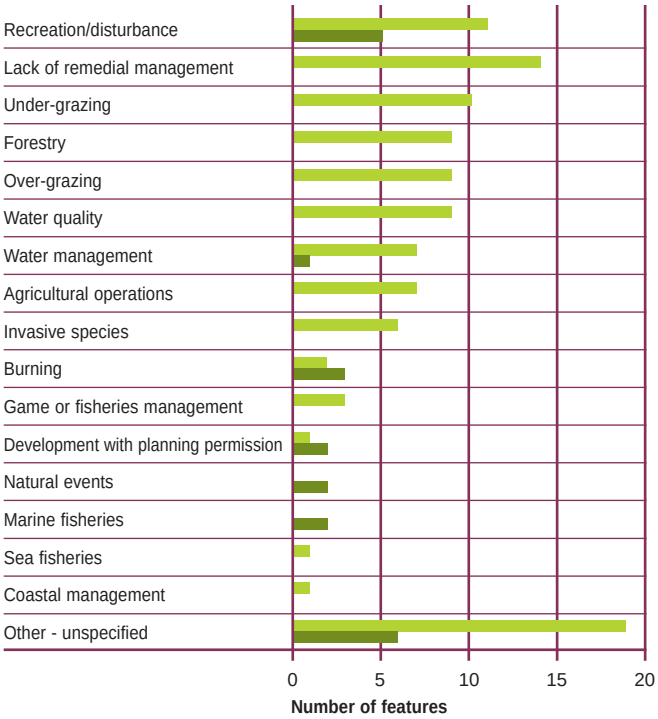
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20% Not assessed (Natura 2000 only)

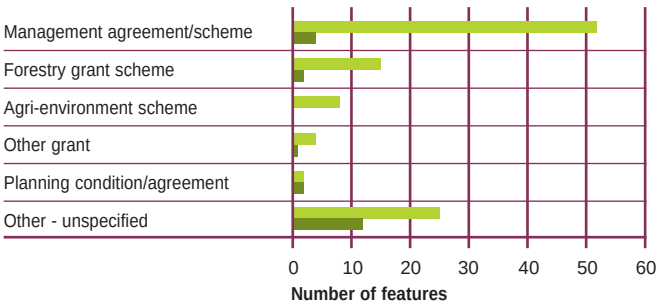
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

Overall 67% of the mammal features reported are in favourable condition. This is the average for species features but above the average for all features. 72% of the A/SSSI and 65% of the SAC features reported are in favourable condition. A further 11% of A/SSSI and 10% of SAC features reported are in unfavourable-recovering condition.

Bats

53% of bat features reported are in favourable condition. Two thirds of the sites notified for hibernating bat populations are reported as favourable. For greater *Rhinolophus ferrumequinum* and lesser horseshoe *Rhinolophus hipposideros* bats the corresponding figures are 47% and 53% respectively. Through the national bat monitoring programme, we know lesser horseshoe bat to be increasing - further investigation is therefore needed to ascertain why half of the features reported are unfavourable.

Bechstein's and barbastelle bats are restricted to England. Two-thirds of the barbastelle *Barbastella barbastellus* assessments reported are in favourable condition, which is encouraging for barbastelle conservation, a species poorly covered by other monitoring schemes. Conversely, only one of eight Bechstein's bat *Myotis bechsteini* sites is favourable. As one of the UK's rarest mammals the distribution and habitat preferences of this species are not well understood, however forestry practices and lack of remedial management measures, amongst others, appear to be the key threats. As all sites have management agreements it is hoped this trend will soon be reversed.

Otter

82% of the sites on which otter *Lutra lutra* is reported are in favourable condition. All of the otter SACs and SSSIs reported from Scotland are reported to be favourable, a recent national survey also found Scottish otter populations to be in good condition. In England only 4 of the 15 otter sites are favourable; however this does not match with other recent surveys which suggests their populations are recovering throughout large areas of their former range. Further information is therefore needed before any judgements can be made about how the site series is aiding otter conservation in England. In Wales, 5 sites are reported, all assessed as favourable.

Seals

77% of seal assessments reported are favourable. It is encouraging that many of the harbour seal *Phoca vitulina* and grey seal *Halichoerus grypus* sites are in a favourable condition in Scotland. In England all three grey seal sites reported are favourable but the one site for harbour seal (The Wash) is unfavourable-declining. Here the unfavourable status was attributable to natural causes rather than human activities. Harbour seal numbers have declined in The Wash in recent years as a result of the 2002 phocine distemper virus epizootic that reduced numbers by 22%.

Aggregations of breeding birds

Context

Breeding bird features on SSSIs can be notified if they qualify under criteria 3.1, 3.2, 3.6, and 3.8 of *Chapter 14 Birds* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

The criteria essentially cover:

- breeding aggregations which contain 1% or more of the national population of a species;
- smaller isolated colonies, e.g. of seabirds, herons and sand martins;
- upland species, e.g. waders;
- locations for rare species.

The *Selection Guidelines for Special Protection Areas* enable SPAs to be selected where an area is:

- used by 1% or more of the Great Britain (or in Northern Ireland the all-Ireland) population of a species on Annex I of the Birds Directive;
- used 1% or more of the biogeographic population of a migratory species, or;
- used by 20,000 individual breeding seabirds (seabird assemblage). Within the breeding seabird assemblage individual species may be separately listed as qualifying features if their populations exceed 1% of the national population or 2,000 individuals.

Breeding bird populations can also qualify under criteria 5 and 6 (formerly 3a and 3c) of the Ramsar Convention:

- Criterion 5. A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.
- Criterion 6. A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

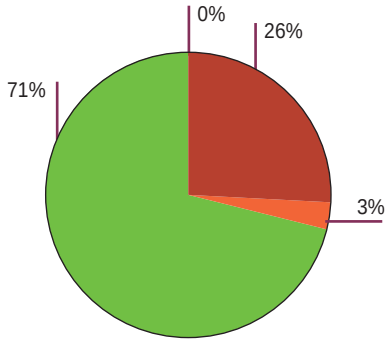
Summary statistics

	SPA	Ramsar	SSSI/ASSI	Total
Favourable condition*	76%	92%	71%	73%
Main monitoring coverage	S, W, NI	S, W, NI	S, NI	
Reported assessments	350	13	410	773
Completeness of assessments	57%	7%	unknown	
Distribution of features				UK

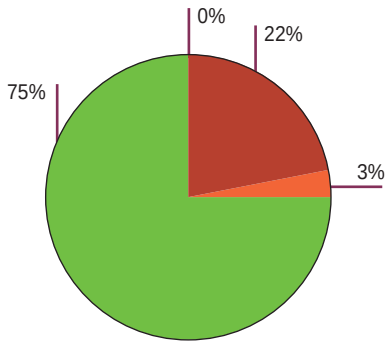
Number of assessments reported by country and site type

Country	SPA	Ramsar	SSSI/ASSI
England	0	0	42
Scotland	322	10	350
Wales	20	0	0
Northern Ireland	8	3	18
United Kingdom	**350**	**13**	**410**

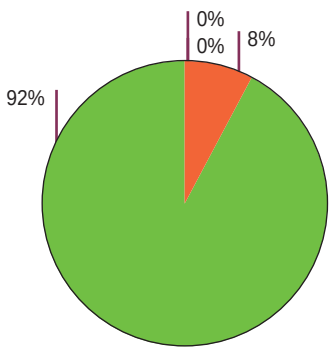
Condition assessment - SSSI features



Condition assessment - Natura 2000



Condition assessment - Ramsar



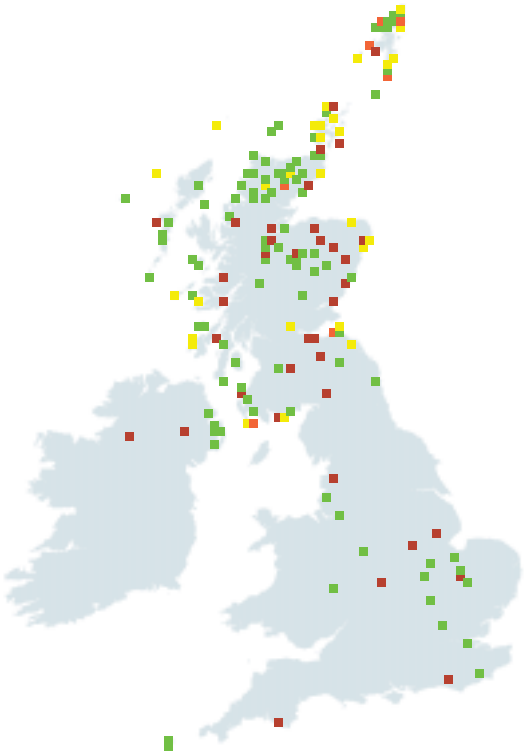
Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

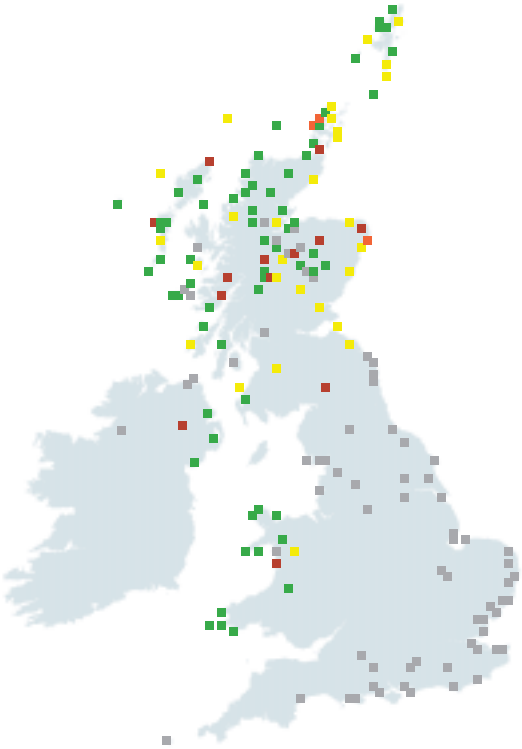
**Note: the figure for favourable condition in the pie charts is marginally different from that shown in the summary statistics table - this is a result of rounding to show small segments effectively; the figures in the summary statistics table are correct.*

SSSIs



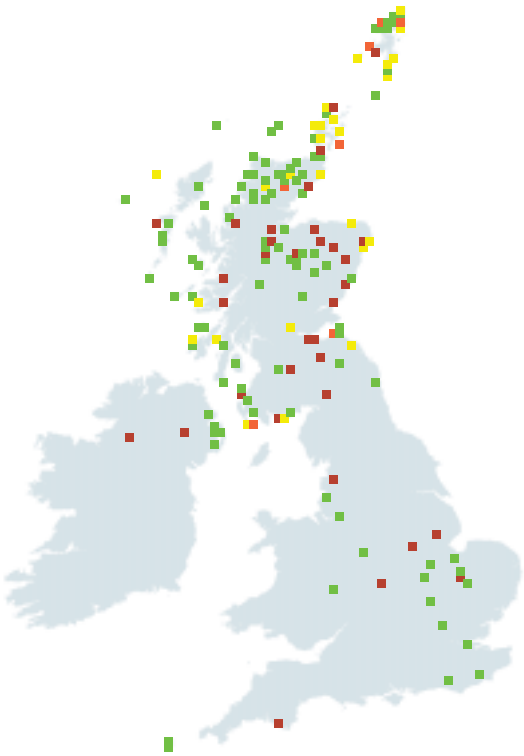
Current condition of SSSI/ASSI features

International

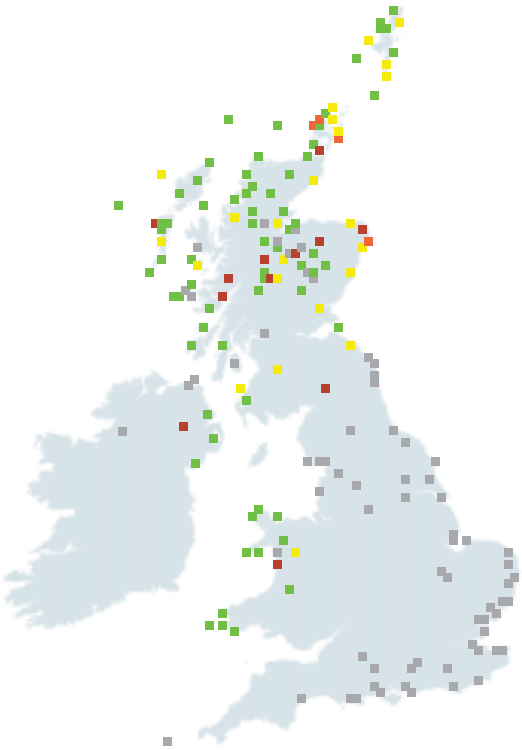


Current condition of SPA and Ramsar features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SPA and Ramsar features, with those currently reported as unfavourable-recovering shown as 'favourable'

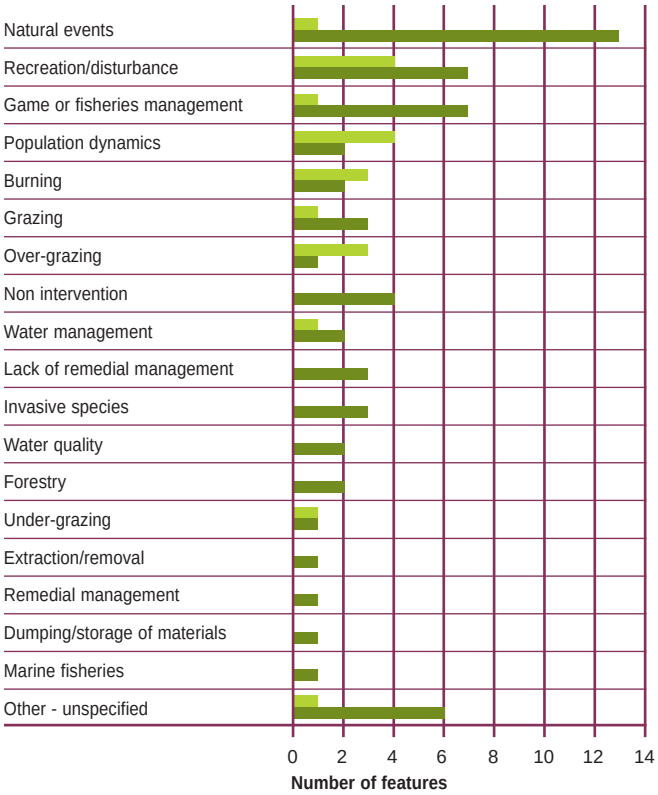
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% | 50-80% | 20-50% | 0-20% | Not assessed (Natura 2000 only)

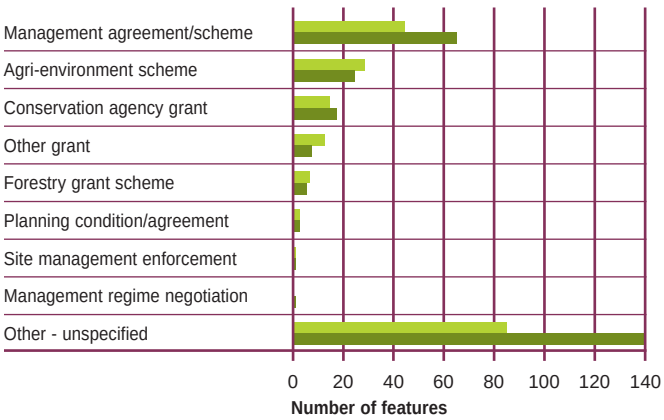
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

73% of breeding bird features reported are in favourable condition. This is above the average for species features and well above the average for all features combined. 71% of A/SSSI features and 76% of SPA features reported are in favourable condition. A further 3% of features reported for each of these types of sites are unfavourable-recovering. 92% of Ramsar features reported are in favourable condition, with a further 8% unfavourable-recovering. Within these figures, details include:

- 90% of diver features reported are in favourable condition. Breeding divers (Gavidae) are restricted to Scotland. Two SPAs have unfavourable black-throated diver *Gavia arctica* features. The adverse activities mentioned for divers include water management and over-grazing. These relate to the need to ensure sympathetic management around the small lochans where these species typically breed.

- 76% of wader features reported are in favourable condition. No adverse activities were specifically reported for these species.

- 71% of seabird features reported are in favourable condition. Within this grouping, fulmar, shearwaters and petrels are 81% favourable, terns 61%, auks 77%, and gulls 51%. A number of breeding seabirds are doing well within the SPA network, with generally favourable assessments, including common guillemot *Uria aalge*, razorbill *Alca torda*, northern gannet *Morus bassanus*, northern fulmar *Fulmarus glacialis*, great skua *Catharacta skua* and Atlantic puffin *Fratercula arctica*. However, for many seabirds there are mixed fortunes with a considerable number of colonies with unfavourable numbers. This is not unsurprising given that many populations have been shown to be in decline, largely as a result of declining food availability. Population dynamics, fisheries management, natural events and recreation and disturbance are all mentioned as activities linked with unfavourable condition.

- 78% of bird of prey features reported are in favourable condition. Hen harriers *Circus cyaneus* are features in 14 SPAs; the condition of eight of these populations was reported. At six of these sites, hen harrier numbers are in favourable condition. Taking account of all assessments reported, including those on SSSI sites, 61% are in favourable condition. Burning, grazing, natural events, recreation and disturbance are all mentioned as adverse activities leading to unfavourable condition, with management agreements important for securing favourable condition.

Compared with the number of assessments reported, relatively little information on adverse activities and measures taken to address unfavourability or maintain features in favourable condition was provided. However, a small amount of analysis is possible: burning is mentioned mainly for raptors and two other moorland-nesting species; fisheries management is mainly reported as an issue for seabirds; natural events are listed for a wide variety of species, including a number of seabird species; population dynamics is listed mainly for seabirds; recreation and disturbance is listed for a variety of species.

Assemblages of breeding birds

Context

Assemblages of breeding birds can be notified as SSSI features if they qualify under criteria 3.5 and 3.7 of *Chapter 14 Birds* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

Under criterion 3.5, a scoring system is used to identify whether an individual site is of high enough quality. The scoring system puts a value on possible members of the assemblage; these vary between species by habitat and can vary regionally. Under criterion 3.7, a site can be notified if there are at least 70 breeding species.

There are no equivalent features for Special Protection Areas or Ramsar sites.

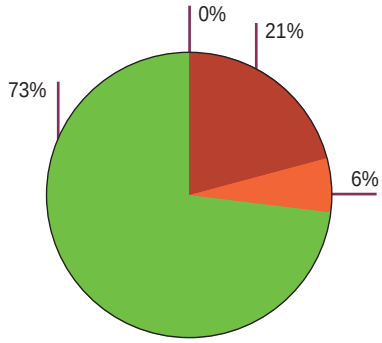
Summary statistics

	SSSI/ASSI	Total
Favourable condition	73%	73%
Main monitoring coverage	E, S	
Reported assessments	180	180
Completeness of assessments	unknown	
Distribution of features		UK

Number of assessments reported by country and site type

Country	SSSI/ASSI
England	38
Scotland	139
Wales	0
Northern Ireland	3
United Kingdom	**180**

Condition assessment - SSSI features



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

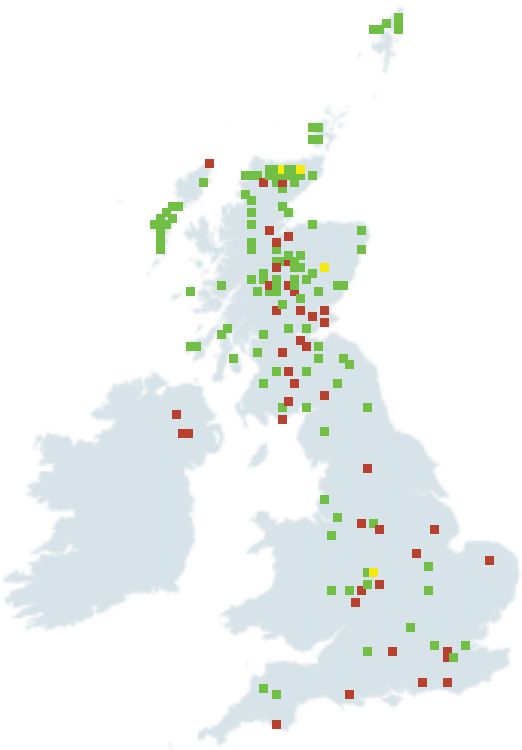
Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

Interpretation

73% of A/SSSI features reported are in favourable condition. This is above the average for species features and well above the average for all features combined. A further 6% of features reported are unfavourable-recovering. No distinctions are made on the type of assemblages, or the habitats for which they have been notified, so it is not possible to provide a further breakdown of the condition of different types of assemblages. The condition of these features appears to be better in Scotland (78% favourable) than England (53% favourable). The reasons for this difference are not clear.

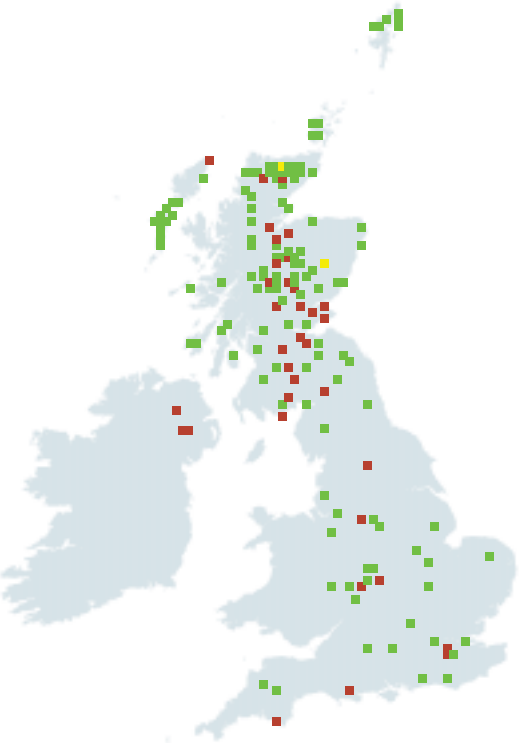
Only a few assessments provided information on adverse activities, and measures taken to address unfavourability or maintain features in favourable condition, but over-grazing, water management, and invasive species are listed as the most important factor contributing to unfavourable condition.

SSSIs



Current condition of SSSI/ASSI features

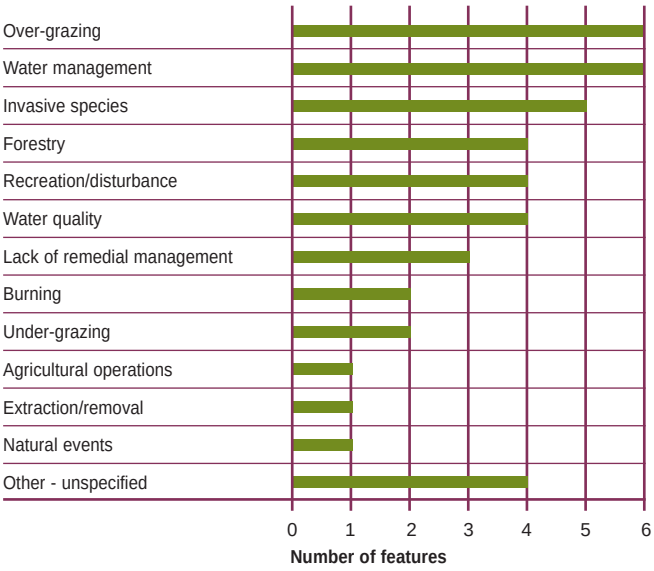
Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'

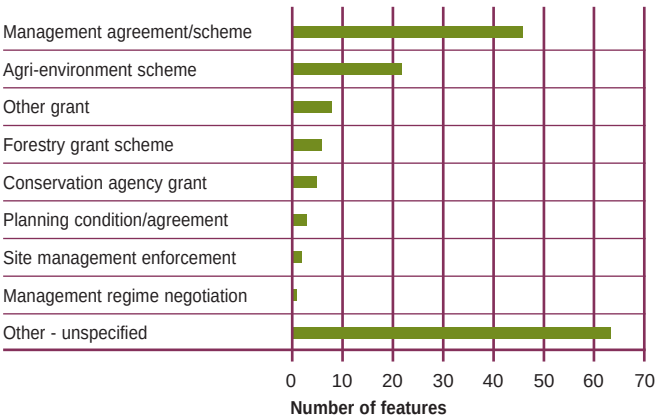
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. This map shows the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

SSSI features

Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20%

Aggregations of non-breeding birds

Context

Non-breeding bird features on SSSIs can be notified if they qualify under criteria 3.3, 3.4 and 3.7 of *Chapter 14 Birds* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

The criteria essentially cover:

- localities regularly used by non breeding birds, such as by 1% of the total British non-breeding population;
- localities used by birds in particular conditions, e.g. severe weather refuges;
- localities used by at least 90 wintering species or at least 150 passage species.

The *Selection Guidelines for Special Protection Areas* enable SPAs to be selected where an area is:

- used by 1% or more of the Great Britain (or in Northern Ireland the all-Ireland) population of a species on Annex I of the Birds Directive;
- used 1% or more of the biogeographic population of a migratory species, or;
- used by 20,000 individual breeding seabirds (seabird assemblage). Within the breeding seabird assemblage individual species may be separately listed as qualifying features if their populations exceed 1% of the national population or 2,000 individuals.

Non-breeding bird populations can also qualify under criteria 5 and 6 (formerly 3a and 3c) of the Ramsar Convention:

- Criterion 5. A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.
- Criterion 6. A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

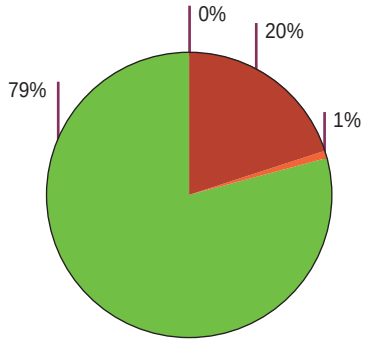
Summary statistics

	SPA	Ramsar	SSSI/ASSI	Total
Favourable condition*	84%	88%	80%	82%
Main monitoring coverage	S, NI	S, NI	S, NI	
Reported assessments	216	99	516	831
Completeness of assessments	30%	10%	unknown	
Distribution of features				UK

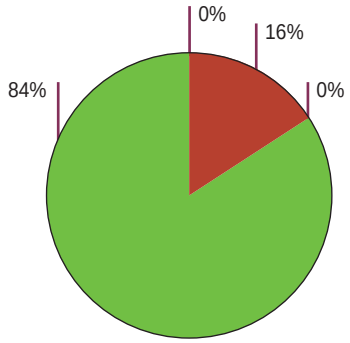
Number of assessments reported by country and site type

Country	SPA	Ramsar	SSSI/ASSI
England	0	0	51
Scotland	189	77	196
Wales	1	0	0
Northern Ireland	26	22	269
United Kingdom	**216**	**99**	**516**

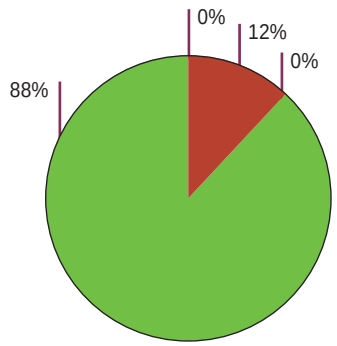
Condition assessment - SSSI features



Condition assessment - Natura 2000



Condition assessment - Ramsar



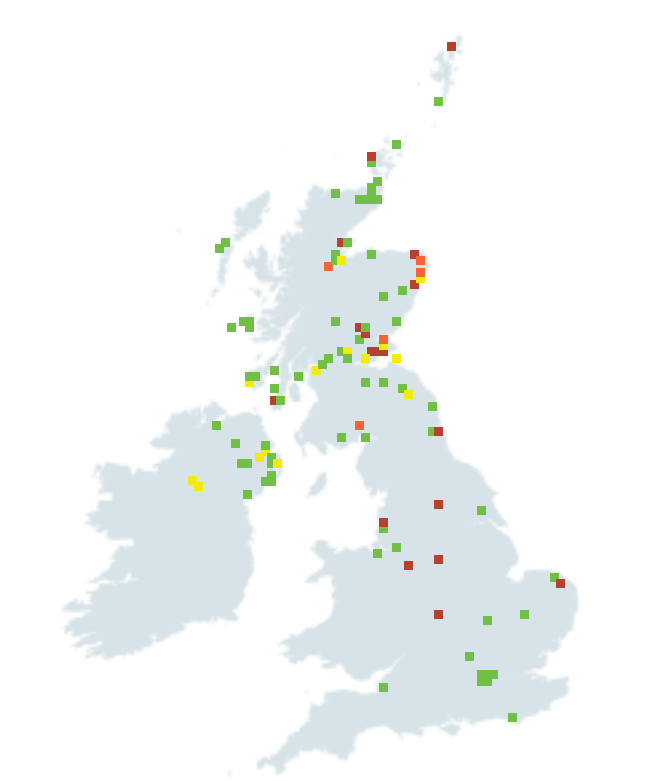
Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

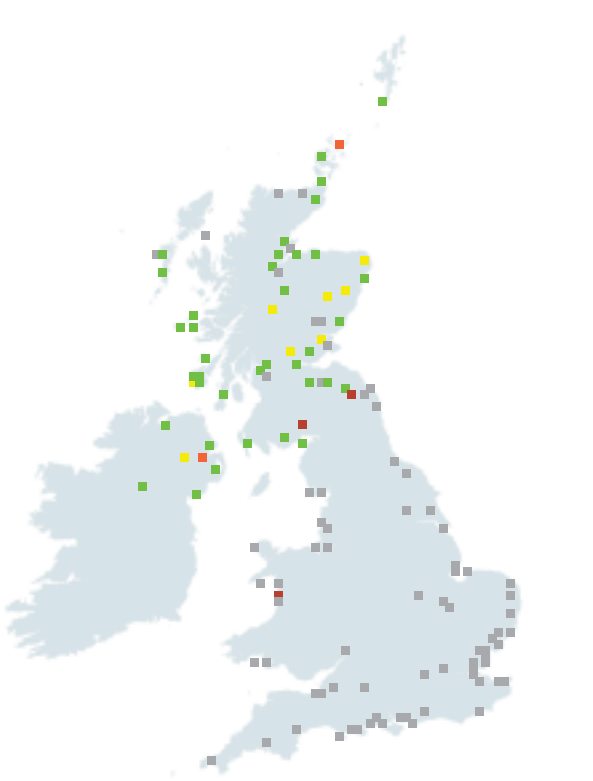
**Note: the figure for favourable condition in the pie charts is marginally different from that shown in the summary statistics table - this is a result of rounding to show small segments effectively; the figures in the summary statistics table are correct.*

SSSIs



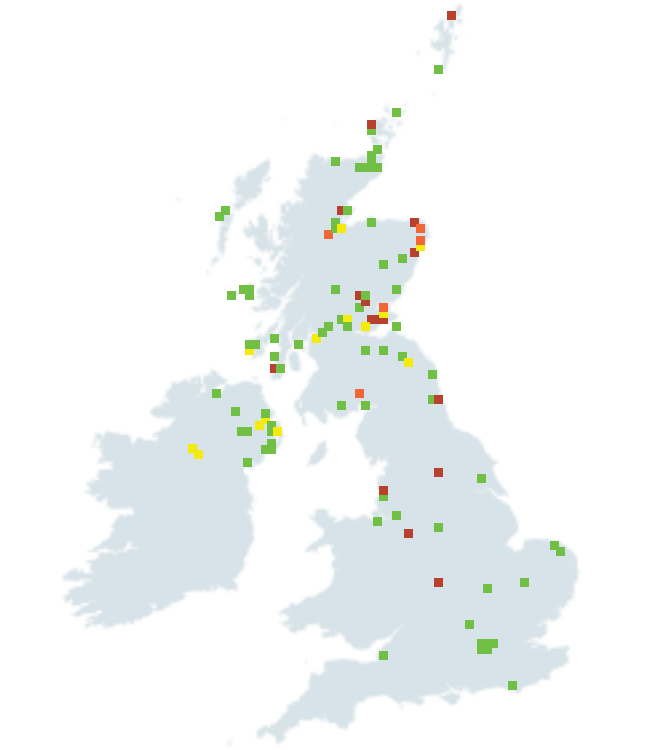
Current condition of SSSI/ASSI features

International

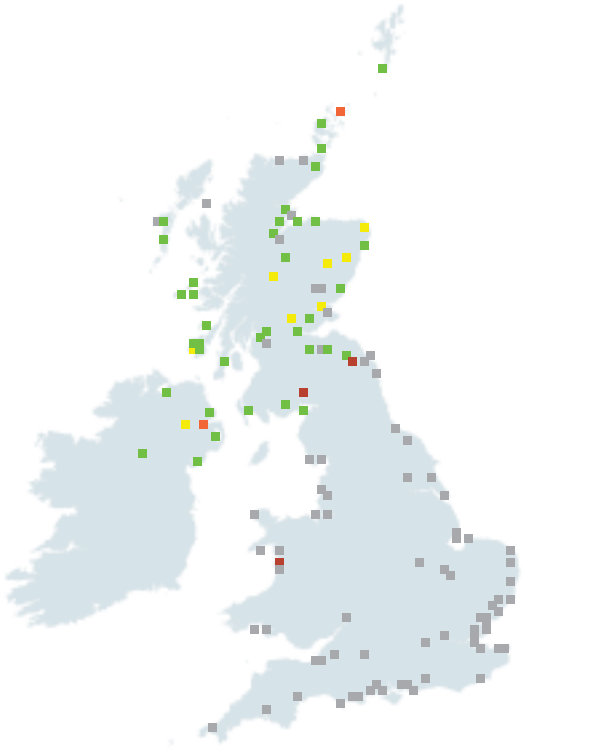


Current condition of SPA and Ramsar features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SPA and Ramsar features, with those currently reported as unfavourable-recovering shown as 'favourable'

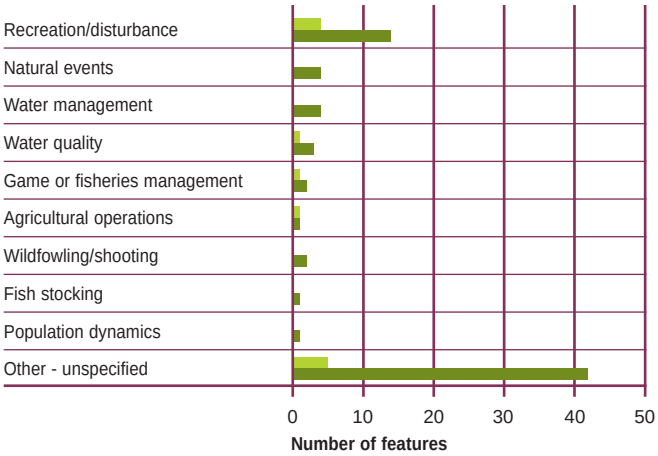
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100%	50-80%	20-50%	0-20%	Not assessed (Natura 2000 only)

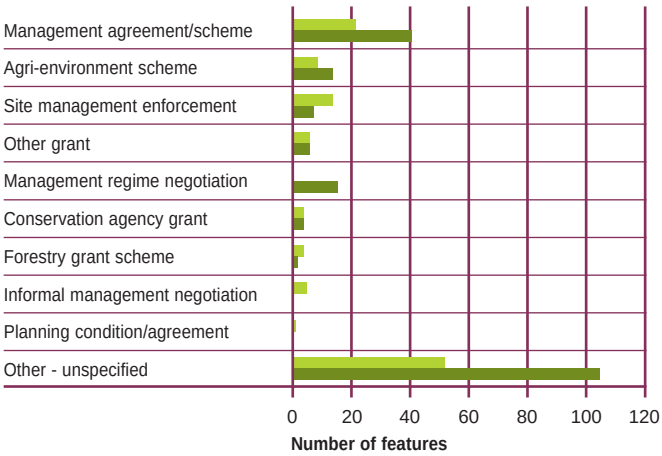
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

81% of non-breeding bird features reported are in favourable condition. This is above the average for species features and well above the average for all features combined. 80% of A/SSSI and 84% of SPA features reported are in favourable condition. A further 1% of A/SSSI features reported are unfavourable-recovering. 88% of Ramsar features reported are in favourable condition.

In more detail, for groups where more than 10 features have been reported, ducks are 78% favourable, geese 86%, grebes 92%, swans 62%, waders 83%. Waterfowl (ducks, geese and swans combined), are 80% favourable.

Very few assessments provided information on adverse activities and measures taken to address unfavourability or maintain features in favourable condition. However, the following were provided for waterfowl and waders: water quality, water management, recreation and disturbance, natural events, game or fisheries management and agricultural operations.

Reptiles

Context

SSSI features can be notified if they qualify under the reptile criteria outlined in section 2 of *Chapter 15 Reptiles and Amphibians* of the *Guidelines for Selection of Biological SSSIs*. There are no ASSIs for reptile features in Northern Ireland.

For reptiles, site selection should particularly take account of smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*. Sites may also be selected for outstanding assemblages of at least three of the four other native terrestrial species - adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Lacerta vivipara* and slow worm *Anguis fragilis*.

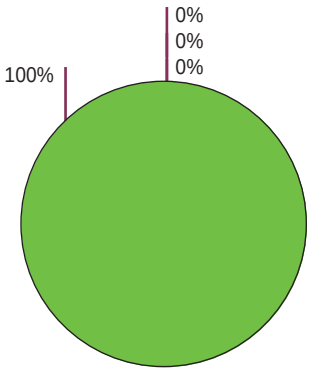
Summary statistics

	SSSI/ASSI	Total
Favourable condition	100%	100%
Main monitoring coverage	E	
Reported assessments	4	4
Completeness of assessments	unknown	
Distribution of features		GB

Number of assessments reported by country and site type

Country	SSSI/ASSI
England	3
Scotland	1
Wales	0
Northern Ireland	N/A
United Kingdom	**4**

Condition assessment - SSSI features



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

Favourable

Unfavourable-recovering

Unfavourable

Destroyed (whole or part)

Interpretation

Only four SSSI assessments have been reported; all are in favourable condition. This is considered to be too small a sample to enable objective interpretation, or for meaningful comparisons with other reporting categories.

SSSIs

Current condition of SSSI/ASSI features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).

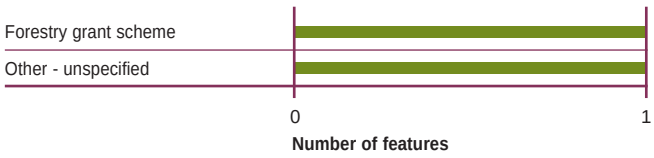
Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'

The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. This map shows the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Adverse activities

No adverse activities were reported.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

SSSI features

Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20%

Amphibians

Context

SSSI features can be notified if they qualify under the amphibian criteria outlined in section 3 of *Chapter 15 Reptiles and Amphibians* of the *Guidelines for Selection of Biological SSSIs*. There are no ASSIs or SACs for amphibian features in Northern Ireland.

For amphibians, sites may be notified for all important and established colonies of natterjack toad *Bufo calamita* and all exceptional colonies of great crested newt *Triturus cristatus*. Outstanding assemblages of widespread species (i.e. *T. cristatus*, smooth newt *T. vulgaris*, palmate newt *T. helveticus*, common toad *Bufo bufo* and common frog *Rana temporaria*) should also be selected.

T. cristatus is the only UK amphibian which qualifies as a feature for the selection of Special Areas of Conservation (SACs) by being on Annex II of the EC Habitats Directive.

Summary statistics

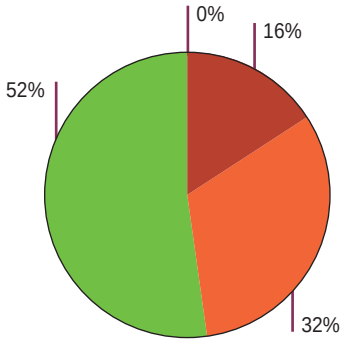
	SAC	SSSI/ASSI	Total
Favourable condition*	43%	53%	47%
Main monitoring coverage	E	E	
Reported assessments	30	19	49
Completeness of assessments	97%	unknown	
Distribution of features			GB

Number of assessments reported by country and site type

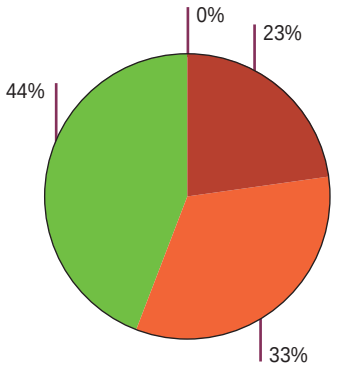
Country	SAC	SSSI/ASSI
England	23	12
Scotland	3	7
Wales	4	0
Northern Ireland	N/A	N/A
United Kingdom	**30**	**19**

**Note: the figure for favourable condition in the pie charts is marginally different from that shown in the summary statistics table - this is a result of rounding to show small segments effectively; the figures in the summary statistics table are correct.*

Condition assessment - SSSI features



Condition assessment - Natura 2000

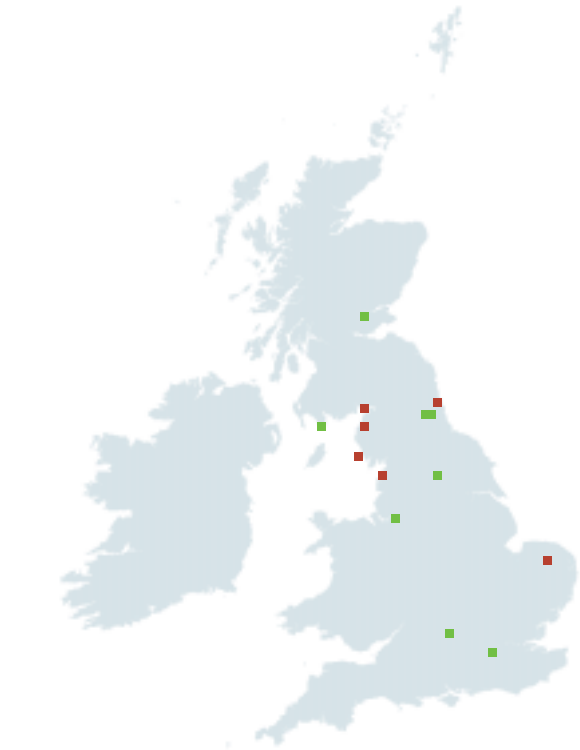


Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

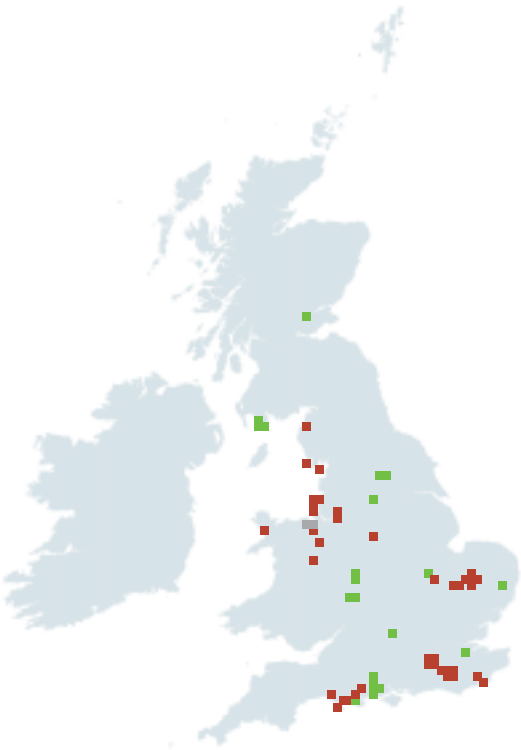
Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

SSSIs



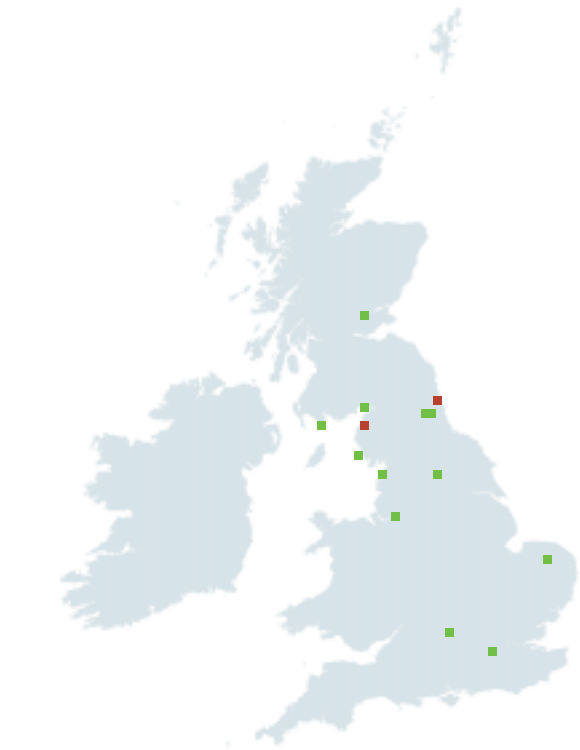
Current condition of SSSI/ASSI features

Natura 2000

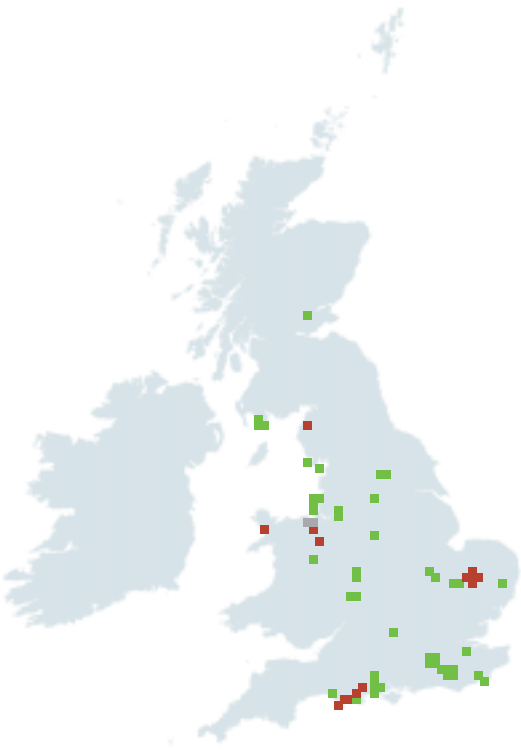


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

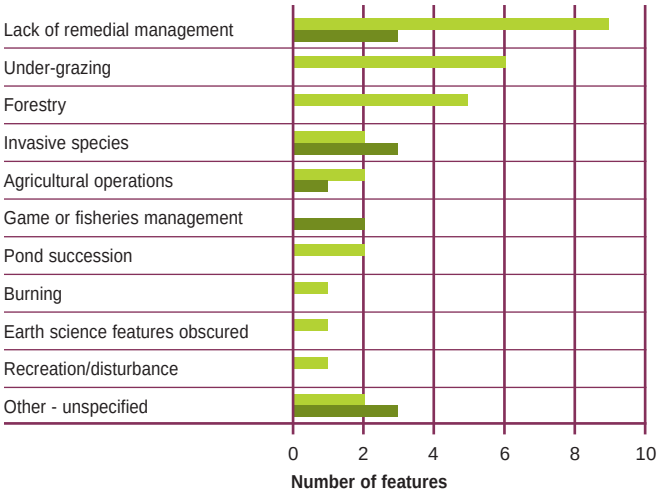
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% | 50-80% | 20-50% | 0-20% | Not assessed (Natura 2000 only)

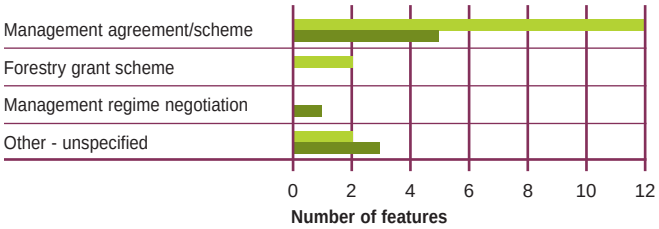
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

47% of amphibian features reported are in favourable condition. This is well below the average for species features and below the average for all features combined. 53% of the SSSI features reported are favourable, and a further 32% unfavourable-recovering.

97% of great crested newt *Triturus cristatus* SAC sites have been assessed. This is the sole amphibian species for which SACs have been designated. 44% of the SACs are reported as favourable and 33% as unfavourable-recovering.

The most frequently cited reasons for unfavourable condition are (in decreasing order): lack of remedial management, forestry, invasive species, under-grazing and game or fisheries management. This list probably relates to the familiar problems of increasing shading of breeding ponds, early drying of breeding ponds (both due primarily to succession), invasive plant introductions and fish introduction. The problems facing amphibians on protected sites appear, therefore, largely to mirror those problems understood to exist in the wider countryside. In general the reported conditions of amphibian sites accord well with understanding of the sites gained through liaison and sites visits.

Fish

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the fish criteria outlined in section 2 and 3 of *Chapter 16 Freshwater and Estuarine Fish* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

There are very few water bodies in Britain with natural fish communities, as many communities have been distorted by introductions of non-native species and/or native species from a previously restricted geographical range. Therefore diversity does not provide a valid criterion for selecting SSSIs. Only in exceptional circumstances e.g. extreme isolation or high research potential will SSSIs be notified on community grounds.

The criteria for site selection are based on the need to conserve isolated populations and rare species. Isolated populations include examples of ecotypic or genetically distinctive fish populations worthy of conservation, such as possible post-glacial relict races of brown trout *Salmo trutta* in Scotland and Northern Ireland.

The breeding sites of certain nationally rare species, including vendace *Coregonus albula*, whitefish *Coregonus lavaretus*, allis shad *Alosa alosa*, twaite shad *Alosa fallax* and burbot *Lota lota* are also qualifying features, though the last is now probably extinct. Certain breeding and spawning sites of smelt *Osmerus eperlanus*, a nationally uncommon species, also qualify for SSSI site notification.

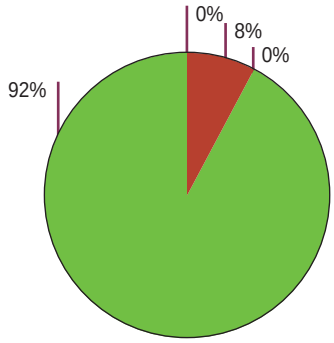
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition	16%	92%	27%
Main monitoring coverage	E, S	S	
Reported assessments	74	12	86
Completeness of assessments	53%	unknown	
Distribution of features			UK

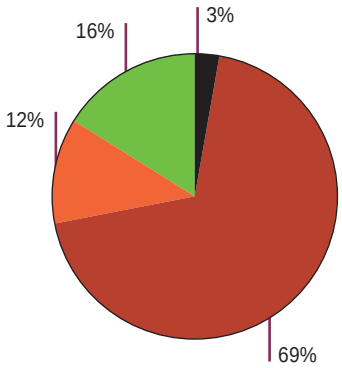
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	53	0
Scotland	12	12
Wales	9	0
Northern Ireland	0	0
United Kingdom	**74**	**12**

Condition assessment - SSSI features



Condition assessment - Natura 2000



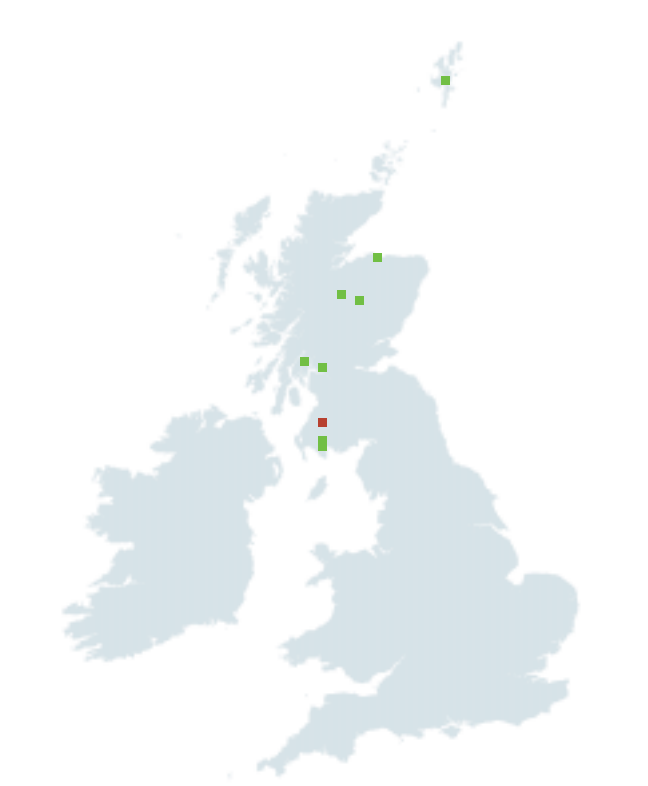
Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

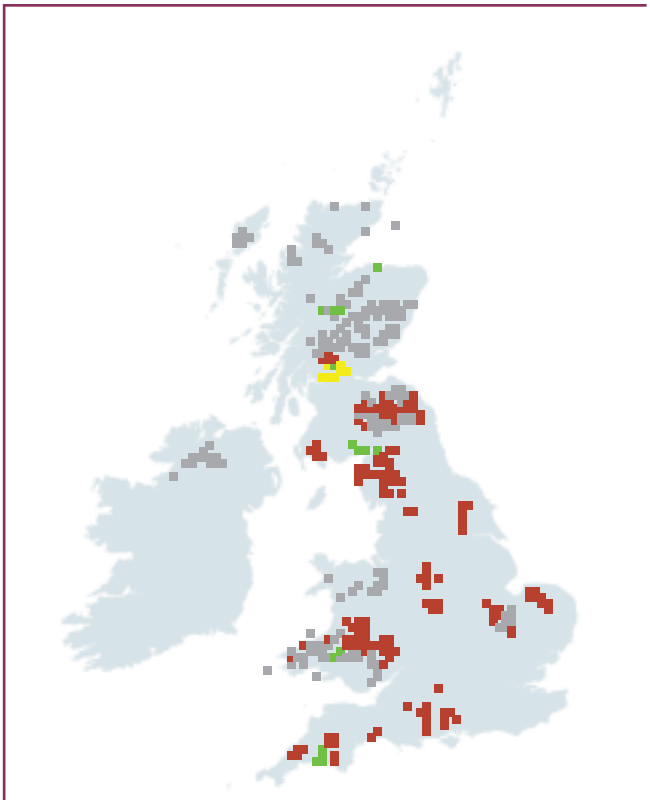
Fish listed on Annex II of the EC Habitats Directive, and thereby qualifying as features for the selection of Special Areas of Conservation (SACs), are: Atlantic salmon *Salmo salar*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, brook lamprey *Lampetra planeri*, spined loach *Cobitis taenia*, bullhead *Cottus gobio*, allis shad *Alosa alosa* and twaite shad *Alosa fallax*.

SSSIs



Current condition of SSSI/ASSI features

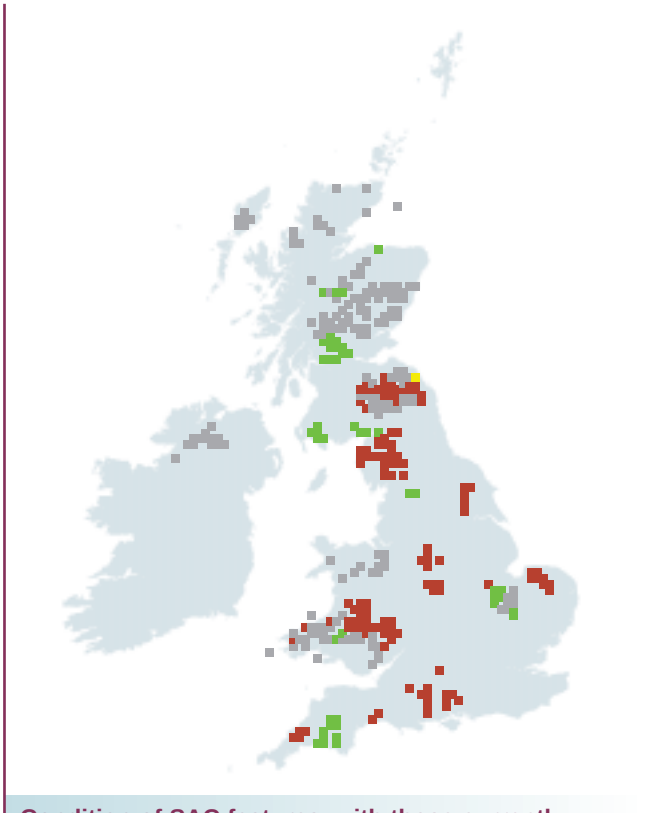
Natura 2000



Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).

Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

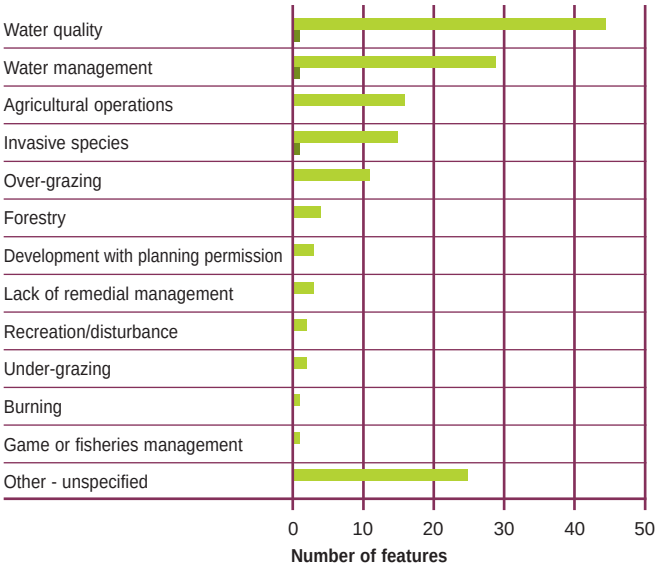
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20% Not assessed (Natura 2000 only)

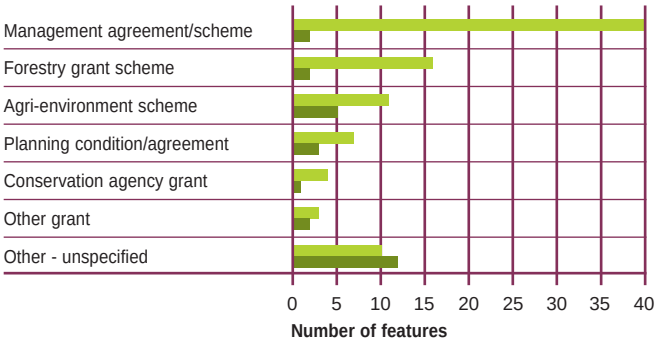
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

The range of fish species encountered around the UK reflects the distribution of particular habitat types. In Scotland, for example, the list of designated features is dominated by salmonids (Arctic charr *Salvelinus alpinus*, Atlantic salmon *Salmo salar* and whitefish (powan) *Coregonus lavaretus*), lamprey species (brook, river and sea) and smelt (sparling *Osmerus eperlanus*). English and Welsh lists contain these salmonid and lamprey species, but also include a variety of other fish species which are absent, or virtually absent, from Scotland. These are allis shad *Alosa alosa*, twaite shad *Alosa fallax*, spined loach *Cobitis taenia* and bullhead *Cottus gobio*. Atlantic salmon and the unique brown trout assemblage of Lough Melvin are the only fish species listed as designated features in Northern Ireland.

Overall, 27% of assessments reported are in favourable condition. This is the lowest level of favourable condition reported for species features and is well below the average for species features. It is also well below the average for all features combined. 92% of the A/SSSI and 16% of the SAC features reported are favourable. A further 12% of the SAC features reported are unfavourable-recovering.

Shad

Three, from a total of 13, allis and twaite shad populations designated, have been reported. One population is considered to be favourable and two in unfavourable condition. A wide range of management issues were highlighted, but chief amongst these were agricultural operations and water quality. Given their ecological similarities, the similarity in adverse activities between these species is not surprising.

Lampreys

Four of the six populations of brook lamprey *Lampetra planeri* designated have been reported: two in favourable condition and two unfavourable. Issues requiring consideration include agricultural operations, a lack of remedial management and poor water quality. Three river lamprey *Lampetra fluviatilis* populations, out of a total number of seven, have been reported; only one population is considered to be in favourable condition. No adverse activities were put forward to help ascertain reasons for the apparent poor performance of these populations. Of the 24 sea lamprey *Petromyzon marinus* sites designated, 15 have been reported. Five of these are considered to be in favourable condition and 10 unfavourable. The range of adverse activities which were considered to be of relevance were relatively consistent. Chief amongst these were water management and water quality, although a wide range of other issues, such as agricultural operations, invasive species and over-grazing were also mentioned.

Loach

Spined loach appear to be in poor condition within the UK. All four features reported are considered to be in unfavourable condition. Water management and water quality are a major issue for this species, although 'lack of remedial management' is also listed as an adverse activity.

Bullhead

Bullhead populations, like spined loach, appear to be under considerable threat. 13 populations are considered to be in unfavourable condition, and one (the River Camel) is partially destroyed. A wide range of adverse activities have been identified for this species, which reflects the number and distribution of these sites throughout England and Wales. Water management and water quality were mentioned as being a pressure in almost every site, although riparian management, agricultural operations and forestry are also important. Other adverse activities include the presence of unspecified invasive species, lack of remedial management, and recreational disturbance.

Whitefish

Only one whitefish population has been reported; in favourable condition. The proximity of a ruffe *Gymnocephalus cernuus* population to this site means that the whitefish is under potential threat. There is also a potential threat in the form of recreational disturbance by powerboat users.

Smelt

Smelt, also known as sparling, have been reported from two Scottish sites. Both sites are considered to be in favourable condition. However, these results should not be treated with complacency, as smelt are predictable in their spawning behaviour, are marketable as a commercial commodity and are incredibly simple to catch. These factors mean that it is highly vulnerable to overfishing and this activity could eliminate the population in any given year. Furthermore, they are relatively weak swimmers, so river engineering or agricultural operations which reduce water quality could have a significant negative impact.

Arctic charr

Five Arctic charr sites have been reported. All of the sites are located in Scotland and four out of the five were considered to be in favourable condition. The unfavourable site is acidified and there seems to be little prospect of recovery in the short to medium term. Pressures on these sites include water management, water quality, poor fisheries management, invasive species (such as the introduction of perch *Perca fluviatilis*), and recreational disturbance. Gravel extraction was considered to be an issue for one population where the Arctic charr population spawns within inflowing streams.

Atlantic salmon

Twelve Atlantic salmon assessments have been reported. Of these, 11 are unfavourable, and one (the River Camel) partially destroyed. A wide range of pressures have been identified for Atlantic salmon, ranging from water management and water quality to fisheries management. Riparian and in-stream management is also an issue and agricultural operations (including over-grazing and under-grazing), forestry and development works carried out under planning permission also feature regularly. Aquaculture is known to be a pressure at at least one Scottish site.

Assemblages

Only one fish assemblage has been reported. This is a whitefish (powan)/Arctic charr population. Both of these features have been reported as being in favourable condition. It follows that the 'fish assemblage' feature is also in favourable condition.

Butterflies

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the butterfly criteria outlined in section 2 of *Chapter 18 Butterflies* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative. The criteria include: nationally rare species, endemic races, nationally scarce species, and species which have experienced substantial local declines.

Sites can be notified for species listed in the SSSI guidelines, including for:

- the re-establishment or introduction of species extinct in Great Britain e.g. large blue *Maculinea arion* and large copper *Lycaena dispar*;
- Red Data Book endangered species e.g. large tortoiseshell *Nymphalis polychloros*;
- vulnerable species e.g. heath fritillary *Melitaea athalia*, high brown fritillary *Argynnis adippe* and swallowtail *Papilio machaon*; and
- rare species, e.g. Glanville fritillary *Melitaea cinxia* and silver-spotted skipper *Hesperia comma*.

Summary statistics

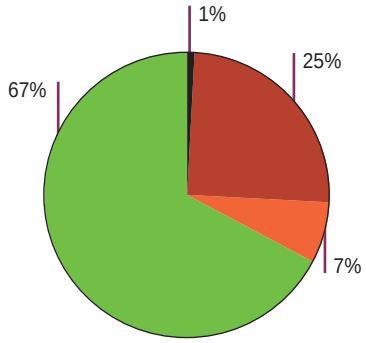
	SAC	SSSI/ASSI	Total
Favourable condition*	30%	66%	58%
Main monitoring coverage	E, W	E, S	
Reported assessments	20	71	91
Completeness of assessments	59%	unknown	
Distribution of features			UK

Number of assessments reported by country and site type

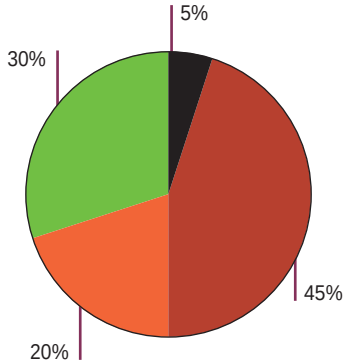
Country	SAC	SSSI/ASSI
England	9	52
Scotland	5	19
Wales	6	0
Northern Ireland	0	0
United Kingdom	**20**	**71**

**Note: the figure for favourable condition in the pie charts is marginally different from that shown in the summary statistics table - this is a result of rounding to show small segments effectively; the figures in the summary statistics table are correct.*

Condition assessment - SSSI features



Condition assessment - Natura 2000



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

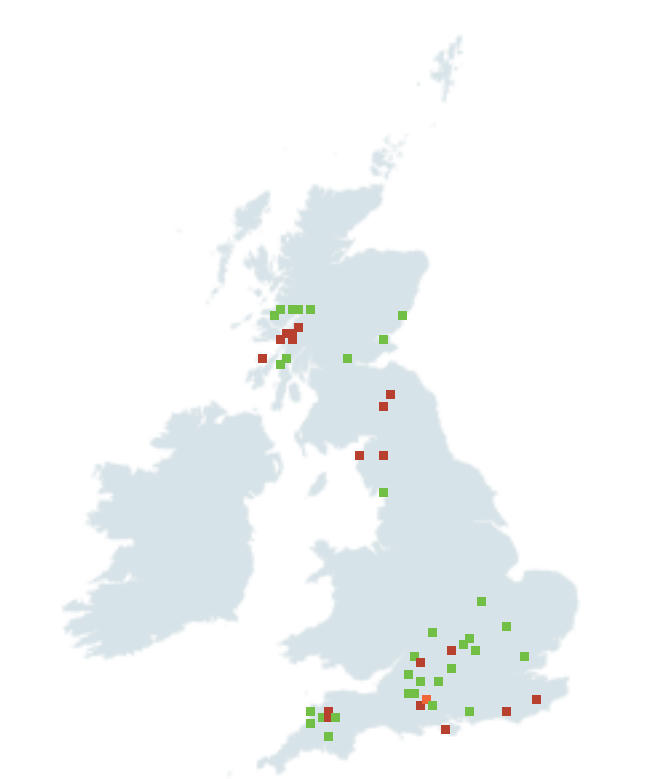
Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

Endemic races which qualify are grayling *Hipparchia semele thyone* and silver-studded blue *Plebejus argus caernensis*, as well as nationally scarce species (those which currently occupy 16-100 10km squares), such as adonis blue *Polyommatus bellargus* and purple emperor *Apatura iris*. 15 other species merit consideration for site notification in regions where substantial declines have taken place, but wherever possible, site notification should be made where colonies of some nationally rare and scarce species are also present.

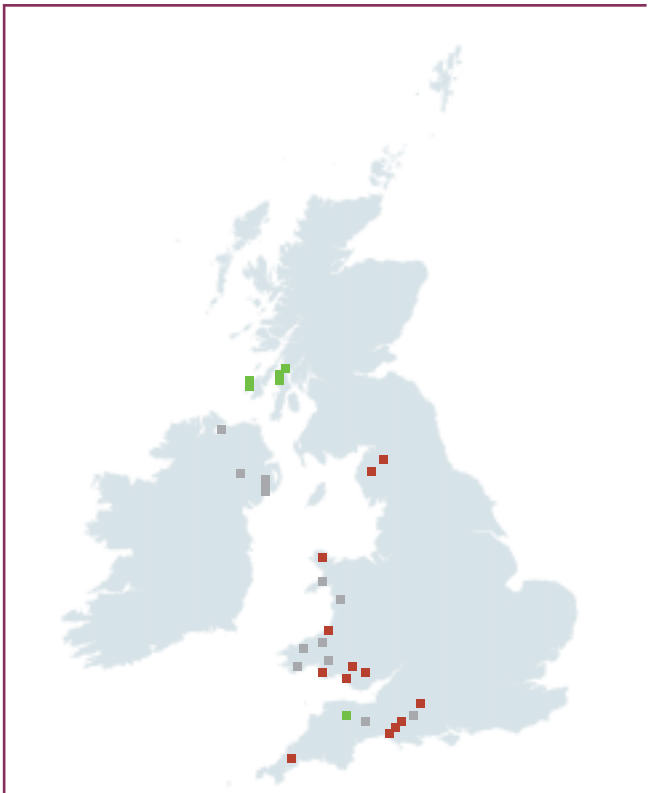
The sole UK butterfly species listed on Annex II of the EC Habitats Directive which qualifies as a feature for the selection of Special Areas of Conservation (SACs) is the Marsh fritillary *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia*.

SSSIs



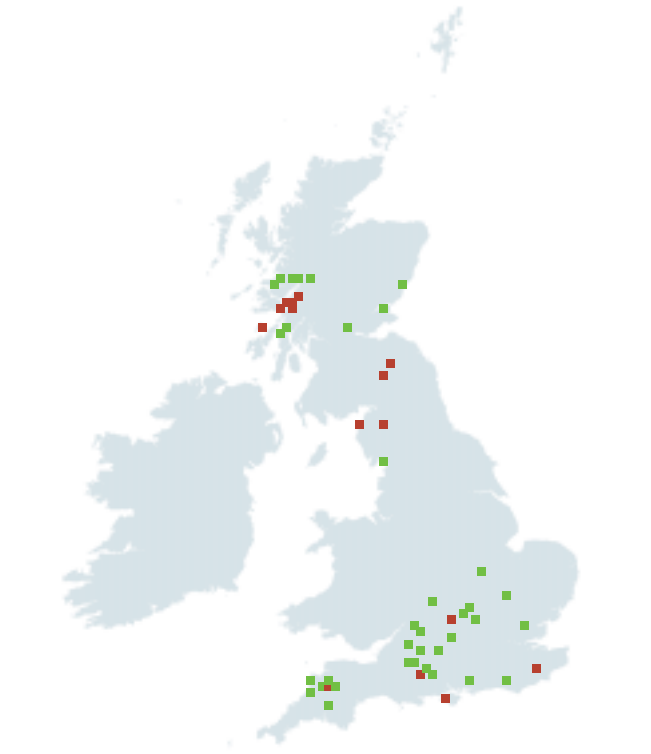
Current condition of SSSI/ASSI features

Natura 2000

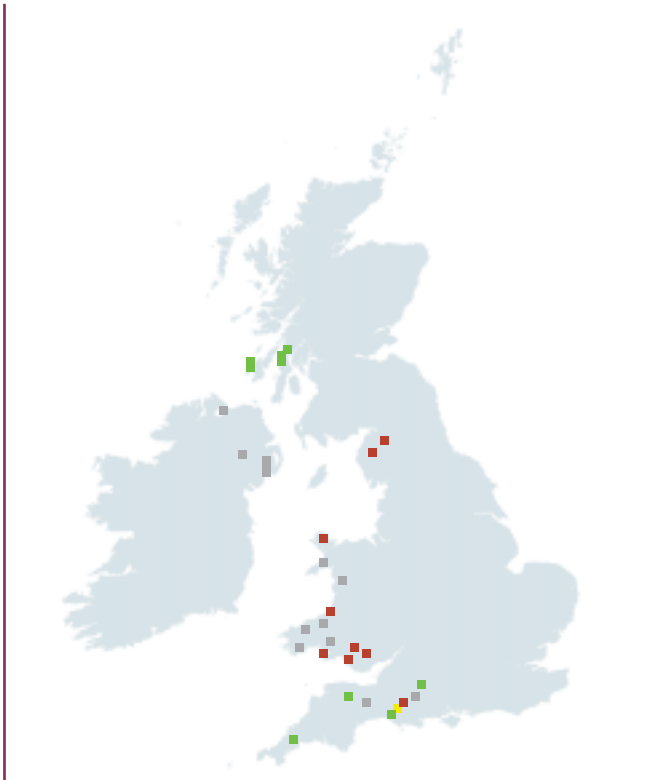


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

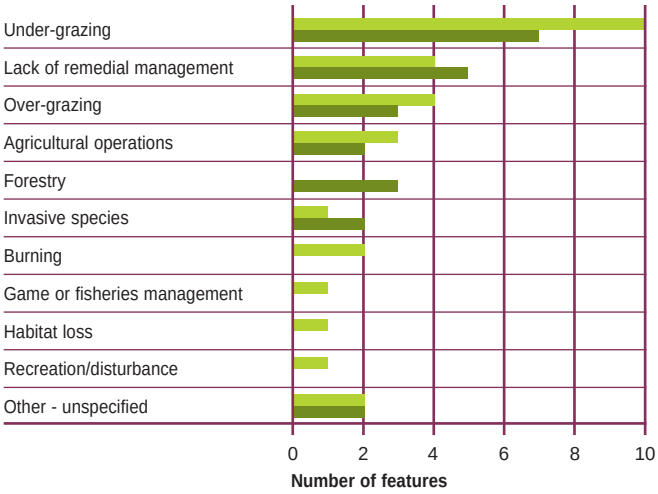
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20% Not assessed (Natura 2000 only)

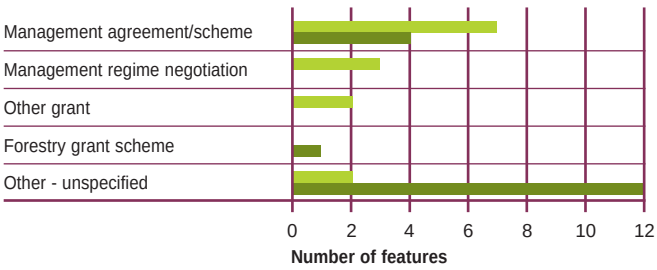
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

58% of butterfly features reported are in favourable condition. This is below the average for species features, but about the average for all features combined. 66% of A/SSSI and 30% of SAC features reported are favourable; a further 7% of A/SSSI and 20% of SAC features are in unfavourable-recovering condition.

Within these figures, browns (Satyridae) were all favourable (100%), hairstreaks, coppers and blues (Lycaenidae) 63% favourable, and emperors, vanessids and fritillaries (Nymphalidae) 44% favourable. The last of these groups includes the marsh fritillary *Euphydryas aurinia*. 59% of assessments required for SACs were reported for this species, of which 30% are favourable. It is further notified on 15 A/SSSI sites, of which 46% are favourable.

The main factor reported as causing unfavourable condition is under-grazing – this relates to the management of the grassland habitats upon which many of these butterflies are dependent. Many of the sites in favourable condition have management agreements in place. Care is needed in interpreting these assessments, as guidance on setting conservation objectives for butterfly features had not been fully developed at the time the assessments were made.

Dragonflies and damselflies

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the dragonfly criteria outlined in sections 2-4 of *Chapter 19 Dragonflies* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative. The criteria mainly cover nationally rare and scarce species, and outstanding assemblages of species. Site boundaries should include the semi-natural terrestrial habitats used for feeding and resting, as well as the breeding sites. Water quality and quantity requirements should also be taken into consideration.

Sites can be notified for the following species:

- those species believed extinct in Great Britain (orange-spotted emerald *Oxygastra curtisii*, Norfolk damselfly *Coenagrion armatum* and dainty damselfly *C. scitulum*): if rediscovered, all sites qualify for selection;
- all sites of Norfolk hawker *Aeshna isosceles*, which is listed as Endangered in the British Red Data Book (RDB);
- the strongest populations of RDB Vulnerable species - northern damselfly *Coenagrion hastulatum* and scarce emerald damselfly *Lestes dryas*; and
- RDB Rare species northern emerald Somatochlora arctica, scarce chaser *Libellula fulva* and southern damselfly *Coenagrion mercuriale*.

The strongest populations of nationally scarce species (those known or presumed to occur in 16-100 10km squares in Great Britain, but not RDB species) also qualify as selection criteria, such as azure hawker *Aeshna caerulea*, hairy dragonfly *Brachytron pratense* and white-faced darter *Leucorrhinia dubia*, as do two further species that are threatened in Europe and breeding in Great Britain; namely the southern damselfly *Coenagrion mercuriale* (endangered) and club-tailed dragonfly *Gomphus vulgatissimus* (vulnerable). For all of the above single species criteria, sites containing combinations of species are especially valuable.

Sites may also be notified for outstanding assemblages if the total number of species meets or exceeds a certain threshold level based on the location within Great Britain, ranging from 7 species in the Orkneys to 17 species in central southern England.

Under Annex II of the EC Habitats Directive, the southern damselfly *Coenagrion mercuriale* is the sole damselfly species qualifying as a feature for the selection of Special Areas of Conservation (SACs) in the UK. There are no dragonflies in the UK for which SACs can be selected.

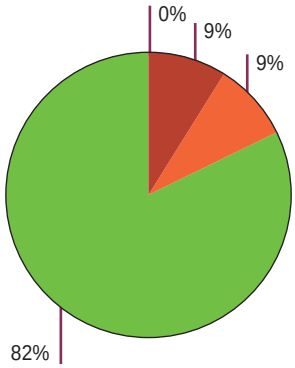
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition	13%	82%	68%
Main monitoring coverage	E	S	
Reported assessments	8	33	41
Completeness of assessments	80%	unknown	
Distribution of features			UK

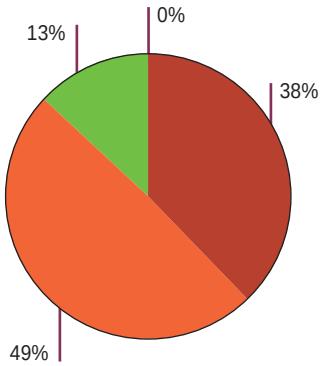
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	6	8
Scotland	0	25
Wales	2	0
Northern Ireland	0	0
United Kingdom	**8**	**33**

Condition assessment - SSSI features



Condition assessment - Natura 2000



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

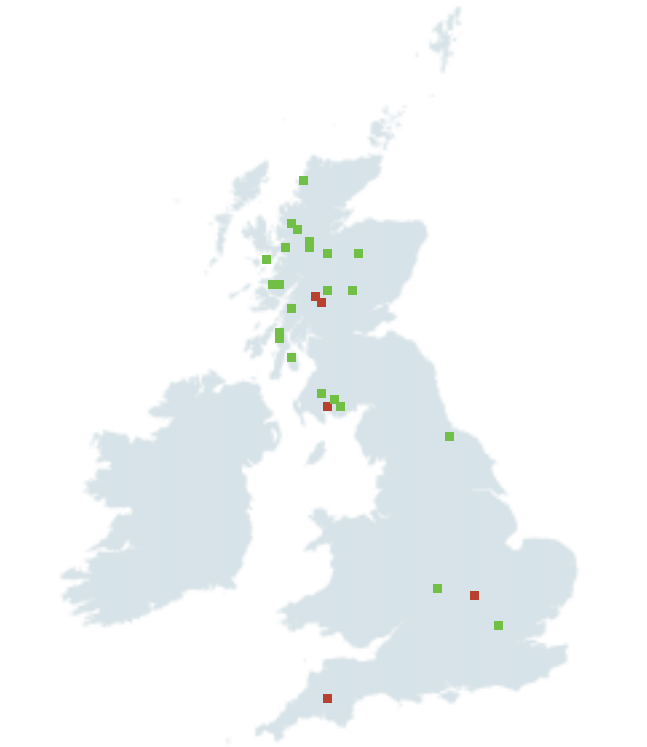
Favourable

Unfavourable-recovering

Unfavourable

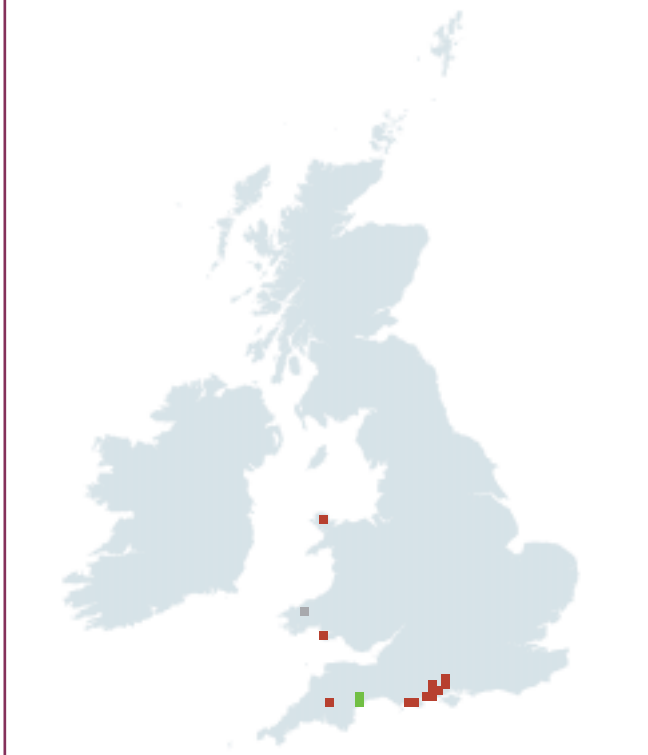
Destroyed (whole or part)

SSSIs



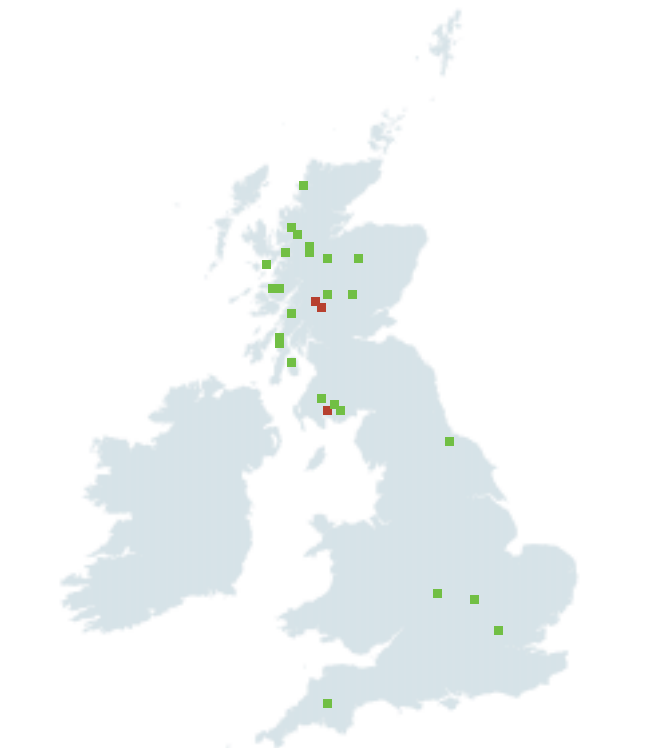
Current condition of SSSI/ASSI features

Natura 2000

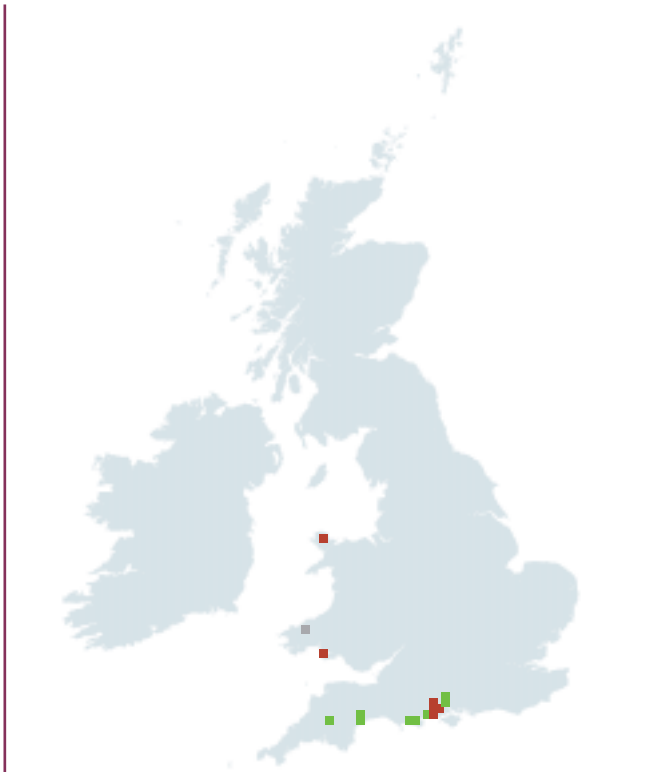


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

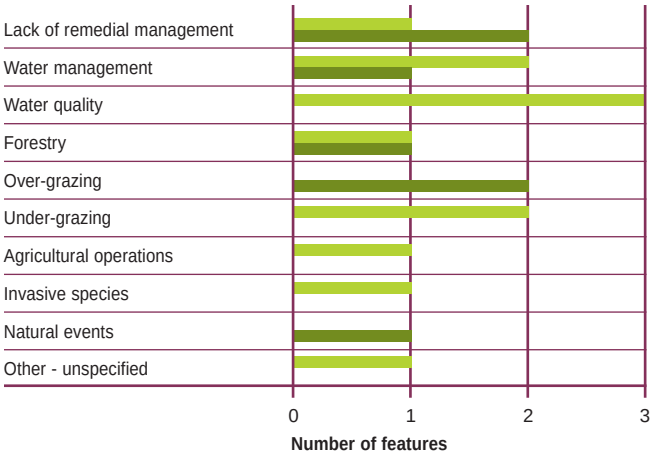
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% | 50-80% | 20-50% | 0-20% | Not assessed (Natura 2000 only)

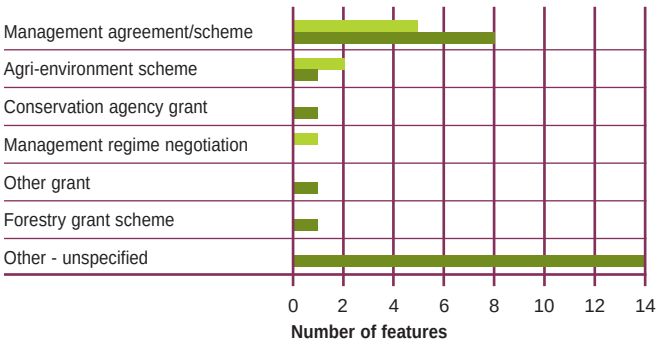
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

68% of dragonfly and damselfly features reported are in favourable condition. This is about the average for species features and above the average for all features combined. 82% of A/SSSI features reported are favourable, with a further 9% of A/SSSI unfavourable-recovering.

Only 13% of southern damselfly features reported are favourable. This is worryingly low. However, 49% are unfavourable-recovering, so there is some good news. Continued effort will be needed to ensure recovery to favourable condition.

In more detail, 31% of damselfly and 86% of dragonfly assessments reported are favourable. The reasons for these differences are not clear.

Unsurprisingly, the factors associated with unfavourable condition relate to water quality or management of water bodies and the marginal vegetation thereof. Care is needed in interpreting these assessments, as guidance on setting conservation objectives for dragonfly and damselfly features had not been fully developed when the assessments were made.

Other invertebrates

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the invertebrate criteria outlined in section 3 of *Chapter 17 Invertebrates* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

It is the rarer, more specialised invertebrate species that need particular attention, especially where there is evidence that their macro- or micro-habitat requirements are not represented within the existing SSSI series. Therefore sites containing the best examples of such features, e.g. micro-habitats such as ancient trees with dead and decaying wood, and large river shingle banks, are candidates for selection as SSSIs. Habitat mosaics are also of great importance, because many invertebrates live in situations which may be classed as transitions between habitat types or because there is a need for different habitat conditions at different stages of their life history.

The strongest populations of the rarer and more threatened invertebrates, which typically have narrow and unusual habitat requirements, should be considered as features for the notification of SSSIs. Highest priority should be given to Red Data Book (RDB) endangered, vulnerable, rare and endemic species, with species listed as 'out of danger' also remaining important. Nationally scarce species (and their assemblages), known or estimated in 16-100 10km grid squares in Britain should also be represented. Regionally scarce species may also be considered as significant for site notification.

All species with populations listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended 1985) qualify for consideration. The location supporting the strongest population in Great Britain of a RDB species should be regarded as a candidate site, as well as sites with strong populations of well-recorded RDB groups such as butterflies, macro-moths, grasshoppers and crickets, ground beetles, water beetles and hoverflies.

Under Annex II of the EC Habitats Directive, a number of molluscs and arthropods qualify as features for the selection of Special Areas of Conservation (SACs) in the UK, and which fit in the *Other invertebrates* reporting category. The molluscs are Geyer's whorl snail *Vertigo geyeri*, narrow-mouthed whorl snail *Vertigo angustior*, round-mouthed whorl snail *Vertigo genesii*, Desmoulin's whorl snail *Vertigo moulinsiana*, freshwater pearl mussel *Margaritifera margaritifera* and ramshorn snail *Anisus vorticulus*. The arthropods are violet click beetle *Limoniscus violaceus*, stag beetle *Lucanus cervus*, white-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes* and Fisher's estuarine moth *Gortyna borelii lunata*.

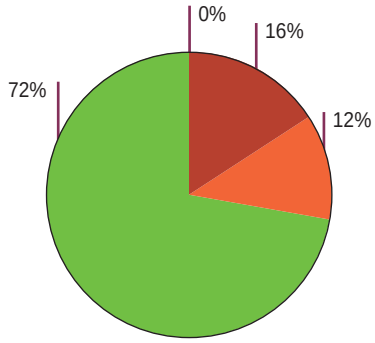
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition	12%	72%	62%
Main monitoring coverage	E, S, W	E, S	
Reported assessments	51	247	298
Completeness of assessments	75%	unknown	
Distribution of features			UK

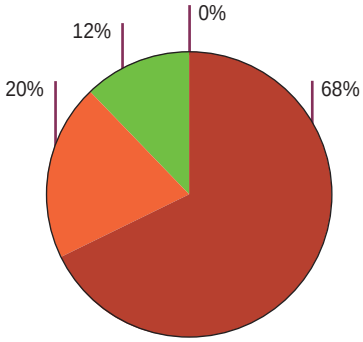
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	31	107
Scotland	13	138
Wales	4	0
Northern Ireland	3	2
United Kingdom	**51**	**247**

Condition assessment - SSSI features



Condition assessment - Natura 2000

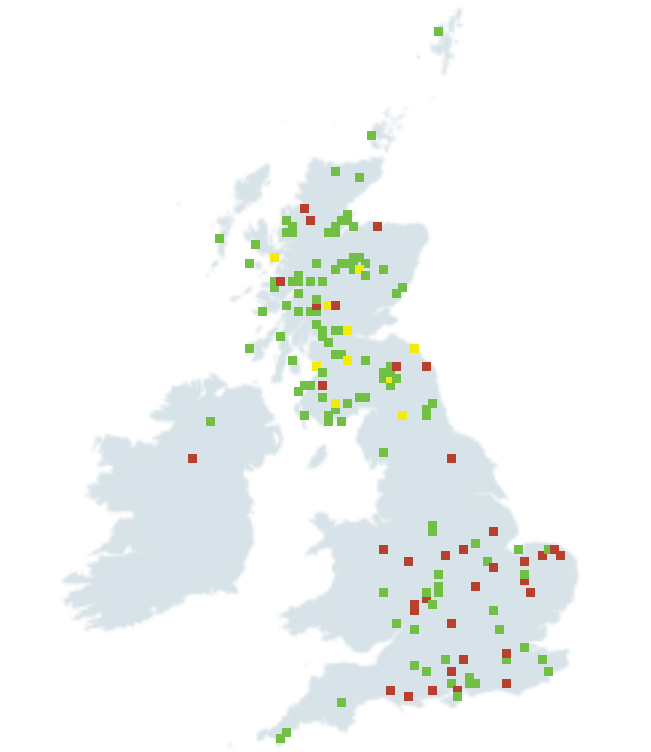


Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

Key:

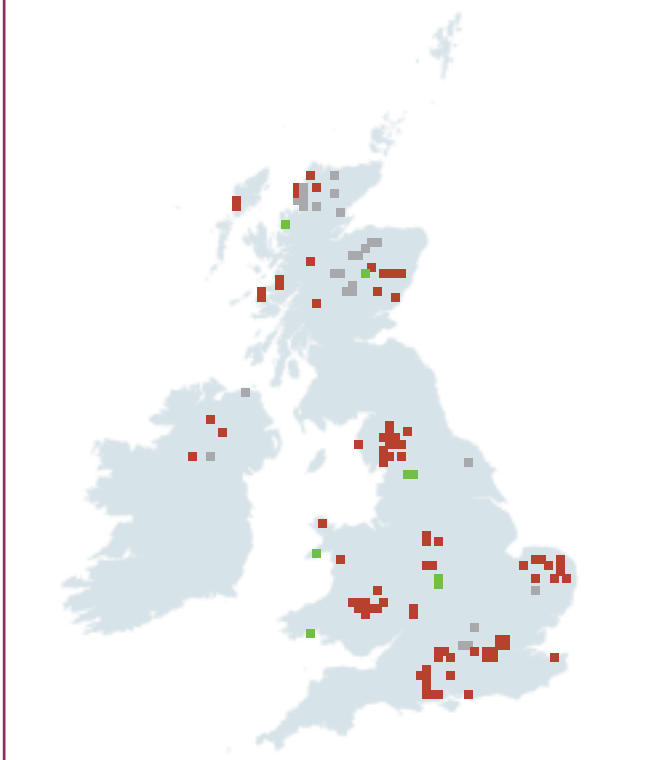
Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

SSSIs



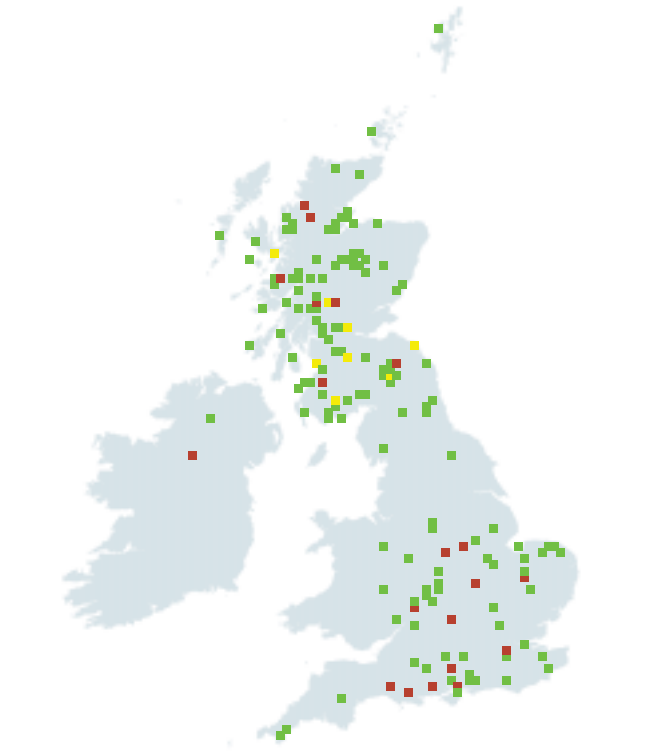
Current condition of SSSI/ASSI features

Natura 2000

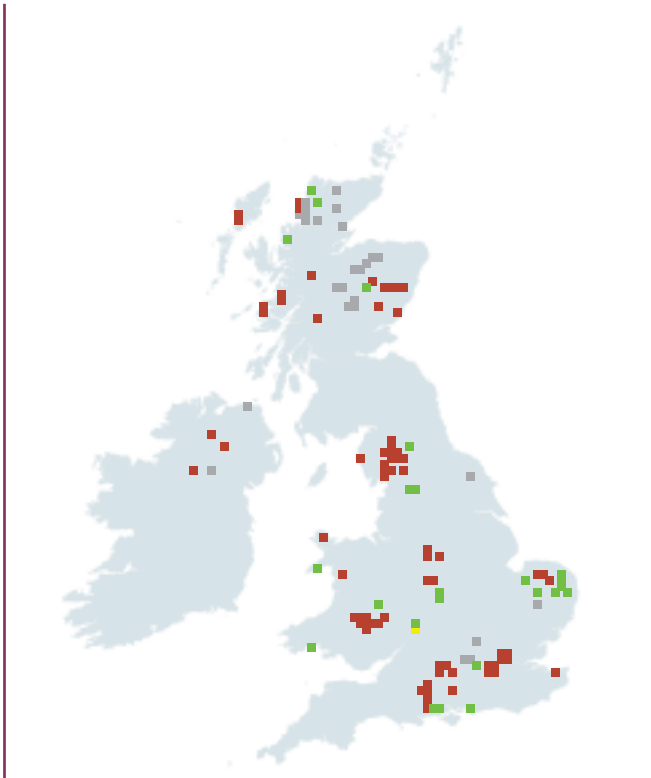


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

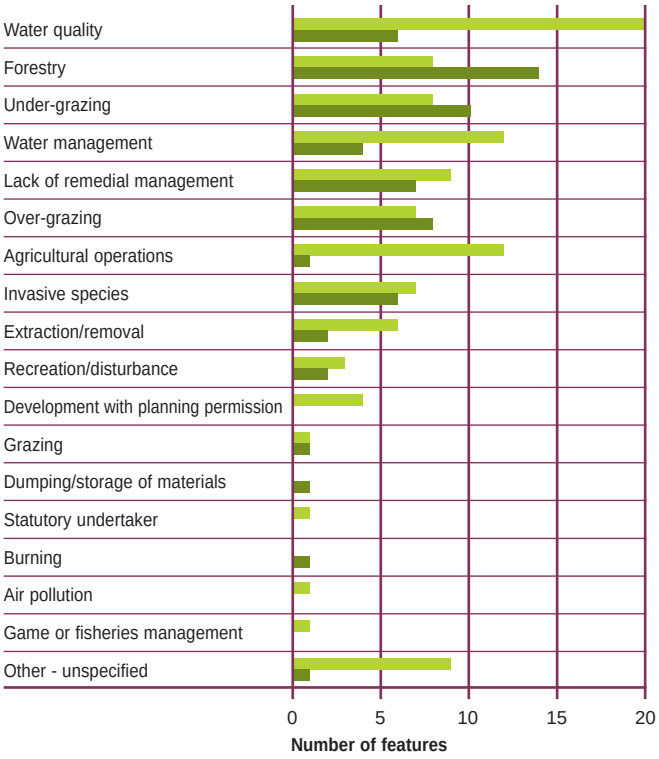
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100%	50-80%	20-50%	0-20%	Not assessed (Natura 2000 only)

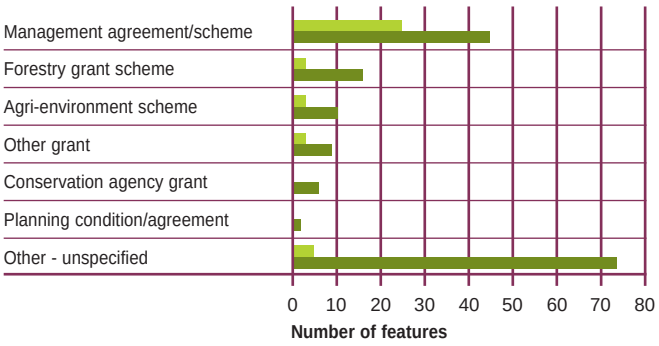
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

This category covers all invertebrate features other than butterflies, dragonflies and damselflies. 62% of the features reported are in favourable condition. This is just below the average for species features, but above the average for all features combined. 72% of A/SSSI and 12% of SAC features reported are favourable, with a further 12% of A/SSSI and 20% of SAC features unfavourable-recovering.

Within these figures, across features on both A/SSSIs and SACs, there are some intriguing differences. Assemblage features - when a site is notified for a combination of species - are less favourable (58%) than single-species interest features (64%) - where a species is notified on a site in its own right. Within the single species features there is considerable variation. For example, snails (including a number of very small and rare species for which sites have been notified under the Habitats Directive) are only 29% favourable, whereas beetles (including the stag beetle *Lucanus cervus*, the UK's largest beetle species) are 76% favourable.

A mix of adverse activities are reported; these relate to the variety of individual features within this reporting category. Management agreements are key to achieving favourable condition. Care is needed in interpreting these assessments, as other than for freshwater pearl mussel and white-clawed crayfish, guidance on setting conservation objectives for invertebrate features had not been fully developed at the time the assessments were made.

Freshwater pearl mussel

The freshwater pearl mussel *Margaritifera margaritifera* has suffered considerable declines in its abundance and range in the past. Sites have been designated for the most important remaining populations. 73% of the assessments required on SACs have been reported. On only three rivers have freshwater pearl mussels been found to be in favourable condition (16%). The remainder of sites are in unfavourable condition (12% unfavourable-recovering). This probably reflects the wider conservation status of the species in the UK with most populations suffering from low abundance and/or poor reproductive success. Pearl fishing has been an important factor in the species' decline and evidence suggests this now operates at a greatly reduced level. Water quality and water management have been found to be particular concerns at many sites. Agricultural activities and development pressure have also been listed as pressures on some designated sites. Work is underway to identify appropriate management measures to improve the condition of freshwater pearl mussel sites.

White-clawed crayfish

92% of the white-clawed crayfish *Austropotamobius pallipes* assessments required on SACs have been reported; 27% are favourable and 73% unfavourable. None are unfavourable-recovering. The principal reasons for this assessment are the continued spread of crayfish plague together with the spread of the invasive signal crayfish *Pacifastacus leniusculus* to previously unaffected river stretches. Exposure of crayfish to pyrethroids from sheep dip is another significant factor contributing to the unfavourable status of the species.

Flowering plants and ferns

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the flowering plants and ferns criteria outlined in section 3 of *Chapter 11 Vascular plants (flowering plants, ferns and their allies)* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

Sites can be notified for individual species for: species listed on Schedule 8 (plants) of the Wildlife and Countryside Act, 1981, Red Data Book (RDB) species, endemics, non-endemics threatened in Europe, declining species and species at the edge of their range, and microspecies and hybrids.

Sites may also be notified for combinations of species, based on a scoring system of species occurring in 1-100 10km squares within Great Britain (encompassing RDB nationally rare and nationally scarce species).

If sites with particularly good species lists are not already selected for their habitat importance or for presence of rare or scarce species, such floristic assemblages can then qualify for selection where a locality has 75% or more of the total vascular plant species list for a community type of the National Vegetation Classification (NVC).

At present there are 115 vascular plants (flowering plants and ferns) listed on Schedule 8 (plants) of the Wildlife and Countryside Act, 1981. This schedule is reviewed at five-yearly intervals, and therefore any additions or deletions should be taken into consideration.

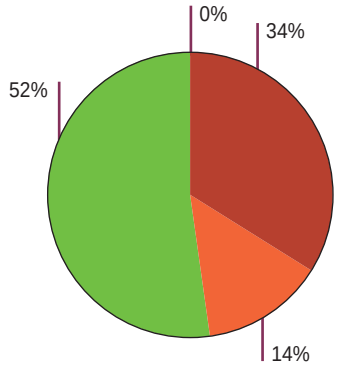
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition*	46%	53%	52%
Main monitoring coverage	E, S, W	E, S, NI	
Reported assessments	39	285	
Completeness of assessments	75%	unknown	
Distribution of features			UK

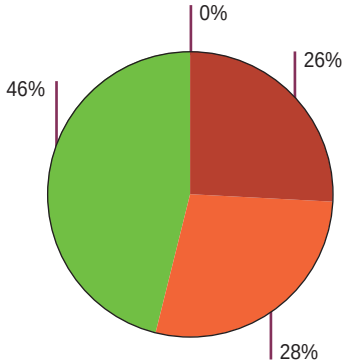
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	28	162
Scotland	5	102
Wales	5	0
Northern Ireland	1	21
United Kingdom	**39**	**285**

Condition assessment - SSSI features



Condition assessment - Natura 2000



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

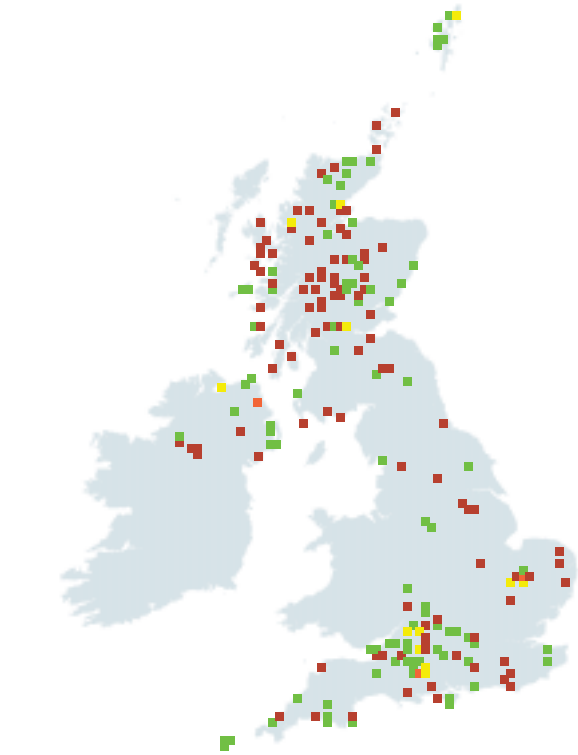
Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

Under Annex II of the EC Habitats Directive, the following vascular plants qualify as features for the selection of Special Areas of Conservation (SACs) in the UK: Killarney fern *Trichomanes speciosum*, shore dock *Rumex rupestris*, marsh saxifrage *Saxifraga hirculus*, creeping marshwort *Apium repens*, early gentian *Gentianella anglica*, floating water-plantain *Luronium natans*, slender naiad *Najas flexilis*, lady's-slipper orchid *Cypripedium calceolus* and fen orchid *Liparis loeselii*.

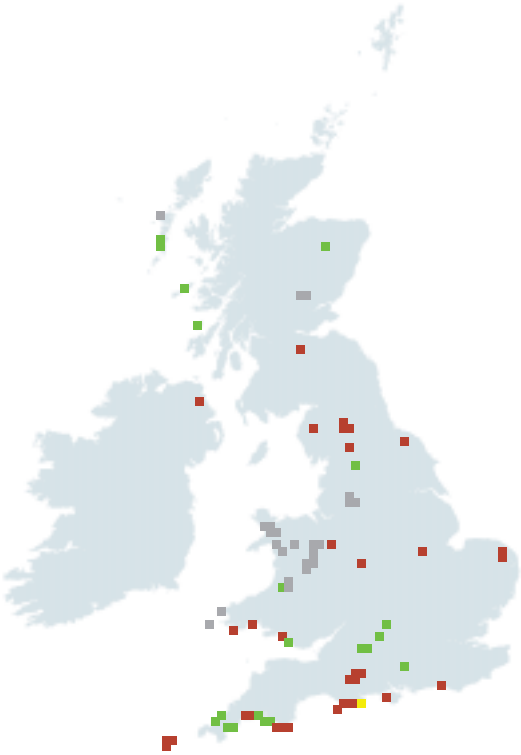
**Note: the figure for favourable condition in the pie charts is marginally different from that shown in the summary statistics table - this is a result of rounding to show small segments effectively; the figures in the summary statistics table are correct.*

SSSIs



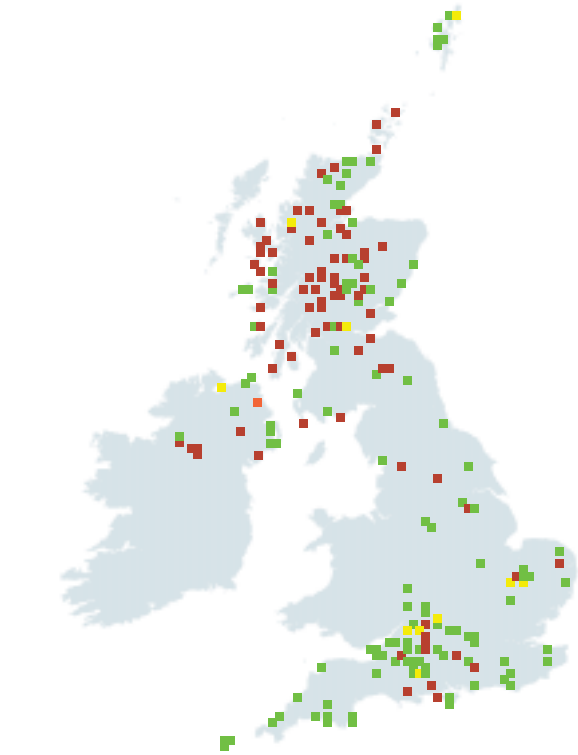
Current condition of SSSI/ASSI features

Natura 2000

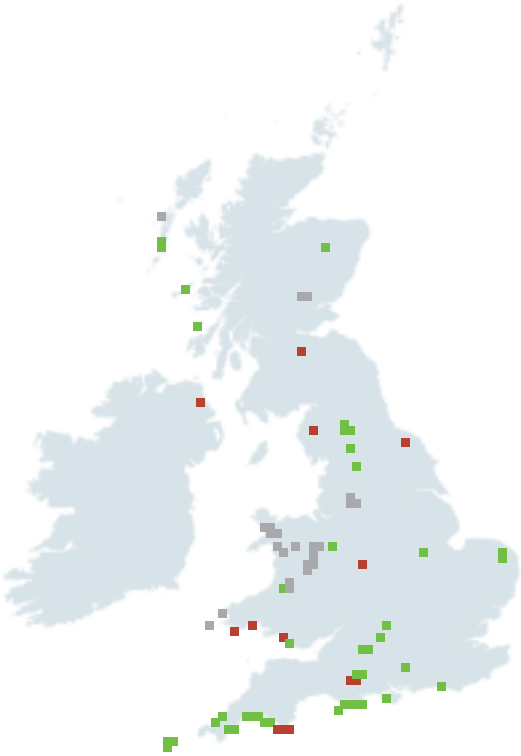


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

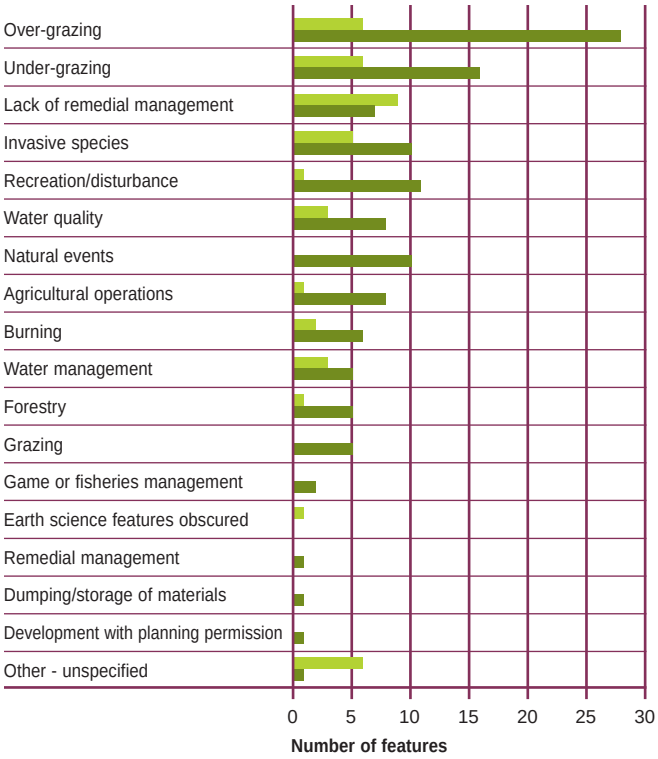
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% | 50-80% | 20-50% | 0-20% | Not assessed (Natura 2000 only)

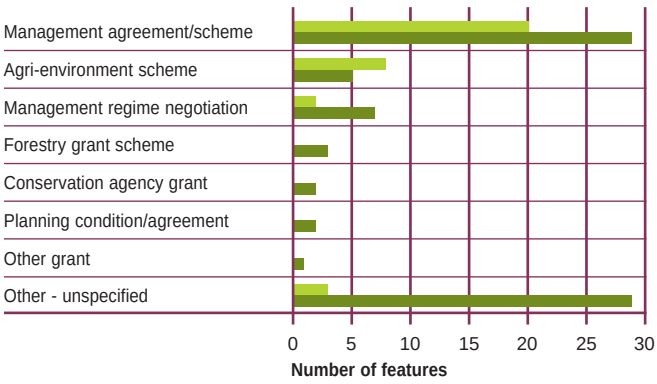
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

52% of flowering plant and fern features reported are in favourable condition. This is below the average for species features, and just below the average for all features combined. 53% of A/SSSI and 46% of SAC features reported are favourable; a further 14% of A/SSSI and 28% of SAC features are unfavourable-recovering.

These total figures mask a substantial difference in condition assessments for combinations of vascular plants as compared to single-species interest features. 138 of the features reported are combinations (assemblages) of vascular plants and of these 44% are in favourable condition. However, in comparison, 58% of the 186 single species interest features reported are in favourable condition. This difference is due to the fact that all of the component species in the combination must be favourable for the combination feature to be classified as favourable. Within the single species interest features are 20 orchid features, of which 65% are in favourable condition, and another 15% unfavourable-recovering.

Within the single species interest features it is also possible to separate out subsets of species that are nationally rare or scarce, or are given protection through listing on Schedule 8 of the Wildlife and Countryside Act. Nationally scarce plants are defined as those which occur in 16-100 10km squares, nationally rare plants as those which occur in 15 or fewer 10km squares. The nationally scarce plants reported are in better condition (64% favourable) than the nationally rare (49% favourable), though more of the rare plants are in unfavourable recovering condition (24% for nationally rare and 16% for nationally scarce). Plants protected through Schedule 8 are reported as 53% favourable and 24% unfavourable-recovering.

There is reasonable coverage in the assessments on SACs of three Annex II species: fen orchid *Liparis loeselii*, slender naiad *Najas flexilis*, and marsh saxifrage *Saxifraga hirculus*. The condition of *Liparis* and *Saxifraga* is of great concern: both of the Welsh fen orchid sites reported are unfavourable-declining, whilst two out of the three saxifrage sites are unfavourable. Both plants also occur in England, where the features are listed as unfavourable. Slender naiad appears to be doing better, with all three SAC features in favourable condition, although inland SSSI sites are unfavourable.

The most commonly recorded adverse activity for unfavourable features is over-grazing, with 34 assessments listing this as a problem. It is likely that this is particularly a problem on large upland sites in Scotland. Management agreements are seen as key to securing favourable condition.

Non-flowering plants and fungi

Context

Sites of Special Scientific Interest (SSSIs) can be notified if they include qualifying features under the non-flowering plants criteria outlined in section 3 of the 1992 revision of *Chapter 12 Non-vascular plants* of the *Guidelines for Selection of Biological SSSIs*. In Northern Ireland, ASSIs are selected on a very similar basis - the *Guidelines for the Selection of Biological ASSIs in Northern Ireland* is an addendum to the SSSI guidelines rather than an alternative.

The groups covered by these guidelines are bryophytes (mosses, liverworts, and hornworts), fungi, lichens and charophytes (non-marine algae, also known as stoneworts). The guidance is designed to select sites where there are important communities of lower plants, as well as rare and more threatened species. Many sites will be selected on the basis of habitat and vegetation types e.g. bogs. Other sites consist of habitats characteristically dominated by non-vascular plants (e.g. rock outcrops) or which may have non-vascular plants as the major interest feature (e.g. woodlands with the distinctive *Lobarion pulmonariae* lichen association).

Sites can be notified for individual species for: species listed on Schedule 8 (plants) of the Wildlife and Countryside Act, 1981, Red Data Book (RDB) species, endemics, non-endemics threatened in Europe, and declining species and species at the edge of their range.

Sites may also be notified for combinations of species (bryophytes, lichens and charophytes) reaching a threshold value based on a scoring system, which takes account of: nationally rare, nationally scarce, Atlantic, sub-Atlantic and western British bryophytes, and 'indicator' (lichens and woodland bryophytes) species.

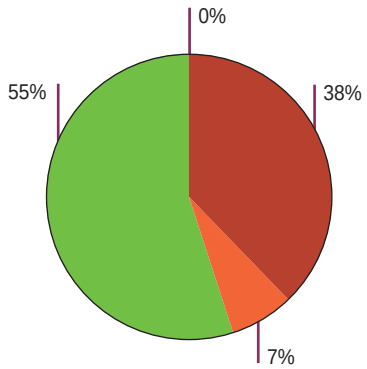
Summary statistics

	SAC	SSSI/ASSI	Total
Favourable condition	33%	55%	52%
Main monitoring coverage	E, S, W	E, S	
Reported assessments	18	113	131
Completeness of assessments	62%	unknown	
Distribution of features			UK

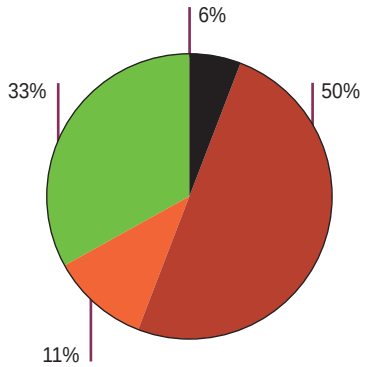
Number of assessments reported by country and site type

Country	SAC	SSSI/ASSI
England	11	29
Scotland	3	82
Wales	4	0
Northern Ireland	0	2
United Kingdom	**18**	**113**

Condition assessment - SSSI features



Condition assessment - Natura 2000



Proportion of assessments falling into each of the condition categories. Note that the unfavourable category includes all reports of unfavourable condition except unfavourable-recovering, which is shown as a separate segment.

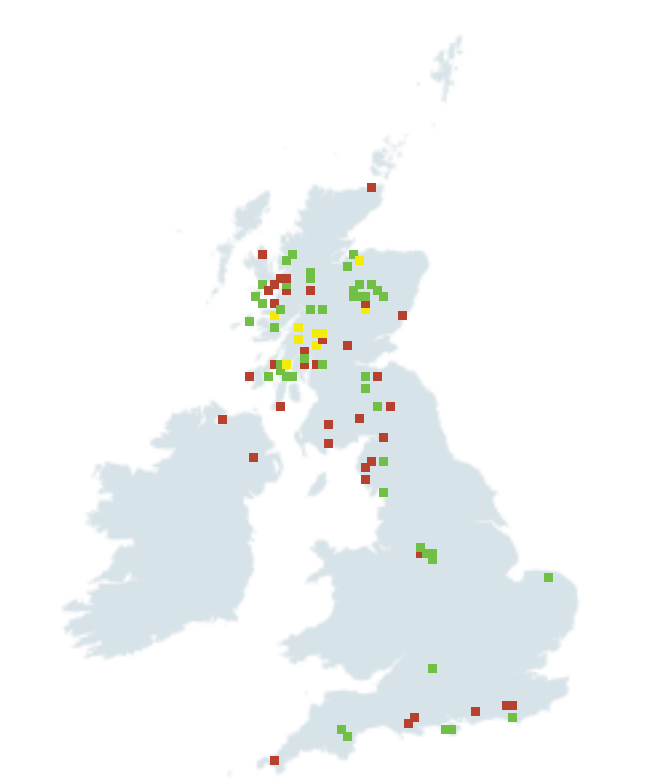
Key:

Favourable | Unfavourable-recovering | Unfavourable | Destroyed (whole or part)

At present there are 37 bryophytes (28 mosses, 9 liverworts and hornworts), 30 lichens, 2 stoneworts and 4 fungi listed on Schedule 8 (plants) of the Wildlife and Countryside Act, 1981. This schedule is reviewed at five-yearly intervals, and therefore any additions or deletions should be taken into consideration.

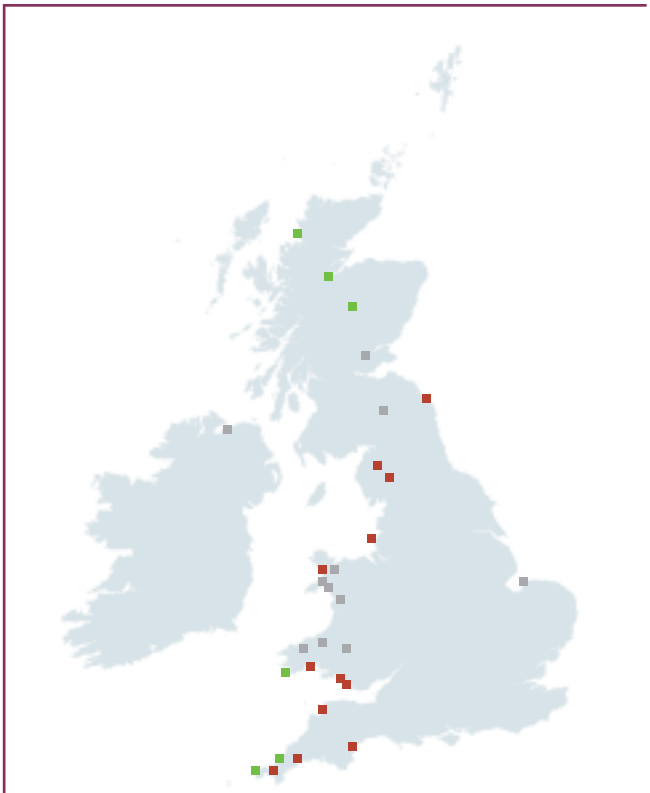
Under Annex II of the EC Habitats Directive, the following non-flowering plants qualify as features for the selection of Special Areas of Conservation (SACs) in the UK: green shield-moss *Buxbaumia viridis*, western rustwort *Marsupella profunda* (a priority species), slender green feather-moss *Drepanocladus* (*Hamatocaulis) vernicosus*, and petalwort *Petalophyllum ralfsii*.

SSSIs



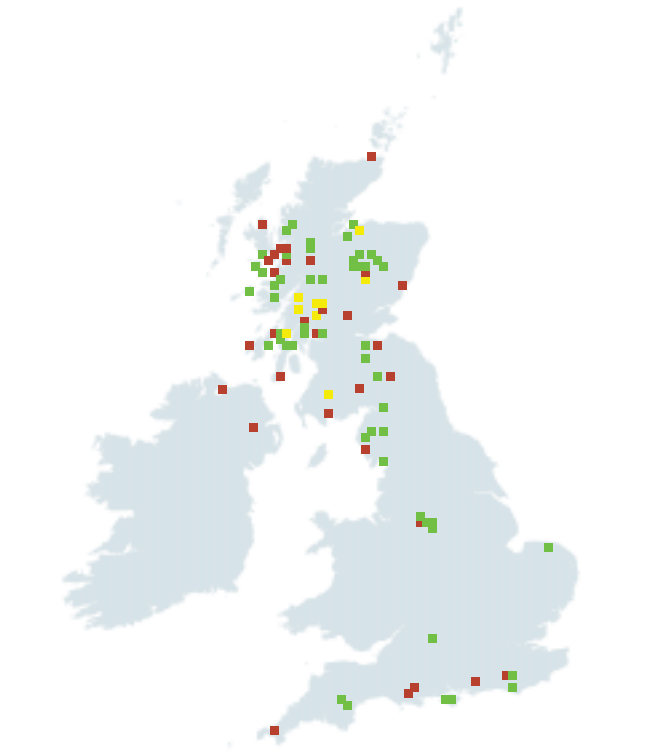
Current condition of SSSI/ASSI features

Natura 2000

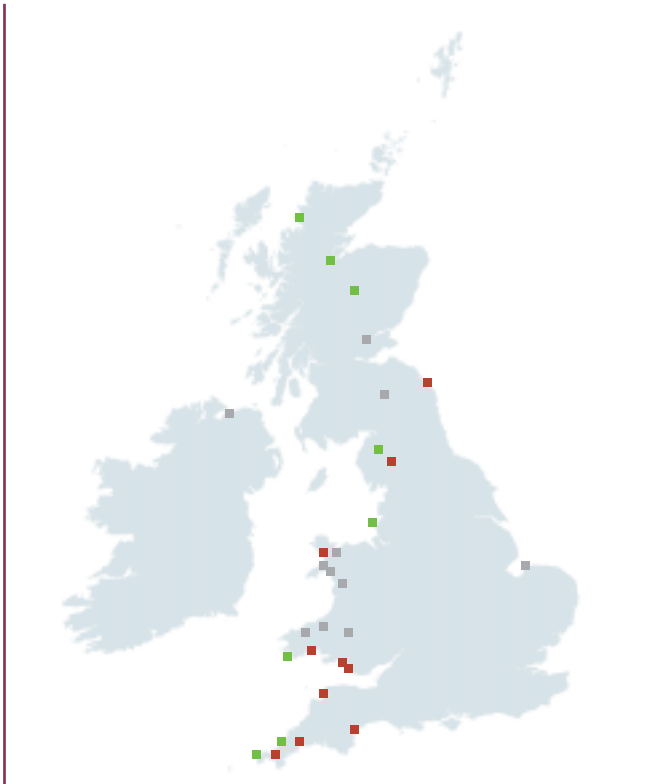


Current condition of SAC features

Distribution of features showing assessments of favourability (where unfavourable-recovering is counted as unfavourable).



Condition of SSSI/ASSI features, with those currently reported as unfavourable-recovering shown as 'favourable'



Condition of SAC features, with those currently reported as unfavourable-recovering shown as 'favourable'

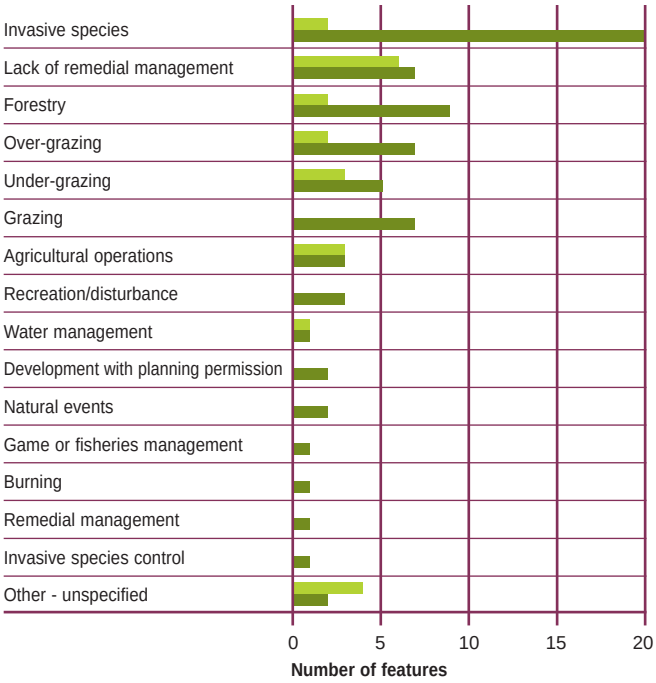
The implication of the unfavourable-recovering condition assessments is that at some point in the future these features should become favourable. These maps show the effect of that recovery by counting the favourable and unfavourable-recovering assessments together.

Key: Proportion of assessed features on 10km squares that are favourable:

80-100% 50-80% 20-50% 0-20% Not assessed (Natura 2000 only)

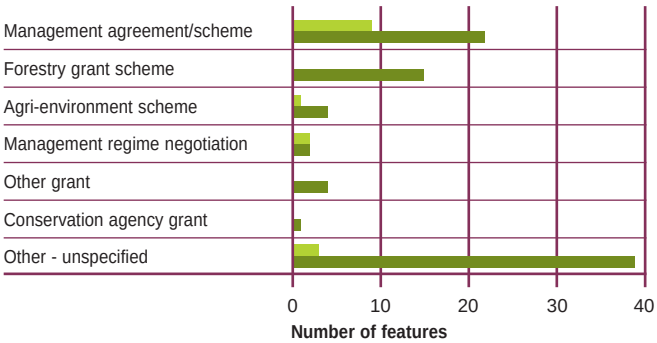
Important Note: we do not have information on the timescale of the predicted recovery, which may be influenced by many past, natural and human related factors. A sustained, sympathetic management regime is more likely to result in 'favourable' condition being attained.

Adverse activities



The number of interest features where an activity has been reported as being implicated in the unfavourable condition of a feature. More than one adverse activity may be reported for each feature.

Management measures



The number of interest features where a measure has been taken on a site to improve or maintain the condition of an interest feature. More than one measure may be reported for each feature.

Key:

Natura 2000 features

SSSI features

Interpretation

52% of non-flowering plant features reported are in favourable condition. This is below the average for species features, and just below the average for all features combined. 55% of A/SSSI and 33% of SAC features reported are in favourable condition. A further 7% of A/SSSI and 11% of SAC features reported are unfavourable-recovering.

Monitoring guidance has only been produced for bryophytes and lichens, and this was only published at the end of the first six years. In Scotland, where the guidance was developed and tested, 39 bryophyte assemblages have been reported, together with 37 assessments of lichen assemblages. Whilst this dataset is relatively limited, one striking difference can be observed: 79% of bryophyte assemblages have been judged in favourable condition, whilst only 30% of lichen assemblages have achieved this. The reasons underlying this difference deserve further investigation. One suggestion was that lichen assessments may have emphasised the potential impact of non-native species more than the bryophyte assessments. However, there is only a slight increase in the proportion of unfavourable assessments where this is listed: 58% of unfavourable lichen assessments show this as a problem, as opposed to 50% of unfavourable bryophyte assessments. Another possibility is that grazing pressure, which is set as a target for lichens but not bryophytes, may be a factor in the differences observed. The reason why so many assessments show invasive species as an adverse activity is that many of the Scottish woodlands, which are strongly represented in the dataset, have problems with Rhododendron *Rhododendron ponticum.*

Data Preparation

Common Standards Monitoring was piloted in 1998 and implementation commenced in April 1999. This report is based on data for the period April 1998 - March 2005. The data were provided by the country agencies to JNCC in July and August 2005, using a standard proforma.

JNCC collated these four sets of data (one each for England, Scotland, Northern Ireland, and Wales) into a UK wide database of condition assessments for features on SSSIs (ASSIs in Northern Ireland), SACs, SPAs and Ramsar sites. The database contains a row for each feature reported on each designated site. A feature on a double-badged site (e.g. a site designated both as a SSSI *and* as a SAC) is recorded as two rows in the database - one row for each designation type. Any reader wishing access to the raw data on which this report is based should make their request to the relevant country agency monitoring contact (see www.jncc.gov.uk/page-3592 for details).

Data were split into 44 reporting categories based on Biodiversity Action Plan broad habitats, taxonomic groups, and broad divisions of earth science. Every assessment was assigned to a single reporting category. JNCC developed standard graphs, maps, and tabulations for each reporting category. For SACs and SPAs, JNCC are able to collate lists of qualifying features that have not yet been assessed. This cannot be done for SSSIs because there is not yet a UK-wide list of notified interest features.

In addition to the condition assessments, data were also collated on 'adverse activities' and 'management measures'. 'Adverse activities' are those factors which are thought to be leading the feature into unfavourable condition. 'Management measures' are the actions which are helping to maintain favourable condition, or return a feature from unfavourable to favourable condition. More than one activity or measure can be recorded for each assessment of the condition of a feature.

To facilitate map display on the website and hard copy report, it was decided to display the spatial locations of the assessments on a 10km square basis. For each and every monitoring assessment a 10km square is calculated based on the site centroid.

The condition maps use this 10km square to group all of the condition assessments within a reporting category - for example, ten different assessments are reported for lowland calcareous grassland on SSSIs within grid square ST45. As only one of these ten, i.e. 10%, is currently favourable, this square is coloured red on the 'current' SSSI condition map for lowland calcareous grassland. The 'future' map shows this square as green. This is because seven of the ten features are currently 'unfavourable-recovering'. Assuming that recovery is achieved for these seven features, at a point in the forseeable future, eight out of ten, i.e. 80%, of the lowland calcareous grassland features within square ST45 will be favourable. Note that no prediction is made on the timescale for recovery for any feature.

For large SACs (i.e. those falling into more than one 10km squares), condition assessments have been allocated to all the 10km square which, to the best of our knowledge, host the feature. This has been possible because for SACs there are 10km square distribution maps for each interest feature. JNCC do not hold equivalent spatial data for SPA, Ramsar or SSSI sites and have, therefore, only been able to use the site centroid to locate the interest features on these site types.

JOINT NATURE CONSERVATION COMMITTEE

Species

The Joint Nature Conservation Committee (JNCC) is the forum through which the three country nature conservation agencies - English Nature, Scottish Natural Heritage (SNH), and the Countryside Council for Wales (CCW) - deliver their statutory responsibilities for Great Britain as a whole and internationally. The Committee consists of representatives of these agencies, as well as the Countryside Agency, independent members, and non-voting members appointed by the Department of the Environment, Northern Ireland.

JNCC's statutory responsibilities, known as the special functions, contribute to maintaining and enriching biological diversity, enhancing geological features and sustaining natural systems.

The special functions are principally to:

- advise ministers on the development of policies for, or affecting, nature conservation in Great Britain and internationally;
- provide advice and knowledge to anyone on nature conservation issues affecting Great Britain and internationally;
- establish common standards throughout Great Britain for the monitoring of nature conservation and for research into nature conservation and the analysis of results;
- commission or support research which the Committee deems relevant to the special functions.

Increasingly, JNCC is implementing its national advisory functions on a United Kingdom basis, and is working closely with the Environment and Heritage Service, Northern Ireland. JNCC was established under statute by the Environmental Protection Act 1990 and commenced its work in April 1991. In 2005, its support unit became a company limited by guarantee, allowing the organisation to, amongst other benefits, employ its own staff and let its own contracts.

Details of publications produced by JNCC are available from:
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ENGLISH NATURE

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