

State of nature in the EU

Results from reporting under the nature directives 2013-2018

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European Environment Agency
Kongens Nytorv 6
1050 Copenhagen K
Denmark

Tel.: +45 33 36 71 00

Web: eea.europa.eu

Enquiries: eea.europa.eu/enquiries

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Authors and acknowledgements

This report was developed and written by Sandra Naumann, Rebecca Noebel, Zelmira Gaudillat, Ulf Stein, Lina Röschel, Sophie Ittner and McKenna Davis (European Topic Centre on Biological Diversity (ETC/BD)), Anna Staneva and Claire Rutherford (BirdLife International under contract of the European Commission) and Carlos Romão (European Environment Agency (EEA)).

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The assessments included in the report synthesise the work of the EEA's European Topic Centre on Biological Diversity. They are based on the information reported by EU Member States as part of the implementation of the Birds Directive (Article 12) and the Habitats Directive (Article 17) as well as a variety of other sources, such as the European Environment Information and Observation Network (Eionet), Corine Landcover and the Natura 2000 database.

Executive summary

Introduction

The EU nature directives — i.e. the Habitats and Birds Directives — coordinate conservation efforts for more than 2 000 species and habitats across the EU Member States with the aim of maintaining them at or restoring them to a favourable conservation status. This report describes the state of nature in the EU during the period from 2013 to 2018, based on Member States' reporting under these directives and on subsequent assessments at EU or EU biogeographical and marine levels. The data collected serve to identify successes and shortcomings in nature conservation, key pressures and threats, the status of current conservation measures and the restoration needed to further improve the conservation status of targeted habitats and species and the population status of birds.

The report also gives insights into the Natura 2000 network and its contribution to achieving favourable conservation statuses and to making progress towards targets 1 and 3 of the EU Biodiversity Strategy to 2020. Limitations due to poor data quality or gaps in data completeness still exist. A noteworthy portion of the reported information comes from expert opinion and partial surveys, indicating the absence or incomplete monitoring schemes in Member States. Nevertheless, the data presented are a milestone in assessing the state of nature in the EU and provide a strong basis for improving reporting, assessment and implementation to be able to achieve the aims of the EU Biodiversity Strategy for 2030.

Status of and trends in bird populations (Chapter 2)

This chapter provides an overview of the size of and trends in bird populations at the national level (reported under Article 12 of the Birds Directive) and of EU-level population statuses and trends for 463 bird species that naturally occur in the EU.

Around half of the species have a good EU status, which is slightly less (5 %) than during the last reporting period (2008-2012). The proportion of species with poor and bad status, however, has increased by 7 % in the last 6 years to reach a total of 39 %. This is partly

because of a mixture of changes in survey and analysis methodology and in data quality but also because of genuine deterioration. For breeding birds, increasing trends in populations are reported in the short and long term for around one quarter and one third of assessed taxa, respectively; one third of taxa have decreasing trends in population in the short and/or long term. The proportion of wintering birds with increasing short- and/or long-term population trends has dropped by 9 % compared with the previous reporting period. A quarter of Annex I taxa of the Birds Directive show a deterioration in their status, despite the implementation of dedicated conservation measures.

At the Member State level, around 50 % of improving population trends concern Annex I and Special Protection Area trigger species, most of which are wetland and marine birds. Breeding birds have the highest share of reports (about 80 %) showing improving population trends. Such improvements are due to the implementation of habitat protection or restoration measures and to improvements in knowledge due to research and better monitoring and awareness-raising activities. Farmland and forest birds, however, show few improving trends. Overall, the high percentage of unknown data across bird taxa highlights the need to establish or re-enforce appropriate, coordinated, state-supported monitoring schemes in all Member States.

Status of and trends in habitats and species (Chapter 3)

This chapter provides an overview of data and assessments reported by Member States under Article 17 of the Habitats Directive as well as assessments of conservation status and trends at the EU biogeographical and marine levels, covering 233 habitats and 1 389 species. Only 15 % of **habitat** assessments have a good conservation status, with 81 % having poor or bad conservation status at EU level and 4 % reported as unknown. Over 50 % of dune habitats and bog, mire and fen habitats have a bad conservation status. Compared with the previous reporting period, the share of habitats with bad conservation status has increased by 6 %. These

differences largely relate to changes in the methods used or variations in data quality.

Across the different terrestrial regions, the Atlantic and Steppic regions stand out with only 4 % and a notably high 72 % of habitat assessments with good conservation status, respectively. Marine regions have fewer habitats with good status than their terrestrial counterparts, with good conservation status reported only for the Marine Black Sea region and an overall high share of unknown assessments. Looking at habitat trends, only 9 % of all habitat assessments with poor or bad conservation status show improvement, while 36 % continue to deteriorate at the EU level. Grasslands, dunes, and bog, mire and fen habitats show strong deteriorating trends, while forests have the most improving trends. On average, 6 % of all habitat assessments — representing 105 habitat types — show improvements in conservation status and/or trends due to targeted management and restoration measures or expansions of the habitat area.

Around a quarter of **species** have a good conservation status at EU level, which is an increase of 4 % compared with the previous reporting period (presumably due to changes in the methods used or variations in data quality). Reptiles and vascular plants have the highest proportion of good conservation status (35 %). In contrast to habitats, the majority of terrestrial species assessments show higher shares of good than bad conservation statuses. Nevertheless, the two terrestrial regions with the lowest share of good conservation status assessments are the same as for habitats (i.e. Atlantic and Continental). Over half of the assessments report a poor or bad status.

The marine regions have many assessments with unknown conservation status, reflecting the general lack of marine species data. The Marine Baltic region has no unknown assessments but the highest percentage of species with bad conservation status (70 %). Looking at conservation status trends, only 6 % of species are improving (largely fish and mammals) and 33 % are unknown (largely marine mammals). Looking at improvements in status and/or trends since the last reporting period, these positive changes also mostly involve mammals and fish as well as plant species.

Pressures and responses (Chapter 4)

This chapter looks at the pressures and measures reported by Member States. Although the drivers of habitat degradation and species decline are diverse, agricultural activities such as abandoning extensive management and intensifying management practices are the most common pressure overall. Urbanisation is the second largest pressure, which especially affects habitats such as dunes and coastal and rocky habitats. Forestry

activities are the main pressure on species (e.g. arthropods, mammals and non-vascular plants). Pollution of air, water and soil from different origins affects most habitats, particularly in the Atlantic and Continental regions.

The majority of habitat groups are also vulnerable to natural processes (e.g. succession of semi-natural habitats). Wintering and passage birds are threatened by the exploitation of species (i.e. hunting and illegal killing). Further pressures include invasive alien species (affecting habitats more than species), modifications to hydrological flow (freshwaters), physical alterations to water bodies (freshwater fish), energy-related pressures (hydropower installations — freshwater fish; electricity and communication transmissions — mostly birds), pollution and climate change (droughts and decreases in precipitation — mostly amphibians). Pollution, particularly from agricultural activities and urbanisation, negatively affects a wide range of habitats and species.

The nature directives emphasise the need for conservation measures to respond to these pressures with mandatory requirements for Natura 2000 sites. For habitats, most of the measures applied aim to maintain forests, grasslands, freshwater and coastal habitats and include actions such as reducing agricultural pressures by reinstating appropriate grassland management or reducing diffuse pollution and the use of fertilisers. For non-bird species, the measures applied largely aim to maintain the status of vascular plants, arthropods, mammals and fish by, for example, preventing the loss of their natural habitats.

Approximately 40 % of the reports for birds indicate that measures have been taken, predominantly targeting breeding birds. For most habitats and species, there is a positive link between measures taken (especially proactive restoration measures to improve structure and functions) and a good conservation status. However, conservation status and trends have not significantly improved and deterioration is ongoing. These findings highlight the importance of implementing those measures that have not yet been taken or scaling up and monitoring those currently being implemented. In addition, at least 226 000 km² of Annex I habitats still need to be restored to ensure their long-term viability.

Status of the Natura 2000 network (Chapter 5)

Natura 2000 represents the largest coordinated network of nature conservation areas in the world, covering almost one fifth of the EU's terrestrial land area and approximately 10 % of its seas. The network consists of 'Special Protection Areas' under the Birds Directive and 'Special Areas of Conservation'/Sites of Community Importance' under the Habitats Directive, totalling almost 28 000 sites. Forests and

grasslands make up over 60 % of the network's terrestrial area. Land use changes within the network show a decrease in grasslands and forests (albeit less than outside the network) and an increase in arable land and permanent crops (despite their having decreased outside the network).

On average, species are better covered by the Natura 2000 network than habitats. While vascular plants and terrestrial reptiles are particularly well covered, fish and marine reptiles (except for their nesting sites) are much less well covered. Scrubs, heaths and dunes are the best covered habitats; forest coverage, however, falls rather short. Coverage of birds is generally low, especially for breeding birds with large breeding distribution areas and dispersed nesting sites (making it difficult to include all of these areas within the network).

Measuring the ecological effectiveness of a network of protected areas is difficult, as baseline data are scarce and the data have many data limitations, such as the lack of data enabling comparison of the conservation status of and trends in species and habitats inside and outside of the Natura 2000 network. Statistics for this assessment link the level of coverage of Annex II non-bird species and Annex I habitats and the proportion of good status assessments and reported changes in status and improvements in trends between reporting periods. The results show that a good conservation status and less deterioration/decline are more likely for species and habitats that are well covered by the network.

Although the results for birds are less conclusive, they indicate that decreasing population trends are sharper for species not targeted for protection under the Natura 2000 network (non-SPA species). Despite some positive impacts, however, the potential effectiveness of the network has not been achieved. Realising the network's potential requires an increase in the adaptive capacity of and functional connectivity between sites and the level of protection beyond sites; an increase in the effectiveness of management and monitoring inside and outside the network; addressing gaps in knowledge and communication; and streamlining biodiversity protection across key sectoral policies. These efforts should be supported by a reduction in the pressures that Natura 2000 sites face.

Meeting EU Biodiversity Strategy to 2020 targets (Chapter 6)

This chapter outlines the progress made towards targets 1 and 3 of the EU Biodiversity Strategy to 2020. Target 1 aims to achieve full implementation of the nature directives and, for a high percentage of European habitats and species, to maintain them at and restore

them to good conservation status by 2020. This target has not been reached: a 12 % gap needs to be closed to achieve the target for habitats; a 20 % gap remains for bird species; and a 2 % gap remains for non-bird species. In fact, high shares of assessments actually show further deterioration.

Target 3 aims to optimise agriculture and forestry's benefits for biodiversity. Target 3a strives to 'maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the Common Agricultural Policy'. No real progress has been made towards reaching this sub-target, and more than 45 % of Annex I assessments of agricultural habitats were assessed as bad. The status of and trends in agricultural habitats that are fully dependent on management measures are worse than those of partly dependent habitats such as natural grasslands. Furthermore, agricultural or farmland species are reported to have worse trends than forest species.

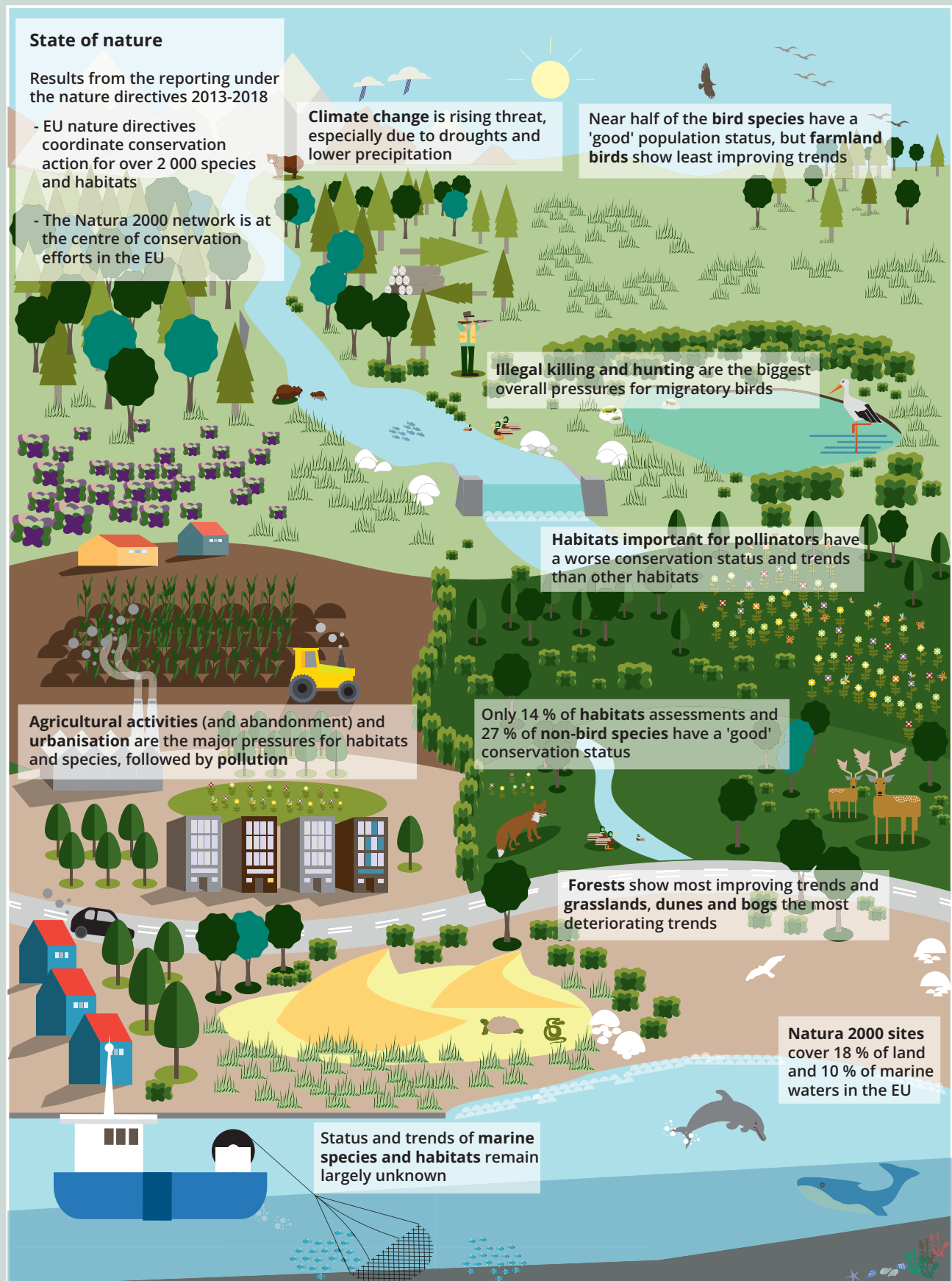
Target 3b aims to improve biodiversity and ecosystems affected by forestry. Assessments revealed that, while 31 % of forest habitat assessments have a bad conservation status, 32 % of forest bird species show an improving trend, 40 % a stable trend and only 16 % a deteriorating trend.

Conclusions and outlook

Despite significant efforts by Member States and some improvements, biodiversity in the EU continues to decline and faces deteriorating trends from changes in land and sea use, overexploitation and unsustainable management practices, as well as water regime modification, pollution, invasive alien species and climate change. Although some species and habitats show improvements, progress has not been sufficient to meet the objectives of the EU Biodiversity Strategy to 2020.

The new EU Biodiversity Strategy for 2030 strives to be more successful and ensure that ecosystems are healthy, resilient to climate change, rich in biodiversity and able to deliver essential ecosystem services. Ambitious targets address the main drivers of biodiversity loss, but they need to be accompanied by greater implementation action to be effective. Additional effort is also needed to improve Member States' monitoring capacities to fulfil the requirements of the nature directives, develop new indicators to evaluate the impact of the Natura 2000 network on biodiversity policy objectives (i.e. nature directives and EU Biodiversity Strategy for 2030) and ensure sufficient financial and human capacities to underline a robust governance and policy framework to fully implement the nature directives and relevant environmental regulations.

The State of nature report in a nutshell



1 Introduction

The EU nature directives — i.e. the Habitats and Birds Directives (EU, 1992, 2009) — coordinate conservation efforts for more than 2 000 species and habitats across all Member States in the EU. Their overarching aim is to restore or maintain these species and habitats to a favourable conservation status in the long term. At the centre of these policies is the Natura 2000 network, which covers almost 20 % of terrestrial land and 10 % of marine waters in the EU, making it the largest coordinated network of nature conservation areas in the world.

Every 6 years, EU Member States are required to report on the sizes of and trends in populations of birds (Article 12 of the Birds Directive) and on the conservation status of and trends in targeted habitats and species (Article 17 of the Habitats Directive) within their European territories⁽¹⁾. Reporting consists of three main steps: (1) collecting the data in reports for each Member State; (2) processing Member States reports; and (3) assessing the reported data. Details of each step are summarised in the graphic below (see Figure 1.1). The EEA and its European Topic Centre on Biological Diversity (ETC/BD) provide technical and scientific support to the European Commission and the EU Member States throughout all stages of the reporting process, and several working groups also provide assistance. In total, more than 220 000 people across Europe (almost 60 % of whom are volunteers) have contributed to this process.

The outcomes of Article 12 and Article 17 reporting form the basis of the *State of nature in the EU* report. Through streamlined monitoring processes based on a set of minimum standards, Member States reports provide a baseline for measuring the status of and trends in species and habitats over multiple monitoring periods (i.e. between 2000 and 2006, 2007 and 2012, and 2013 and 2018 for the Habitats Directive and 2008 and 2012, and 2013 and 2018 for the Birds Directive). The data collected serve to identify successes in nature conservation, shortcomings in current protection measures and additional actions and measures needed

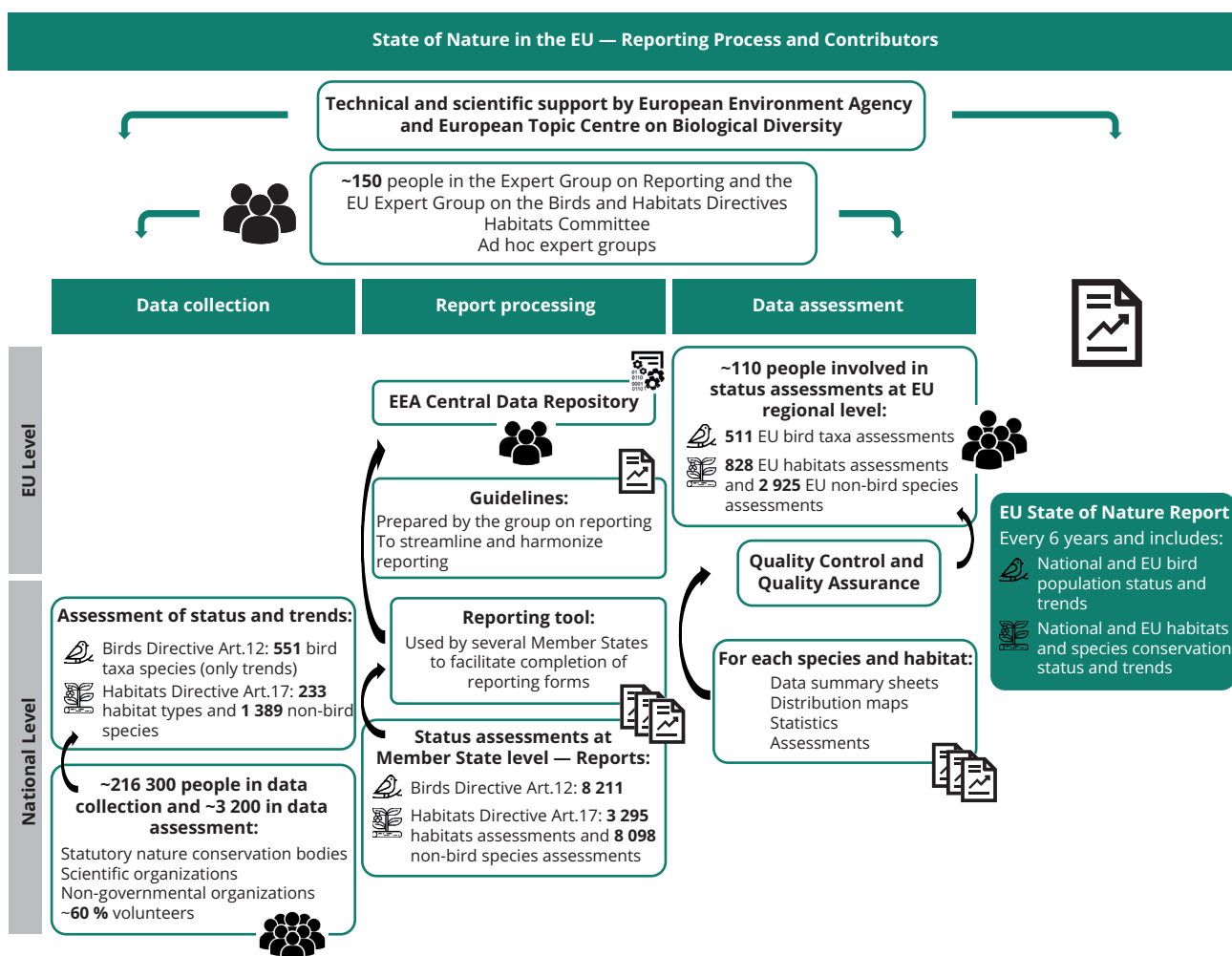
to further improve the conservation status of targeted habitats and species and the population status of birds.

The EU population status of birds under the Birds Directive and the EU conservation status of habitats and species under the Habitats Directive (hereafter referred to as EU status) are evaluated using various categories and assessment methods. However, overarching categories such as 'good', 'poor', 'bad' and 'unknown' have been introduced in this report to ensure consistent communication of the EU conservation and population status under the Habitats and Birds Directives (see Table 1.1).

Article 12 and Article 17 reporting data also support other EU and global policies and contribute to wider conservation and management objectives. Data from nature directive reporting are used, for example, to measure progress towards meeting the targets of the EU strategies on biodiversity and towards meeting the global Aichi biodiversity targets. The findings from Member States' reporting also help to evaluate the implementation of the Sustainable Development Goals (SDGs) by identifying gaps and priority areas for action, e.g. SDG 13 (combat climate change and its impacts), SDG 14 (conserve the oceans, seas and marine resources) and SDG 15 (protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss).

This report, covering the period from 2013 to 2018, represents the most comprehensive overview of the state of nature in the EU. It also includes the first reporting of results from Croatia, the newest EU Member State. Unless specifically mentioned, the report includes data from the United Kingdom, as it was still an active EU Member State during the reporting period. Looking at the Member State and biogeographical and marine region levels as well as the EU level, the *State of nature in the EU* begins with the main results from the Article 12 and Article 17 reporting (Chapters 2 and 3, respectively), the analysis of the

⁽¹⁾ EU Overseas Countries and Territories and Outermost Regions are not covered by the nature directives.

Figure 1.1 The nature directives' reporting process

Source: Data on staff involved in data collection and assessment and report preparation under Article 12 of the Birds Directive and Article 17 of the Habitats Directive were gathered through a survey of Member States conducted in spring 2020.

Table 1.1 Categories of EU population status of birds and EU conservation status of habitats and species

EU Status	Good	Poor	Bad	Unknown
Categories of EU population status of birds	Secure	'Near threatened' (close to being at high risk of extinction in the near future according to IUCN Red List criteria), 'Declining' or 'Depleted'	'Threatened' (according to IUCN Red List criteria)	Unknown
Categories of EU biogeographical conservation status of habitats and species of Community interest	Favourable	Unfavourable- inadequate	Unfavourable-bad	Unknown

latter being also conducted at the biogeographical level. This includes the status of and trends in populations of birds and non-bird species and of habitats as well as needs for further improvement and restoration. Case studies are presented throughout the report, highlighting the assessments for which an EU status or trend has improved since the previous reporting period. Pressures and responses (i.e. in the form of conservation measures) are presented in Chapter 4 for habitats, non-bird species and birds. Furthermore, a dedicated section presents an in-depth analysis of additional restoration needs for habitats. Chapter 5 focuses on the Natura 2000 network and highlights its current status, changes in its coverage and its contribution to the EU status of birds, non-bird species and habitats. Finally, Chapter 6 outlines progress towards meeting targets 1 and 3 of the EU Biodiversity Strategy to 2020. On this basis, a series of conclusions are presented, reflecting on the information gathered and the actions needed with a view towards the next reporting period and the implementation of the EU Biodiversity Strategy for 2030.

The data collected by Member States on the status of Habitats Directive habitats, birds and non-bird species and on underlying pressures are a milestone in assessing the state of nature in the EU. Both the Habitats and Birds Directives require appropriate monitoring systems to be in place to provide the relevant information for producing such an all-encompassing assessment. Ideally, the data would

have been collected from robust and comprehensive surveys and using methods comparable across all Member States. In many cases, however, the reported information comes from partial surveys that were performed for different purposes. In other cases, suitable data do not exist and expert opinion has been sought. For Habitats Directive habitats and species, more than 40 % of the reported information comes from partial surveys where the estimates cannot be considered robust or representative of entire biogeographical regions. In fact, more than 20 % of the information reported by Member States is based only on expert judgement. The situation for bird data is similar, with more than 30 % of the information coming from partial surveys and more than 15 % being based on expert judgement. Data quality issues are further accentuated by numerous gaps in the information reported. Population trends over the last 12 years, for example, are an essential part of assessing the status at EU level for both Habitats Directive species and birds. However, trends were unknown or missing in 20 % of Member States' reports for breeding birds and 30 % for wintering birds as well as in 34 % of reports for Habitats Directive species.

It is worth mentioning that international multilateral agreements such as the Bern Convention and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds have also established reporting processes. These efforts and their linkages to the nature directives' reporting are explained in Box 1.1.

Box 1.1 Bern Convention and Agreement on the Conservation of African-Eurasian Migratory Waterbirds supporting biodiversity reporting

In 2018, eight Contracting Parties to the Bern Convention reported for the first time under Resolution 8 (2012) on the conservation status and trends and the population trends of a limited number of habitats (nine) and species (12 birds and 25 non-bird species). This first reporting period covered the years 2013-2018 and the reporting format was fully harmonised and standardised with that of Article 12 and Article 17 reporting under the Birds and Habitats Directives, respectively. This first reporting round is clearly more important for building up experience and capacity, but nevertheless it also creates various opportunities to analyse, arrange and present data from all European countries together. Analyses at pan-European level are especially important for migratory and wide-ranging species, as for them isolated conservation efforts in some countries may not yield the desired results. In that sense, the contribution of non-EU Contracting Parties is particularly important for features for which significant proportions of their global resources occur outside the EU.

Moreover, the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) has fully streamlined its reporting procedures with those under Article 12, thereby avoiding Member States having to report twice.

Source: Roekaerts et al., 2020.

Moreover, reporting data were used and published in the latest IPBES ⁽²⁾ *Assessment report on biodiversity and ecosystem services for Europe and Central Asia*.

The State of nature in the EU report is accompanied by a methodological technical report, which describes the data and analyses in more detail; this is available as an ETC/BD report (Röschel et al., 2020). Further analyses, information and data are available from the following sources:

- State of nature in the EU online ⁽³⁾
- Biodiversity Information System for Europe ⁽⁴⁾
- webtools for Article 12 ⁽⁵⁾ and Article 17 ⁽⁶⁾.



DASHBOARD
with detailed information by Member State:
Article 12 data quality



DASHBOARD
with detailed information by Member State:
Article 17 data quality

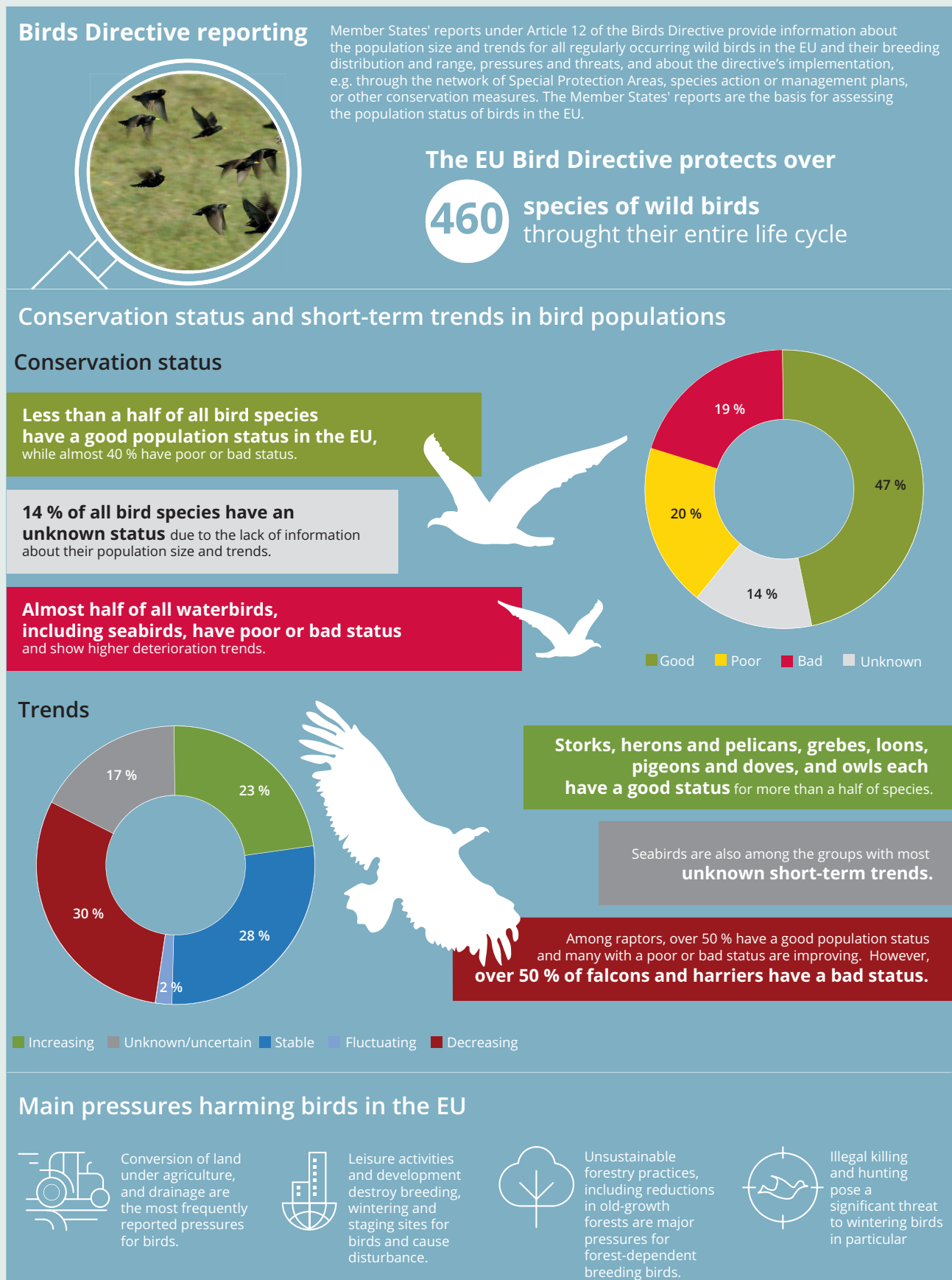
⁽²⁾ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
⁽³⁾ <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu>
⁽⁴⁾ <https://biodiversity.europa.eu>
⁽⁵⁾ <https://nature-art12.eionet.europa.eu/article12>
⁽⁶⁾ <https://nature-art17.eionet.europa.eu/article17>



Photo: © Josef Timar, REDISCOVER Nature/EEA



Figure 2.1 Summary of the Birds Directive reporting



2 Status of and trends in bird populations

The Birds Directive protects all wild bird species ⁽⁷⁾ that are naturally present in the European territory of the EU Member States, including over 460 species. It aims to protect those species from habitat destruction and pollution, deliberate killing and capture, significant disturbances, their sale and the destruction or taking of their eggs or nests. Common species are included, as well as rarer, threatened, near-threatened and other species requiring particular attention because of the specific nature of their habitat. Protection measures aim to cover the entire species lifecycle, including breeding, wintering and migration, and the areas where they occur.

Annexes I and II of the Birds Directive are important in terms of decision-making and policy, in particular when it comes to classifying protected areas or regulating the hunting of species in each Member State. The annexes contain a mix of taxonomic levels, depending on which of these was deemed appropriate to be included in each annex. Annex I of the Birds Directive lists 197 threatened taxa. Member States must establish targeted conservation measures, such as avoiding any significant disturbance, and designate Special Protection Areas (SPAs) for their survival. This also includes migratory bird species not covered by Annex I but that constitute a common heritage and require a broader international perspective to ensure their effective protection and conservation.

Annex II lists 86 taxa ⁽⁸⁾ that are permitted to be hunted, either in the entirety of their range within the EU or just in particular Member States. The Birds Directive protects these species from being hunted during their return migration to their breeding grounds and during their breeding season. Some overlaps exist between the annexes. For example, a species may have a subspecies that is considered to need the protection afforded by Annex I, although it can be hunted at the species level (and is hence also listed

in Annex II). Within the current report, all analyses relating to either Annex I or Annex II are based on the actual taxa found in the lists, and therefore they include both species and subspecies. Member States' reporting obligations under Article 12 of the Birds Directive serve to gather data on parameters such as the size of and trends in all regularly occurring wild bird populations, their breeding distribution and general information on the directive's implementation (e.g. main achievements, SPA classification, species action or management plans, and details on relevant introduced non-native bird species).

National Member State data are used to analyse population sizes and trends and to assess the population status of bird taxa at EU level. The exercise is based on a standardised methodology (Röschel et al., 2020). A total of 511 assessments were undertaken in this reporting period (see Box 2.1). Article 12 reporting also considers the seasonality in bird biology and distribution by distinguishing between breeding, wintering and passage (migratory) seasons. These are some of the main differences from the reporting under Article 17 of the Habitats Directive, where the conservation status and trends of (only a subset of) non-bird species and habitats is reported by the Member States themselves, and then assessed at biogeographical level within the country's territory, as a basis for the assessments conducted at EU biogeographical level (see Chapter 3).

This chapter thus provides the main results emerging from Member States reports and the EU-level assessments ⁽⁹⁾, representing the period from 2013 to 2018. In addition to highlighting the conservation needs of different taxa, several illustrative case studies are provided of bird species having shown improvements or deterioration in their population status and/or trends compared with the previous reporting period (2008-2012).

⁽⁷⁾ In the context of this chapter, the word 'species' is used in the strict sense of bird populations considered at taxonomical species level only. Conversely the word 'taxa' (which is usually used as a general term to talk about a taxonomic group of any level) refers in this chapter (unless stated otherwise) to the selection of species, as well as subspecies and biogeographic populations, and their counterparts, that were assessed for this report.

⁽⁸⁾ These include four non-native/feral species.

⁽⁹⁾ Performed by BirdLife International in the context of the European Red List of Birds under a contract from the European Commission.

Box 2.1 EU assessments of the status of bird populations — what is included in this report

Based on the Article 12 Member States' reports, the EU population size and trend calculations and EU population status assessments of 511 taxa (all taxonomic levels included) were undertaken. These include:

- 463 species regularly occurring in the EU and breeding and/or wintering (with only one exception — *Phasianus colchicus* — whose long-standing introduced population was also assessed);
- 41 selected subspecies and their counterparts (including one subspecies that became extinct before the 2008-2012 reporting period, *Perdix perdix italiae*); please note that two other globally extinct taxa — *Pinguinus impennis* and *Haematopus meadewaldoi* — are not covered in this report, as Member States were not asked to report against these for the period 2013-2018;
- two biogeographical populations of *Anser brachyrhynchus*;
- three introduced or feral species (*Meleagris gallopavo*, *Branta canadensis* and feral populations of *Columba livia*), although Member States reported on a greater number of non-native species;
- two species that are native to the EU, but for which the data reported are too incomplete for an overall evaluation (*Alle alle* and *Larus ichthyaetus*);

It should be noted that there are more wintering and breeding taxa than reported by the Member States. Moreover, since the last publication of the *State of nature in the EU* report in 2015, 13 new species were split from other taxa and five previously split species were lumped into two species. Such taxonomical changes are considered in the analysis.

Most birds have seasonal behaviours, i.e. have a breeding, wintering and passage (migratory) season. Member States were requested to report on all regularly occurring breeding taxa and on a subset of wintering and passage taxa. EU-level population trends were calculated for 465 and 467 breeding taxa in the short and long term, respectively (two taxa became extinct in the EU before the current short-term trend period, thus only long-term trends were calculated for them), and for 91 wintering taxa in the short and long term. Passage data were used only as supporting information. The total number of taxa for which trends were calculated does not equal the total number of EU population status assessments produced, as the latter is only based on either the breeding or the wintering season, i.e. one unique value per taxa (for more information, see Röschel et al., 2020).

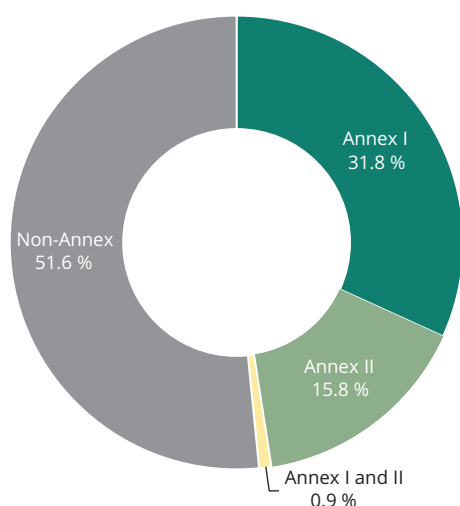
The majority of the national breeding data come from well-established monitoring schemes conducted every year during the breeding season, when birds are holding territories and are usually most active and easy to detect (e.g. Pan-European Common Bird Monitoring Scheme ^(a)). It should be underlined, however, that many less common or rare species are still not well monitored and the lack of reliable information makes the assessment of their status very difficult (see also Chapter 1).

The information about wintering bird populations usually comes from coordinated monitoring efforts conducted during the wintering season. Most birds are not holding territories during this season and are usually much harder to record. Exceptions to this difficulty are waterbirds, most of which gather in large flocks on water bodies and for which rigorous monitoring procedures are in place to avoid double counting (e.g. International Waterbird Census ^(b)). As monitoring schemes for other groups of wintering birds are rare, Member States report on a subset of wintering taxa, called key wintering species, most of which are waterbirds.

Migration is an equally fascinating and difficult phenomenon to study. Many bird species spend weeks or months flying between their wintering and breeding grounds. Passage data are useful to collect to complement both breeding and wintering analyses, when looking in more detail at the results and the possible reasons behind them, but can hardly be part of any analyses in themselves, as passage data are highly variable and sporadically monitored and reported across the EU. For this reason, no assessments were undertaken based on passage data for this report.

Notes: (a) <https://pecbms.info>
(b) <https://europe.wetlands.org/news/international-waterbird-census-2020>

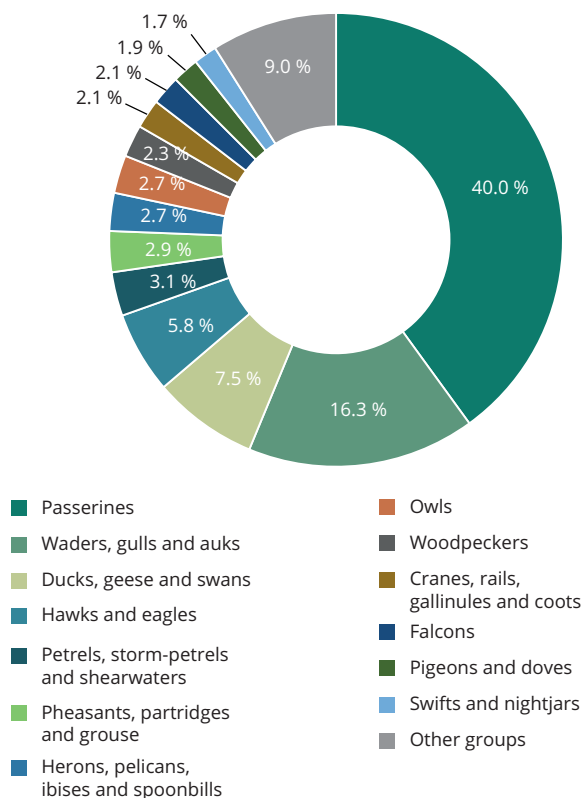
Figure 2.2 Share of Member States reports of Annex I, Annex II and non-Annex species



Note: Total number of reports: 8 008.

Source: Article 12 Member States' reports and assessments.

Figure 2.3 Share of taxonomic groups covered by Article 12



Note: Total number of species: 463.

Source: Article 12 Member States' reports and assessments.

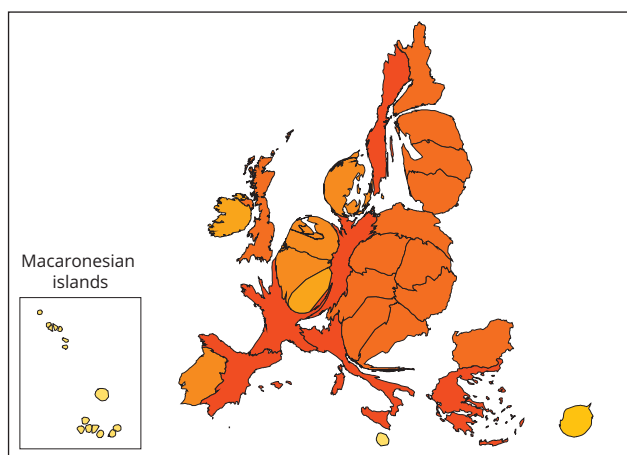
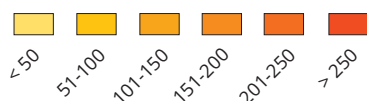
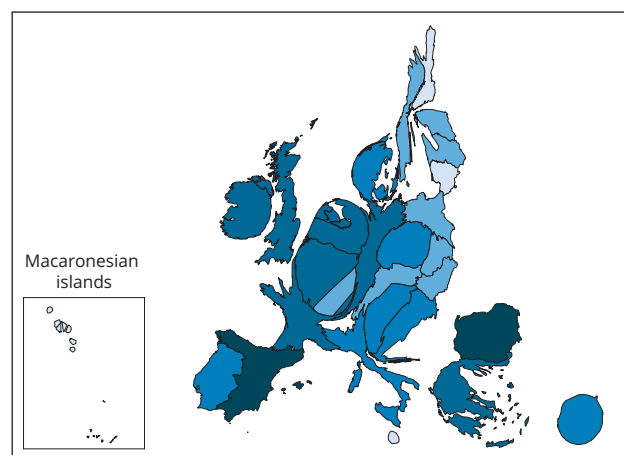
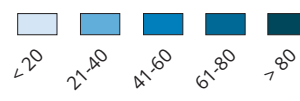
2.1 Facts and figures

Member States report on regularly occurring breeding and wintering species and on some migrating birds (Figure 2.2). There are, however, many more species present in the EU, including marginal and vagrant species. The Birds Directive covers a wide range of taxonomic groups, the largest of which is passerines, followed by the waders, gulls and auks group. Together, these groups represent over half of the species reported under Article 12 (Figure 2.3).

It is important to highlight that 30 species (not including subspecies) present in the EU do not exist elsewhere i.e. they are endemic to the EU. Other 'near-endemic' species can be found outside the EU, but the vast majority of their populations reside within the EU. There are 24 near-endemic species in the EU, totalling more than 50 species for which breeding and/or wintering populations occur entirely or almost entirely in the EU. Thus, the EU has a unique responsibility to protect such species, because, if they disappear from the EU, their risk of becoming globally extinct becomes very high. This responsibility is transferred to the Member States within which endemic and near-endemic species are present. Countries such as Spain⁽¹⁰⁾ have a comparatively high proportion of endemic species within their territories as well as large proportions of many EU species' populations.

Maps 2.1 and 2.2 show the number of taxa reported by Member States for the breeding and winter season, respectively. The size of the country shows species numbers in relation to the country's size, e.g. large countries with relatively small numbers of species look smaller than they actually are, while small countries with large numbers of species look bigger. The colour coding shows the 'absolute' numbers of taxa reported by each Member State. The number of taxa is correlated not only with the size of a country but also with other environmental parameters such as habitat type, availability, climate. In addition, the varying amount of effort put into the survey in each Member State, combined with the difficulty of detecting certain taxa and the variable climatic conditions, particularly in the wintering season, can potentially skew these numbers.

⁽¹⁰⁾ For more information, see <http://datazone.birdlife.org/species/search>.

Map 2.1 Number of reported breeding taxa per country**Number of reported breeding taxa per country****Map 2.2** Number of reported winter taxa per country**Number of reported wintering taxa per country**

Note: These maps are cartograms, which distort the geometry of regions to convey specific information by resizing. Here, the size of the country shows the number of reported species in relation to the country's size. The maps do not show all species appearing in a country. Thus, the maps show the result of reporting rather than the species diversity of a country. The boxes at the top right refer to the Macaronesian islands (Azores, Madeira and Canary islands). Romania did not report and is therefore not included in the maps.

Source: Article 12 Member States' reports and assessments.

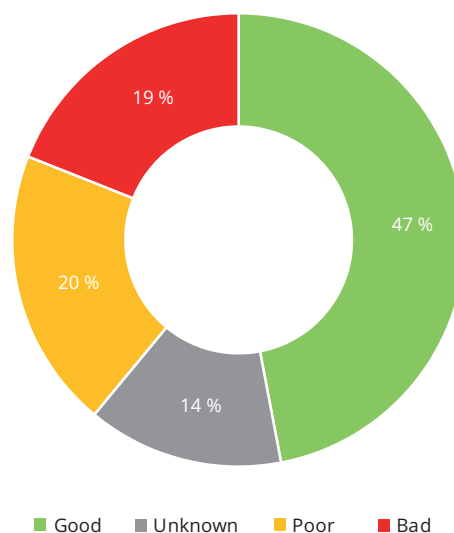
2.2 Population status and trends

This section presents the results for the status of and trends in bird populations at EU level and the breeding and wintering population trends at Member State level. As indicated in Table 1.1, overall categories such as 'good', 'poor', 'bad' and 'unknown' have been used in this report to ensure consistent communication on conservation and population status in the EU across the Habitats and Birds Directives. The results are compared with those from the previous reporting period (2008-2012).

2.2.1 Overall status of bird populations at EU level

Population status was assessed for a total of 463 bird species (see Box 2.1). As shown in Figure 2.4, 47 % of bird species assessed have a good population status in the EU. This is 5 % less than in the period 2008-2012.

Conversely, the proportion of species with poor and bad status has increased by 7 % in the last 6 years and reached a total of 39 %. The population status of 14 % of the bird species in the EU is still unknown because of a lack of reliable data regarding their population sizes and trends.

Figure 2.4 EU population status of bird species

Note: The total number of species-level assessments is 463 (only one assessment per species is undertaken, regardless of the number of seasons it has been reported in). Categories: good (secure); poor (near threatened, declining, depleted); bad (threatened).

Source: Article 12 Member States' reports and EU assessments.

2.2.2 Trends in populations of breeding birds

Population trends for bird taxa were reported by Member States for a short-term period of 12 years (2007-2018) and a long-term period of 38 years (1980-2018). As bird monitoring schemes were introduced in many Member States much later than 1980, the long-term trend period reported is often shorter, while the short-term trend data are usually more complete and generally of higher quality because of more accurate monitoring methods.

In total, 465 short-term and 467 long-term breeding population trends were produced for birds at the EU level (see Box 2.1). The results shown in Figures 2.5 and 2.6, compared with the previous reporting period (2008-2012), indicate that:

- The number of taxa with an increasing population is 5 % lower (meaning that less than one quarter of all taxa assessed now have increasing short-term trends).
- The number of taxa with stable or fluctuating trends is 7 % higher.
- Almost one third of all taxa assessed have a decreasing short-term trend.
- In the long term, there is only a slight dominance of decreasing over increasing trends. The opposite was true in the period 2008-2012, meaning that, although the current numbers are quite similar to those of the previous reporting round, the overall picture is slightly more negative.
- One in five taxa has an unknown or uncertain short-term or long-term population trend. Nevertheless, in the case of the long-term trends, this means 10 % less unknown trends.

A closer look at species level suggests that, in the majority of cases, the changes listed above (whether positive or negative) are genuine, which means that they are not related to better knowledge or to a change in the methods of bird monitoring or calculating trends.

At Member State level, Article 12 reports indicate a large variation in breeding bird populations (see Figure 2.7):

- Apart from Croatia, all Member States reported more than one third of breeding populations as increasing or being stable.

- Almost half of all Member States reported decreasing short-term trends for a third of breeding populations. Examples include the Corncrake (*Crex crex*) and Grey Partridge (*Perdix perdix*) (see also Table 2.1).
- The degree of unknown population trends varies greatly among the Member States. The degree of unknown population trends is related to whether bird monitoring systems are in place and how effective and informative they are.

2.2.3 Trends in populations of wintering birds

In total, 91 short-term and long-term wintering population trends were produced for birds at the EU level (see Box 2.1).

The results of the analysis of short- and long-term wintering population trends at EU level (shown in Figures 2.8 and 2.9), compared with the previous reporting period (2008-2012), indicate that:

- The percentage of increasing and decreasing short-term trends is similar (46 % and 27 %, respectively).
- The percentage of taxa with stable trends has increased and that of taxa with fluctuating trends has decreased, which is mainly due to the introduction of a more precise definition for these two trends.
- The proportion of taxa with increasing long-term trends has dropped by 9 %, while that of those with decreasing trends has barely changed.
- Cases in which the short- or long-term trend is unknown or uncertain have increased by 4 % and 2 %, respectively. Although there appears to be a lower percentage of unknown trends for wintering birds than for breeding birds, it must be noted that Member States report on only a subset of wintering birds, the selection of which is heavily reliant on the monitoring data available for these taxa. Therefore, it is more likely that the wintering birds reported on will have known trends, as their initial selection for reporting will be biased towards these species.

At the Member State level, two thirds of all Member states reported more than 30 % of wintering populations as increasing or stable, while approximately half of the Member States indicate them as decreasing at a rate of above 15 %. Austria

and Finland have the highest trend in reported increasing wintering populations in the short term (Figure 2.10). Examples include the Great White

Egret (*Ardea alba*), Whooper Swan (*Cygnus cygnus*) and White-tailed Eagle (*Haliaeetus albicilla*) (see Table 2.1). However, short- and long-term trends were reported

Figure 2.5 Short-term breeding population trends at EU level

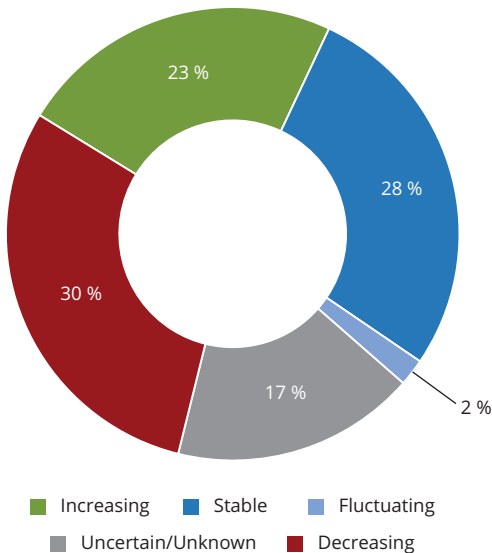
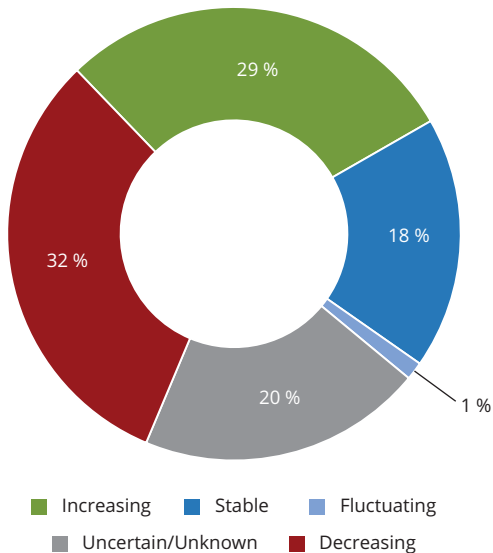


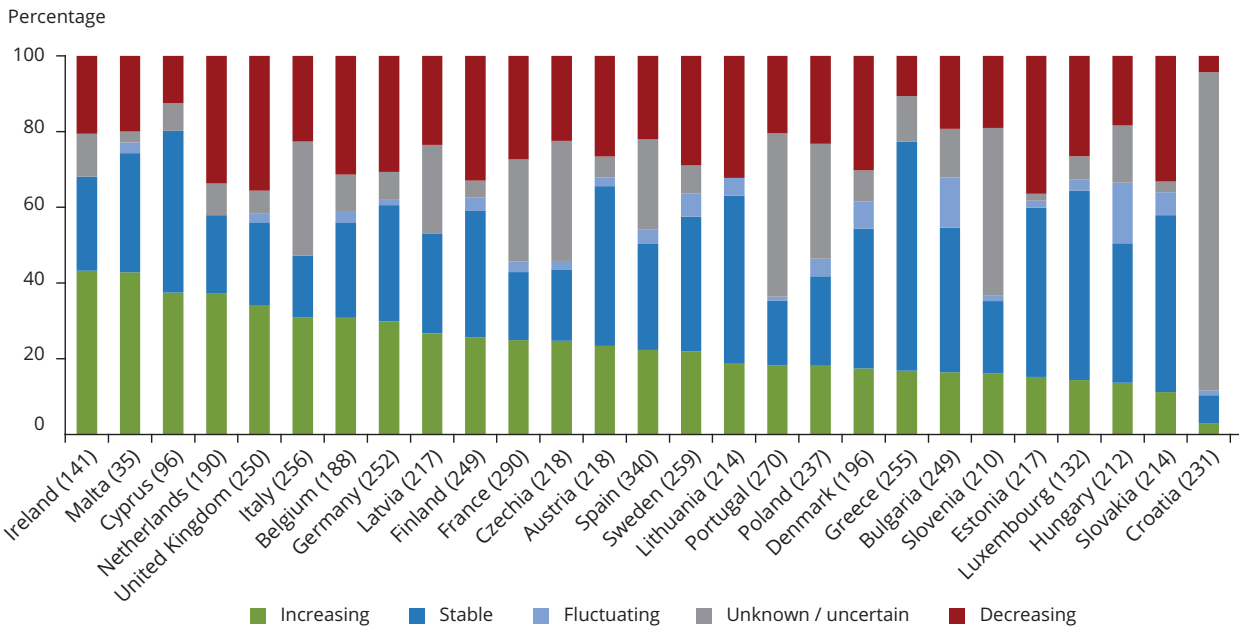
Figure 2.6 Long-term breeding population trends at EU level



Note: Statistics based on 465 short-term and 467 long-term EU breeding population trends. Includes trends for a limited number of subspecies and biogeographical populations.

Source: Article 12 Member States' reports and EU assessments.

Figure 2.7 Short-term trends in breeding bird populations by Member State



Note: The number of reports is indicated in parentheses. The total number of reports is 5 827. There are more breeding taxa than reported by the Member States.

Source: Article 12 Member States' reports and EU assessments.

as unknown for many wintering birds across Member States. Croatia, Latvia, Portugal and Belgium reported over 50 % of reported wintering

bird populations as being unknown for short-term trends, while seven other Member States reported over 50 % as being unknown for long-term trends.

Figure 2.8 Short-term wintering population trends at EU level

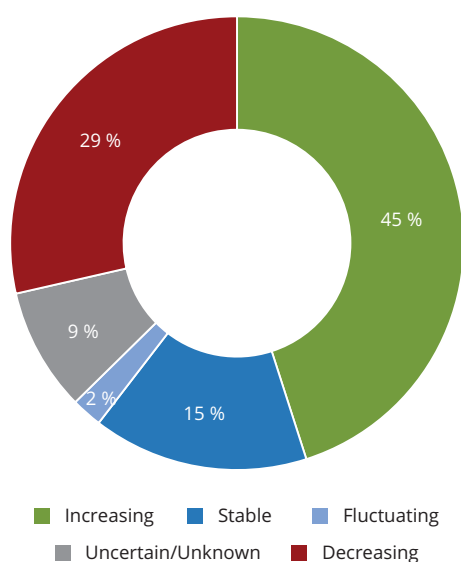
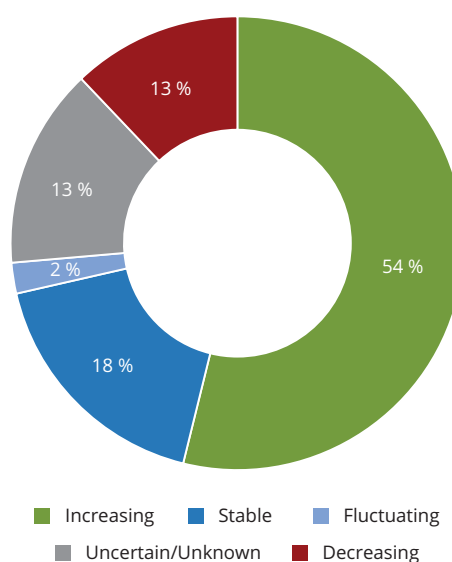


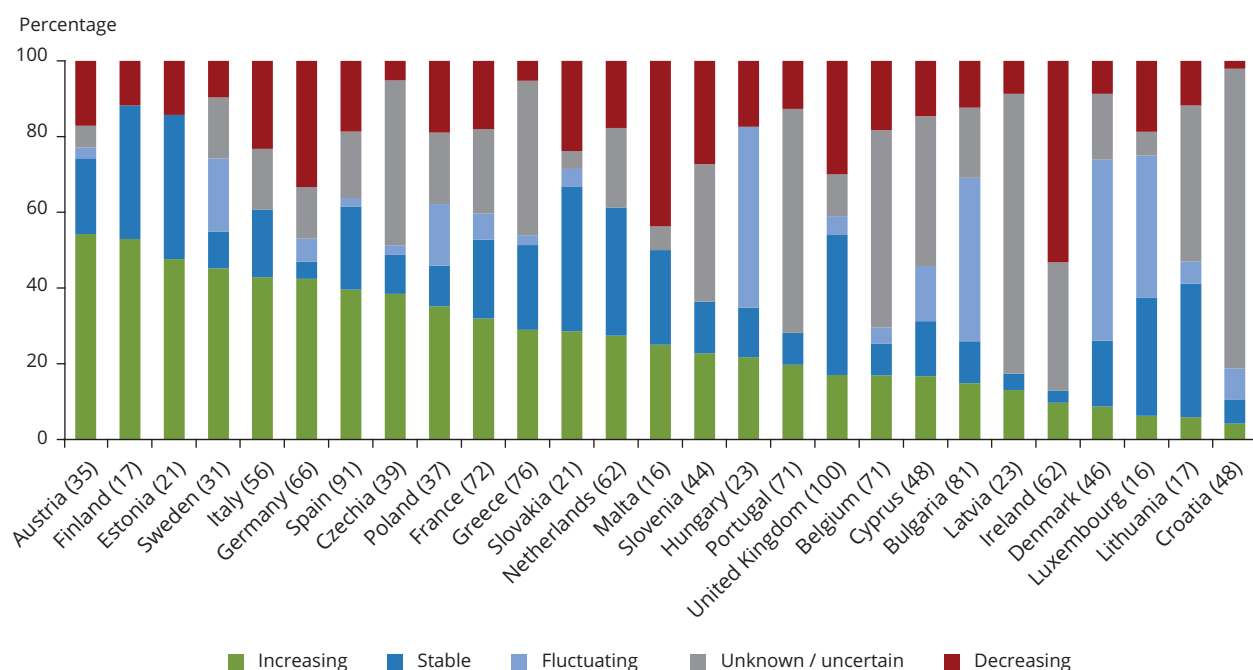
Figure 2.9 Long-term wintering population trends at EU level



Note: Statistics based on 91 EU wintering population trends. Includes trends for a limited number of subspecies and biogeographical populations.

Source: Article 12 Member States' reports and EU assessments.

Figure 2.10 Short-term trends in wintering bird populations by Member State



Note: The number of reports is indicated in parentheses. The total number of reports is 1 284. There are more wintering taxa than reported by the Member States.

Source: Article 12 Member States' reports and assessments.

2.2.4 Status of and trends in breeding bird populations by taxonomic group at EU level

A taxonomic group is a selection of taxa grouped together on the basis of their taxonomy. Usually taxa are grouped together at a higher taxonomic level (e.g. order, family). Figure 2.11 presents an overview of the EU population status of bird species grouped by taxonomic order, as orders are the taxonomic level that provide the most information.

Many taxonomic orders are represented in the EU by very few taxa, while some orders have a large number of taxa. It is therefore difficult to draw conclusions on the status of and trends in the breeding population of birds within very large or very small taxonomic orders.

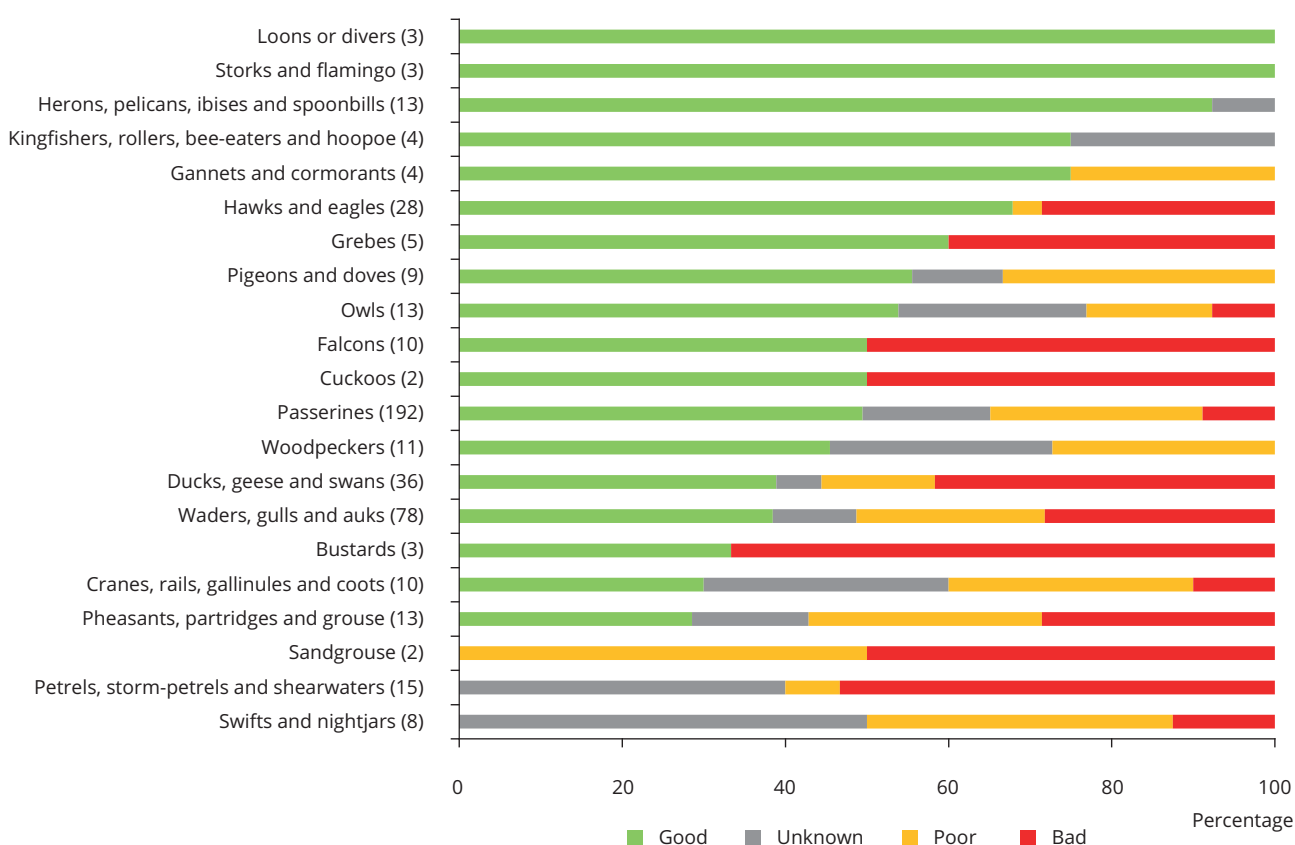
For taxa in different orders, the following observations were made:

- Over half of the taxonomic orders presented have a good status for at least 50 % of the species assessed.
- Almost half of the orders presented have a bad status for at least 25 % of the species assessed.

Included in these are the orders containing high numbers of species, such as petrels, storm-petrels and shearwaters (see example in Box 4.1), ducks, geese and swans, as well as those containing waders, gulls and auks, the pheasants, partridges and grouse, the bustard, and the falcons (see Box 2.2)

- The taxonomic orders with a higher number of taxa with bad status also show a greater proportion of decreasing trends relative to the last reporting round. This applies to both short- and long-term trends (trends are not shown in Figure 2.11).
- The long-term trends in passerine breeding populations, the largest group of birds, have a large number of uncertain and unknown trends. This group alone accounts for almost half (45 %) of all uncertain and unknown long-term trends and almost half (47 %) of all unknown population statuses.
- Swifts and nightjars, as well as petrels, storm-petrels and shearwaters, also have a high proportion of uncertain and unknown short- and long-term trends within their respective groups. This could be explained by the overall difficulty in monitoring these particular groups of species.

Figure 2.11 Population status of EU bird species and subspecies, by taxonomic order



Note: The total number of all species is 463. The number of taxa concerned is shown in parentheses.

Source: Article 12 Member States' reports and EU assessments.

Box 2.2 Closer look: Birds of prey

Hen Harrier (*Circus cyaneus*) © Peter Harris, IUCN Red List

'Birds of prey' encompasses a diverse group of birds, such as vultures, eagles, kites, harriers, buzzards, honey buzzards, hawks and falcons. Many species within this group have been the target of conservation measures during the last two decades, particularly through the LIFE programme. While this has led to certain levels of recovery or stabilisation of some populations (e.g. vultures, some falcons and eagles), other groups, such as falcons and harriers, still face many outstanding threats.

Falcons and harriers: deteriorating populations

The most common threats to and pressures on falcons and harriers reported by Member States are land use change (various forms of agriculture) and different land use practices, electricity infrastructure, disturbance, use

of chemicals and illegal killing. Out of 10 **falcon species** covered by Member States' reporting, four are showing evidence of genuine deterioration in both their status and their trend (*Falco biarmicus*, *F. columbarius*, *F. cherrug*, *F. rusticolus*). Five of the remaining species have not had a change in status, but their trends indicate a worrying outlook for the future: two have decreasing short- and long-term trends (which means that they may have a deteriorating status in the near future) and another two have been recovering but are currently stable (which indicates that the positive improvements have ceased). Interestingly, *F. eleonora* was assessed for first time, and Spain is the only country reporting increases and happens to be where the entire species population is within the Natura 2000 network. Finally, *F. peregrinus* is the only species with an overall increasing long- and short-term trend. **Harriers** are in a similar situation, with two of four species having genuinely decreased (i.e. *Circus cyaneus* and *C. pygargus*).

Vultures: improving and stabilising populations

Unlike falcons and harriers, vulture populations are improving and stabilising thanks to species action plans, LIFE projects and targeted large-scale conservation efforts. Three of four species reported on by Member States (*Aegypius monachus*, *Gyps fulvus* and *Gypaetus barbatus*) have increasing short- and long-term trends and one is stable (*Neophron percnopterus*). Despite these positive improvements, two of these species are still threatened because of steep historical declines. All of these four species are still in a relatively fragile situation, as they will depend on conservation measures until the ongoing pressures they still face, such as electricity infrastructure, illegal killing and harvesting and the poisoning of animals on which they feed, are addressed and managed.

Need for improvement and restoration of habitats

Further measures are needed to curb deteriorating population trends, improve the conservation statuses of birds of prey and ensure that their populations will stabilise or continue to improve in the future. Member States report that improving and restoring habitats as well as appropriate land use practices are the main conservation measures needed for these species. There are examples of beneficial agri-environmental practices that have been developed in projects such as the 'Locally led scheme for the conservation of the hen harrier in Ireland' ^(a), funded under the EIP-Agri (European Innovation Partnership 'Agricultural productivity and sustainability') scheme. In Groningen, the Netherlands, the introduction of set-aside land in the late 1980s and the implementation of dedicated agri-environment schemes in the 1990s (including field margins of between 9 m and 12 m as feeding areas) have been fundamental to the harriers' success. The Montagu's harrier population in Groningen now exceeds 60 breeding pairs (BirdLife International, 2011).

Note: ^(a) <https://ec.europa.eu/eip/agriculture/en/find-connect/projects/locally-led-scheme-conservation-hen-harrier>

2.2.5 Status of and trends in populations of birds listed in Annexes I and II of the Birds Directive at EU level

Figure 2.12 provides an overview of the population status of bird species listed in Annex I (species for which SPAs must be designated) and Annex II (huntable species) of the Birds Directive and also of species not listed in the annexes. The results, compared with those for the previous reporting period (2008-2012), indicate that:

- The proportion of taxa with good status listed in Annex I has decreased by 8 %, while those with poor and bad status have increased by 6 %. A closer look at these changes reveals that several species have undergone a genuine deterioration in their status despite the special conservation measures provided by Annex I of the Birds Directive.
- 16 % of Annex I taxa still have an unknown status. This is worrying, as a species should be well monitored and its status known so that it can be effectively protected. However, for some Member States, this could also be due to a mismatch between the timings of reporting under the Birds and Habitats Directives and the cycles of national monitoring schemes.
- The situation is similar with Annex II, in that the proportion of taxa with a good status is 9 % lower

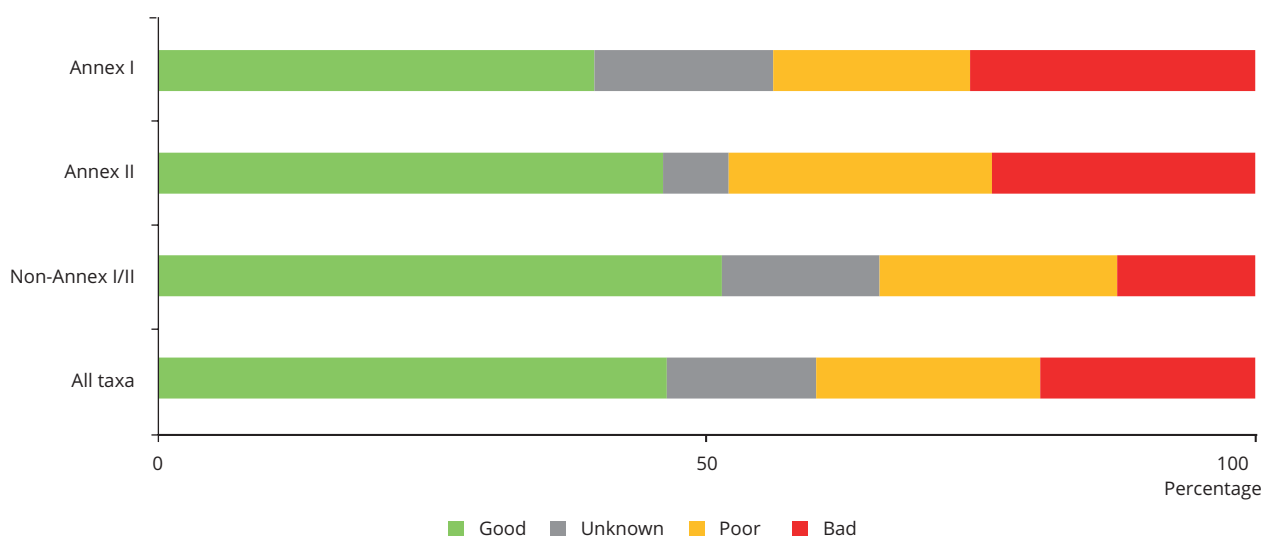
and that of poor and bad taxa is 9 % higher. This also means that almost half of all species listed under Annex II now have a poor or bad status.

- When comparing species listed in the Birds Directive annexes and those not covered by special conservation measures, the results show that Annex I has a much higher proportion of taxa with unknown status (16 %). This can be partly explained by the fact that Annex I species are often rare and difficult to monitor. Nevertheless, as the relative share of unknown status has increased compared with the previous reporting period, it can be concluded that there has been a genuine increase in the knowledge gap for Annex I taxa and that greater effort should be put into studying and monitoring them to inform appropriate decision-making.

Annex II has a relatively small proportion of taxa with unknown status. This can be explained by the fact that huntable species are often common and generally better monitored and because many countries collect data on hunting bags. Standardised and regular monitoring should nevertheless be established across all Member States for Annex II species.

Table 2.1 below presents examples of breeding and wintering birds with an increasing or decreasing short-term trend in different EU Member States and their long-term trend at EU level.

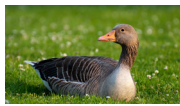
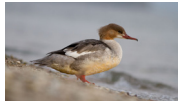
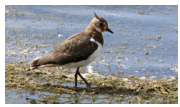
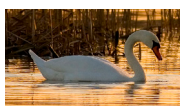
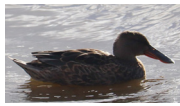
Figure 2.12 EU population status of bird taxa in Annexes I and II of the Birds Directive, birds not in Annexes I or II, and all birds grouped by Annex I and II, non-annex and all taxa

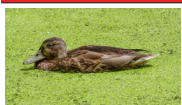
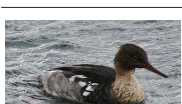


Note: The total number of assessments is 505.

Source: Article 12 Member States' reports and EU assessments.

Table 2.1 Bird groups with increasing or decreasing short-term trends in EU Member States (MSs) and their long-term EU trend

Species	Group	Directive status	List of MS with an increasing or decreasing short-term trend	Long-term trend at EU level
Breeding bird populations showing increasing short-term trends in almost 50 % of all MSs				
 Gadwall (<i>Mareca strepera</i>) © Andreas Trepte	Waterfowl	Annex II, part A	BE, CZ, DE, EE, ES, FI, IE, IT, LT, LV, NL, PL, PT, SE, SK, UK	↗
 Greylag Goose (<i>Anser anser</i>) © Public domain	Waterfowl, Marine	Annex II, part A	AT, BE, CZ, DE, DK, FR, HU, IT, LT, LV, NL, PL, SI, SK, UK	↗
 Goosander (<i>Mergus merganser</i>) © Philippe Moret	Waterfowl, Marine	Annex II, part B	AT, BG, CZ, DE, DK, FI, FR, HR, HU, IT, LT, SI, SK, UK	→
 Eurasian Nuthatch (<i>Sitta europaea</i>) © Chme82	Forest		CZ, DE, DK, ES, FI, IT, NL, PL, PT, SE, SI, SK, UK	↗
Breeding bird populations showing decreasing short-term trends in almost 50 % of all MSs				
 Northern Lapwing (<i>Vanellus vanellus</i>) © Charles J Sharp	Farmland, Waterfowl, Marine	Annex II, part B	BE, DE, DK, HU, IE, LT, LU, NL, PL, SE, SI, SK, UK	↘
 Grey Partridge (<i>Perdix perdix</i> , except subspecies <i>hispaniensis</i> and <i>italica</i>) © Roger Culos	Farmland	Annex II, part A	AT, BE, DE, EE, FR, HU, IT, LU, NL, PL, SI, SK, UK	↘
 Red-backed Shrike (<i>Lanius collurio</i>) © Charles J Sharp	Farmland	Annex I	BG, CZ, EE, ES, FI, FR, GR, IT, LT, LU, LV, SI, SK	?
 Corncrake (<i>Crex crex</i>) © Ron Knight	Waterfowl	Annex I	BE, BG, DE, EE, FR, HR, IT, LT, LU, LV, NL, PL, SK	→
Wintering bird populations showing increasing short-term trends in 10 or more MSs				
 Great White Egret (<i>Ardea alba</i>) © JJ Harrison	Waterfowl, Marine	Annex I	BE, BG, CZ, DE, ES, FR, GR, LU, NL, PL, PT, SK	↗
 Whooper Swan (<i>Cygnus cygnus</i>) © Thermos	Waterfowl, Marine	Annex I	BG, DE, DK, FI, FR, GR, IE, PL, SE, UK	↗
 White-tailed Eagle (<i>Haliaeetus albicilla</i>) © Yathin S Krishnappa	Marine	Annex I	AT, CZ, FI, FR, HU, LT, NL, PL, SE, SK	↗
 Northern Shoveler (<i>Spatula clypeata</i>) © Rudolphous	Waterfowl, Marine	Annex II, part A	AT, BE, CY, DE, ES, FR, NL, PT, SI, UK	↘

Wintering bird populations showing decreasing short-term trends in 10 or more MSs					
	Mallard (<i>Anas platyrhynchos</i>) © H. Zell	Waterfowl, Marine	Annex II, part A	AT, BE, CZ, DE, FR, IE, IT, MT, NL, PT, SI, UK	→
	Common Coot (<i>Fulica atra</i>) © Philippe Amelant	Waterfowl, Marine	Annex II, part A	CY, DE, DK, FI, HU, IE, IT, SI, SK, UK	↘
	Common Goldeneye (<i>Bucephala clangula</i>) © Maga-chan	Waterfowl, Marine	Annex II, part B	AT, BE, DE, FR, IE, IT, LU, NL, SK, UK	→
	Red-breasted Merganser (<i>Mergus serrator</i>) © Andreas Trepte	Waterfowl, Marine	Annex II, part B	BE, BG, CY, ES, FR, IE, MT, SE, SI, UK,	→

Notes: Waterfowl: African-Eurasian Waterbird Agreement; Marine: Marine Strategy Framework Directive; Forest: Common Forest Bird Indicator; Farmland: Common Farmland Bird Indicator.

↗ Increasing ↘ Decreasing → Stable ? Unknown

Key messages

- Population status was assessed for a total of 463 bird species: 47 % have a good population status and 39 % have a poor or bad status.
- 23 % of breeding birds have increasing short-term trends and 30 % have decreasing short-term trends; there are more decreasing than increasing long-term trends.
- Short-term trends for wintering birds are consistent with the results for the years 2008-2012, but the proportion of taxa with increasing long-term trends has dropped by 9 %.
- The proportion of taxa listed in Annex I with good status has decreased by 8 % since the last reporting period, while taxa with poor and bad status have increased by 6 %.
- The proportion of Annex II species with a good status is 9 % lower than in the 2008-2012 reporting period, while taxa with poor and bad status are 9 % higher.
- A good status for at least 50 % of the assessed species is reported for half of the taxonomic orders, but a high proportion of the remaining taxa within these orders are still assessed as 'bad'.
- The high percentage of unknown data suggests a need to establish or re-enforce appropriate coordinated and state-supported monitoring schemes within and between all Member States.



DASHBOARD
with detailed information by Member State:
breeding birds



DASHBOARD
with detailed information by Member State:
wintering birds

2.3 Population status of species with species action plans

To achieve the conditions set out in Annex I of the Birds Directive, species action plans (SAPs) are sometimes used at national or international level to help organise and maximise the effectiveness of conservation efforts within a country or across several countries. SAPs are, however, not just developed for Annex I species. Annex II species may also have management plans to help guide the balanced, sustainable and ecologically sound hunting of a species.

In total, 75 bird species and subspecies have an international SAP. These plans were either produced by the EU itself or were produced under international agreements (such as the Agreement on the Conservation of African-Eurasian Migratory Waterbirds or the Bonn Convention for Migratory Species) and endorsed by the EU. Of all bird species with a SAP, 63 are listed in Annex I, and 11 are listed in Annex II (two are listed in both annexes). Figure 2.13 provides an overview of the EU population status of species with and without SAPs.

For taxa with a SAP, the following observations can be made:

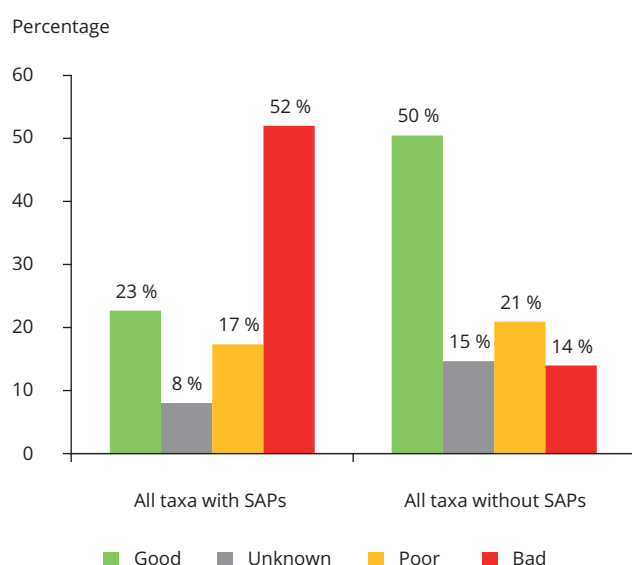
- A higher proportion of taxa with a SAP have a bad status (52 %) than those without a SAP (14 %). This is not surprising, as SAPs target species that were assessed as having a bad status (threatened) at the time of their development.
- Only 23 % of species with a SAP have a good status compared with 50 % of species without a SAP.

Box 2.3 provides two examples of birds for which a SAP has been developed but which have different statuses and trends.

In total, 13 bird taxa have an EU management plan. Management plans were produced for huntable species (Annex II) considered to have a bad status in the EU. Almost half of the taxa with management plans have a bad status, and almost another quarter have a poor status. This means that over two thirds of the taxa that have management plans are in a poor or bad status category (as shown in Figure 2.14).

Several management plans were prepared between 1997 and 2000, and all of the taxa with plans that have been assessed as threatened (a total of six) have decreasing short-term trends. This leads to the possible conclusion that the plans have not delivered the expected conservation results.

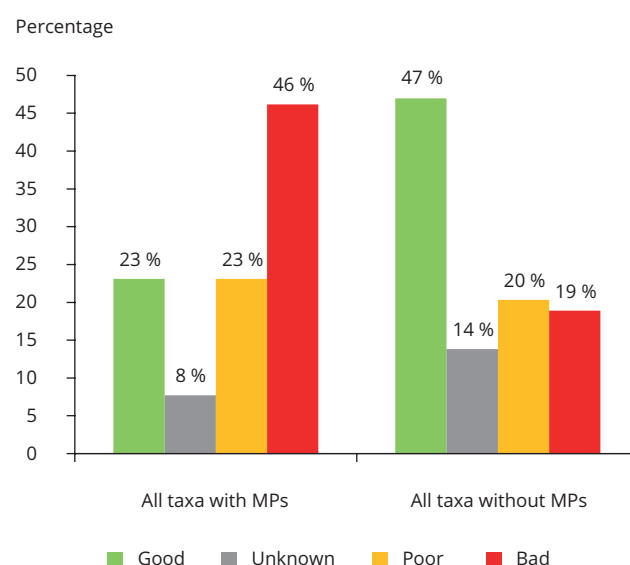
Figure 2.13 EU population status of taxa for which a SAP has been developed versus those taxa which do not have a SAP



Note: The total number of taxa with SAPs is 75 and of taxa without SAPs is 430.

Source: Article 12 Member States' reports and EU assessments.

Figure 2.14 Status of taxa with and without a management plan



Note: The total number of taxa with a management plan is 13 and without a plan is 498.

Source: Article 12 Member States' reports and EU assessments.

Box 2.3 Closer look: Birds with species action plans

Photo: Lesser White-fronted Goose © Vasily Sokolov, IUCN Red List

The **Lesser White-fronted Goose** (*Anser erythropus*) is a goose species breeding in the tundra zone from northern Fennoscandia to eastern Siberia. While migrating, the species prefers low-growing salt marshes/coastal meadows and natural steppes but, because of the transformation of its original staging and wintering habitats in the southern parts of the range, the main feeding habitat in many areas today is agricultural land. In 2008, an International Species Action Plan for the Conservation of the Lesser White-fronted Goose ^(*) was adopted. Moreover, LIFE projects such as Anser-Eur (LIFE05 NAT/FIN/000105) and Safeguard LWfG (LIFE10 NAT/ GR/000638) targeted the species with the objective of improving and monitoring the conservation status of the species at the most important breeding, staging and wintering sites along the European flyway. This

was to be quantified by halting or slowing down the negative trend in the population size at the monitoring sites, increased survival during the wintering period, an increase in the time that the geese spend in safe, managed project sites, and increased awareness of hunters, farmers and landowners of the species and its conservation. The projects have improved cooperation between five countries along the species' flyway (Estonia, Finland, Greece, Hungary and Norway), including the preparation of coordinated national species action plans (approved by the end of the project in Estonia, Finland and Norway) and a joint contribution to the new International Single Species Action Plan. This coordinated effort has led to a positive trend in the breeding populations in Finland.

The **waders of wet grassland habitats** include eight species that are covered by an international multi-species action plan (MSAP). Five of these species have a bad EU status: Baltic Dunlin, Eurasian Oystercatcher, Black-tailed Godwit, Common Redshank and Northern Lapwing. Three have a poor EU status: Ruff, Eurasian Curlew and Common Snipe. The European populations of all eight species have declined considerably in recent decades, and these declines are still ongoing, except for the Eurasian curlew whose short-term trend is now stable. In fact, between 60 % and 90 % of Member States have reported that the species are deteriorating despite the existence of the MSAP. Their status is largely linked to the quality and extent of sympathetically managed wet grassland habitats and the wider landscapes within which they are found. In the past, ideal conditions for these species were intrinsically created and maintained by more traditional farming practices. However, the policies and incentives of pillar 1 of the common agricultural policy have primarily focused on increasing agricultural production. In fact, the population declines of wet grassland breeding waders have been more pronounced within the EU than in non-Member States. While the MSAP (2018) partially targets the restoration of wet grasslands, it has not been in place for long enough to have an effect on these populations, as it takes time for the conservation measures to be implemented and yield positive results. Efforts thus need to be put in place to implement the conservation measures identified in the MSAP in the future.

Note: ^(*) <https://www.unep-aewa.org/en/publication/international-single-species-action-plan-conservation-lesser-white-fronted-geese-western>

Key messages

- 75 bird species and subspecies have an international species action plan (63 from Annex I and 11 from Annex II).
- Only 23 % of species with a species action plan have a good status compared with 50 % of species without an action plan.
- 13 bird taxa have an EU management plan; over two thirds of these have a poor or bad status.



DASHBOARD
with detailed information by Member State:
International SAPs

2.4 Improvement in trends

Within Article 12 reports, Member States provide information on the population size and breeding distribution of birds and their trends. In around 15 % of all Member States' reports, both short- and long-term population trends are increasing. Bird taxa identified in this chapter as having an improving population trend are based on Member States' Article 12 reports, which apply the same method used to identify taxa with non-secure improved status under the evaluation of progress towards target 1 of the EU Biodiversity Strategy to 2020 (see Chapter 6). Bird reports were thus selected which meet one of the following two criteria:

1. showed an increasing population trend in the last 12 years (2007-2018), regardless of the 38-year long-term trend (1980-2018); or
2. showed a stable or fluctuating short-term population trend in the last 12 years, after a decreasing long-term trend.

This group of species will be referred to as '**improving bird taxa**' in the following section. In total, there are 2 148 Member States' reports recording the

improving state of populations according to the criteria above; globally this corresponds to 397 bird taxa for which there is an improvement in at least one Member State and for at least one of the reported seasons. Under the first criterion fall 1 715 reports, or 367 taxa. The second criterion is met by 433 reports, or 214 taxa.

Overall, approximately 49 % of the reported improvements relate to Annex I and SPA trigger species (see Table 2.2).

The majority of all taxa that show improving trends are recorded for more than one Member State. Within the group of Annex I and SPA trigger species, the following species are the most frequently mentioned across Member States: White-tailed Eagle (*Haliaeetus albicilla*) ($n = 30$), Great White Egret (*Ardea alba*) ($n = 25$), Crane (*Grus grus*) ($n = 24$), Whooper Swan (*Cygnus Cygnus*) ($n = 23$) and Red Kite (*Milvus milvus*) ($n = 21$).

Figure 2.15 presents the number of Member States' reports showing improving trends for each species group. In addition, the proportion of each of the improvement categories is compared with the overall number of Member State reports in each

Table 2.2 Bird taxa reports showing improving trends

Improvements in the reporting	Reports of improving bird taxa	Reports of improving bird taxa listed as Annex I or SPA trigger species
Increasing → Increasing	1 213	685
Stable → Increasing	146	38
Fluctuating → Increasing	15	10
Decreasing → Increasing	123	50
Unknown → Increasing	15	9
Unknown → Increasing	196	65
No data → Increasing	7	5
Decreasing → Stable	379	147
Decreasing → Fluctuating	54	42
Total	2 148	1 051

Note: Population trend long (1980-2018) → Population trend short (2007-2018).

Source: Article 12 Member States' reports and EU assessments.

species group. These results reveal that the share of improving trends is very similar across species groups, averaging 26 %. However, uncertainties remain as many bird species are not categorised.

Around 44 % of all bird species with improving trends are covered by the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA ⁽¹⁾). Many of these species are also categorised as marine species according to the EU Marine Strategy Framework Directive (EU, 2008) and make up 33 % of all improvements. There are also some farmland and forest bird species that show improving trends, but these comprise only around 9 % of all improving trends. To interpret these percentages it has to be taken into account that approximately 60 % of the improving wetland bird species are also classified as marine birds. Overlaps also exist between some farmland/forest birds and wetland birds.

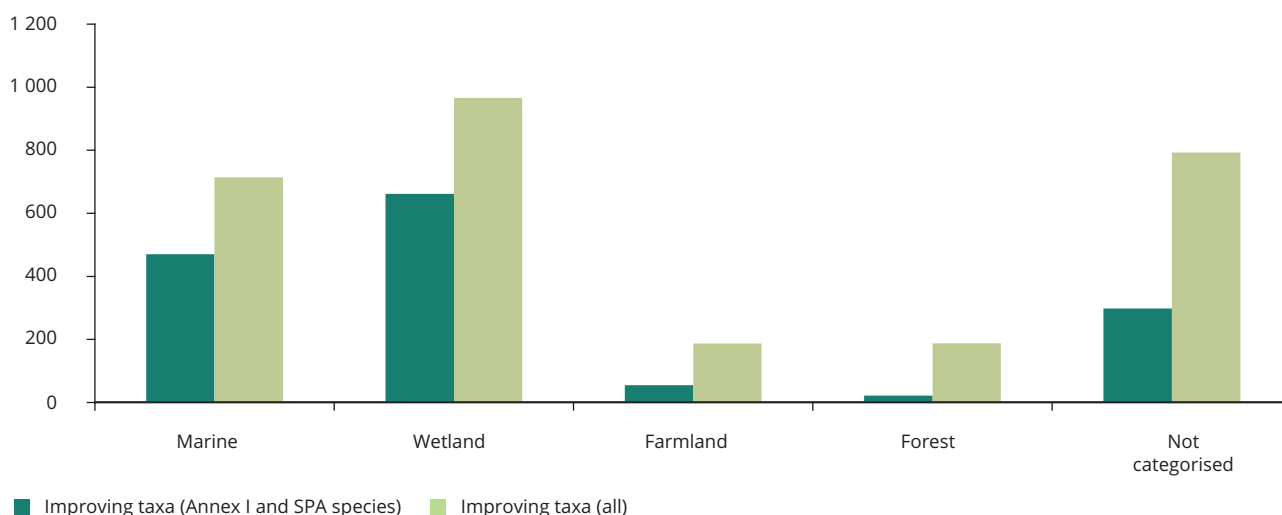
The shares of improvements for SPA and Annex I marine and wetlands bird species are higher but lower than those for farmland and forest bird species compared with other (non-Annex I and SPA) improving bird species. This may suggest that either the SPA coverage for forest and farmland birds is currently insufficient or the habitats within SPAs are not sufficiently improved for these species. Table 2.3 lists examples of Annex I/SPA trigger

bird species showing improving trends within each taxonomic group.

Around 78 % of Member States' reports show improving population trends attributed to breeding birds, 18 % to wintering taxa and 4 % to passage taxa. Looking at Annex I and SPA trigger species, their share of improvements is highest for passage birds (98 %), followed by wintering birds (73 %) and breeding birds (approximately 40 %).

Improvements can be driven by various actions and factors. Improvements resulting from conservation measures, such as habitat protection or restoration and research, monitoring and awareness-raising activities (see Box 2.4), lead to real positive changes in species' populations at Member State level and are considered genuine. Other improvements can be caused by changes in methodology, better knowledge, natural population dynamics (e.g. typical for wintering birds) or large-scale landscape changes. For example, agricultural intensification may create artificial feeding habitats for certain migrating and/or wintering birds (e.g. Greylag Goose and Barnacle Goose) in parts of their range, causing larger populations or improving trends to be observed in some Member States (and potentially decreases elsewhere).

Figure 2.15 Number of Member States' reports showing improving trends by species group



Note: Percentage of all reports in the groups; taxa could be listed under more than one category. Total number of reports showing improvement: 2 148. Number of Annex I and SPA trigger species showing improvement: 1 051.

Source: Article 12 Member States' reports and assessments.

⁽¹⁾ <https://www.unep-aewa.org>

Table 2.3 Examples of Annex I/SPA trigger taxa showing improving trends by taxonomic order

Taxonomic group	Total reports (n)	Example		
		Species name	MS	Changes in population trend between long and short period
Passeriformes	711	Red-backed Shrike (<i>Lanius collurio</i>)	UK	Dec → Inc
Anseriformes	390	Ruddy Shelduck (<i>Tadorna ferruginea</i>)	BG	Dec → Inc
Charadriiformes	302	Black Guillemot (<i>Cepphus grille</i>)	SE	Dec → Inc
Accipitriformes	176	Red Kite (<i>Milvus milvus</i>)	ES	Dec → Inc
Pelecaniformes	111	Bittern (<i>Botaurus stellaris</i>)	BE	Dec → Inc
Gruiformes	63	Common Coot (<i>Fulica atra</i>)	PL	Dec → Inc
Columbiformes	57	Stock Dove (<i>Columba oenas</i>)	PL	Unk → Inc
Piciformes	51	Wryneck (<i>Jynx torquilla</i>)	NL	Dec → Inc
Strigiformes	38	Great Grey Owl (<i>Strix nebulosa</i>)	FI	Sta → Inc
Suliformes	37	Shag (<i>Phalacrocorax aristotelis aristotelis</i>)	IE	Sta → Inc
Falconiformes	36	Red-footed Falcon (<i>Falco vespertinus</i>)	HU	Dec → Inc
Podicipediformes	34	Great Crested Grebe (<i>Podiceps cristatus</i>)	PL	Unk → Inc
Galliformes	26	Capercaillie (<i>Tetrao urogallus</i>)	PL	Dec → Inc
Coraciiformes	24	Kingfisher (<i>Alcedo atthis</i>)	AT	Unk → Inc
Caprimulgiformes	22	Nightjar (<i>Caprimulgus europaeus</i>)	LT	Sta → Inc
Ciconiiformes	22	Black Stork (<i>Ciconia nigra</i>)	GR	Unk → Inc
Gaviiformes	12	Red-throated Diver (<i>Gavia stellate</i>)	DE	Unk → Inc
Otidiformes	12	Little Bustard (<i>Tetrax tetrax</i>)	FR	Dec → Inc
Phoenicopteriformes	7	Greater Flamingo (<i>Phoenicopterus roseus</i>)	ES	Inc → Inc
Procellariiformes	7	Storm-petrel (<i>Hydrobates pelagicus</i>)	FR	Unk → Inc
Bucerotiformes	5	Hoopoe (<i>Upupa epops</i>)	ES	Sta → Inc
Cuculiformes	4	Cuckoo (<i>Cuculus canorus</i>)	NL	Dec → Inc
Pterocliiformes	1	Pin-tailed Sandgrouse (<i>Pterocles alchata</i>)	FR	Dec → Sta

Note: Population trend (long → short): Dec, decreasing; Flu, fluctuating; Inc, increasing; Sta, stable; Unc, uncertain; Unk, unknown; MS, Member State.

Source: Article 12 Member States' reports and assessments.

Box 2.4 Closer Look: Recovery of the Eurasian Spoonbill in France



Photo: Eurasian Spoonbill © Martin Mecnarowski, IUCN Red List

The Eurasian Spoonbill (*Platalea leucorodia leucorodia*) disappeared from France as a breeding bird in the 16th century but started reappearing sporadically in the country between 1973 and 1981 and regularly in the Grand-Lieu Lake (Loire Atlantique). In the mid-20th century, the species was once again endangered because of pollution, hunting and loss of breeding sites as a result of agricultural and hydroelectric developments. The aquatic ecosystem has been disturbed by the draining of feeding areas and transforming them into intensive agricultural zones as well as by water contamination from agricultural activities.

Since the 1990s, national and regional governments have been implementing conservation measures for the Eurasian Spoonbill. Recovery has been facilitated by

the development of a major international conservation plan, including measures such as targeted control of water levels, protecting flood plains and monitoring the development of vegetation and siltation. In France, conservation measures have included wetland protection, restoration and management, which has been supported by research, monitoring and awareness-raising activities.

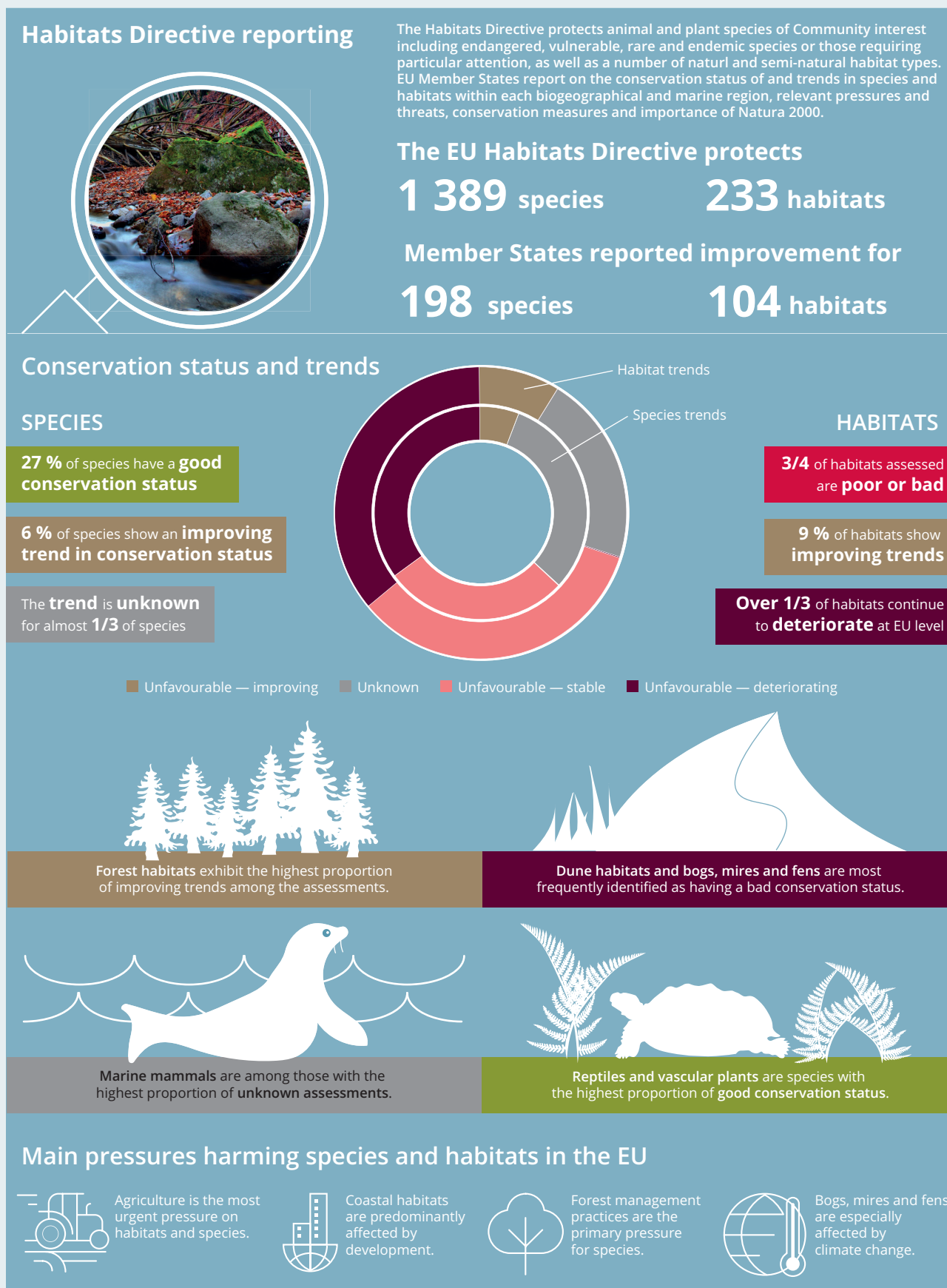
Of particular importance has been the Grand Lieu LIFE project (LIFE NAT/F/000841), which is implemented at a key site for the spoonbill. Specific measures in the project included acquiring adjacent land to carry out restoration operations such as desilting and dredging to remove a silt bank that had built up at the lake's outlet. The project also included a series of scientific studies to monitor multiple parameters (oxygen levels, sedimentation rates in the lake, suspended sediments and pollutants, and vegetation productivity). To raise public awareness, the former hunting lodge of the Guerlain family was refurbished as a visitor centre hosting educational exhibits on the fauna and flora of the lake. The project has improved the habitat for waterbirds, including the spoonbill, resulting in its breeding population increasing from around 20 to almost 200 pairs. As a result of such diverse measures in France and elsewhere in Europe, the majority of Eurasian spoonbill populations are recovering (especially in north-west Europe, Hungary and the Netherlands), but some populations remain vulnerable.

Source: Tucker et al. (2019).

Key messages

- In around 28 % of all Member States' reports, both short- and long-term population trends are increasing.
- Approximately 50 % of the improvements reported relate to Annex I and SPA trigger species.
- The majority of all bird species with improving trends are wetland and marine birds.
- The share of improvements in SPA trigger and Annex I marine and wetlands bird species are higher than those for farmland and forest bird species.
- Breeding birds have the highest share of improving population trends (approximately 80 %).



Figure 3.1 Summary of the Habitats Directive reporting


3 Status of and trends in habitats and species

The Habitats Directive protects animal and plant species of Community interest, including endangered, vulnerable, rare and endemic species or those requiring particular attention, as well as a number of natural and semi-natural habitat types (called habitats of Community interest), which are in danger of disappearing, have a small range or are outstanding examples of biogeographical regions. The directive outlines requirements for their protection and sustainable use. The 233 protected habitats included in Annex I and over 1 000 species included in Annex II are targeted by designating Sites of Community Importance (SCIs), which are, together with Birds Directive sites, one of the components of the Natura 2000 network. Other species benefit from strict protection (Annex IV) or regulated use (Annex V).

The implementation of several specific measures of the directive (including reporting on the status and trends of habitats and species) is structured along the nine biogeographical regions listed in the Habitats Directive and five additional marine regions based on those from the Marine Strategy Framework Directive (see Map 3.1). Reports from the Member States bring together information on the conservation status of and trends in the species and habitats within each biogeographical and marine region, relevant pressures and threats, conservation measures and the importance of Natura 2000. A separate report is prepared for each region where the habitat or species is present. In addition, Member States report on the directive's implementation (e.g. status of Natura 2000

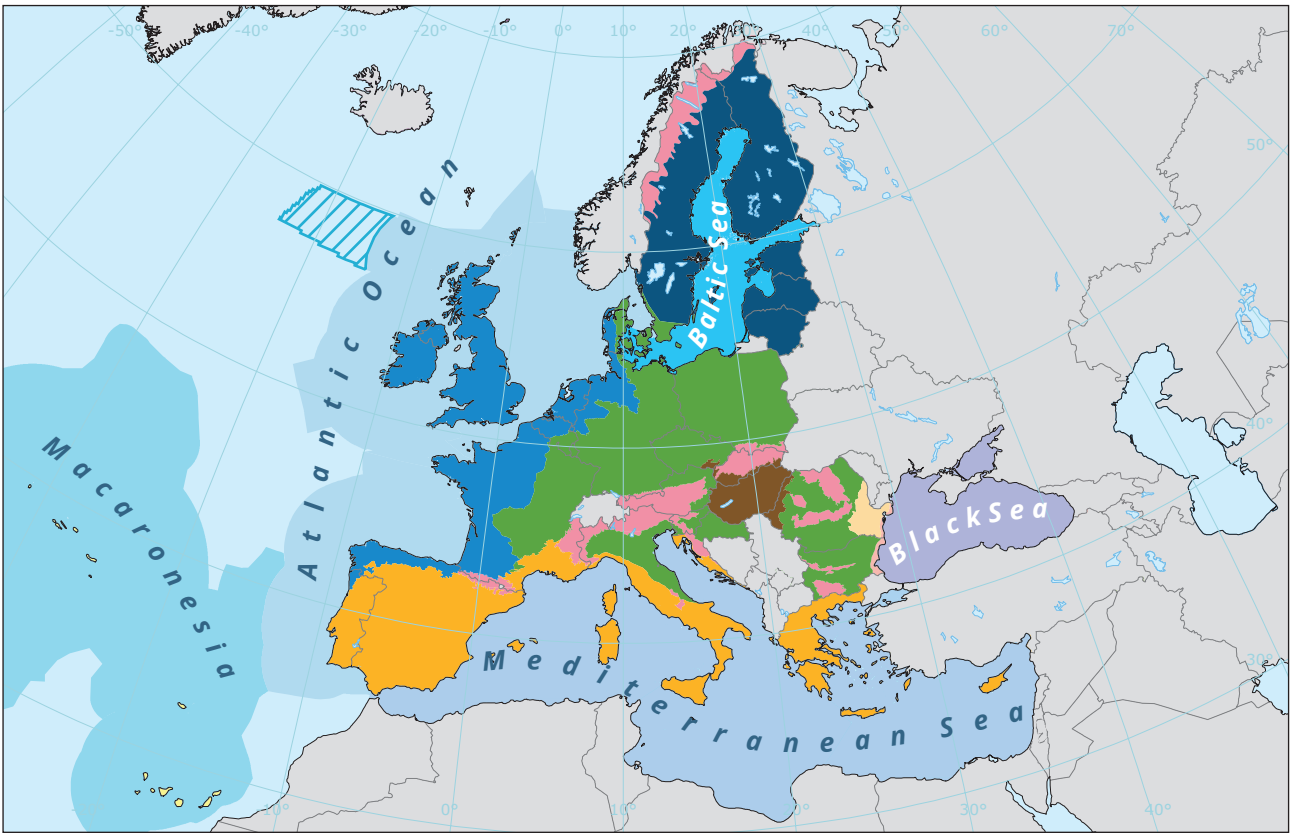
and its management, information on Annexes IV and V species).

On the basis of Member States' assessments for each habitat and species present in each biogeographical/marine region, separate EU regional assessments are conducted for the biogeographical regions and marine regions as a whole. They were carried out by experts from the EEA and the European Topic Centre on Biological Diversity (ETC/BD) between October 2019 and February 2020, followed by a public consultation in February and March 2020.

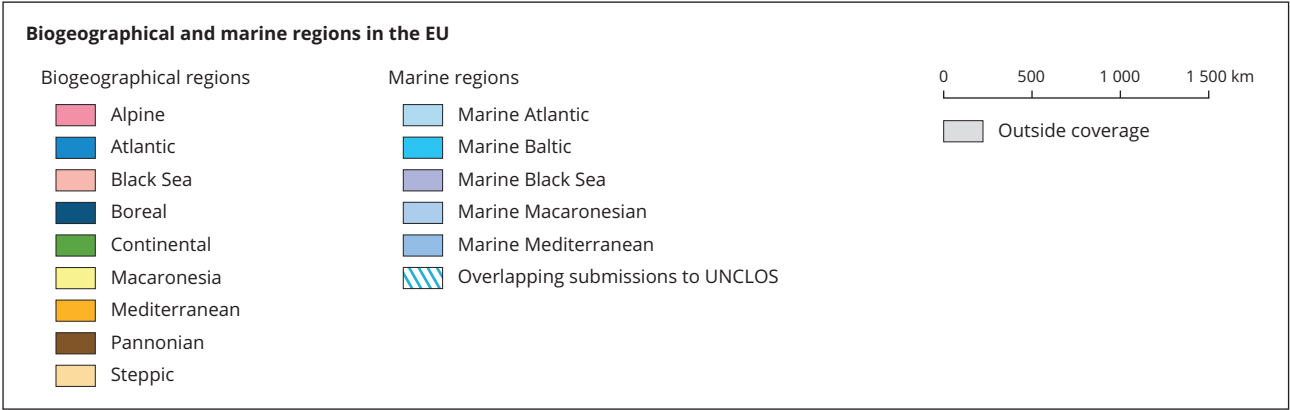
This chapter provides the main results from these reports, representing the period from 2013 to 2018. For this report, conservation status (see Box 3.1) and trends at Member State and EU biogeographical level are dealt with jointly in the following sections. In addition to highlighting the need for improvement, examples are provided of species and habitats having exhibited genuine improvements in conservation status or trend and positive trends since the previous reporting period.

To interpret the results further, it has to be noted that they do not express the actual proportion of the habitat area or the proportion of species populations with favourable or unfavourable status. Due to the nature of the data and methodology, the analysis shows the number of reports for each conservation status and does not reflect the shares of habitat area or species population that each Member State actually inherits.

Map 3.1 Biogeographical and marine regions in the EU



Reference data: ©ESRI



Note: For the marine regions, the boundaries are indicative only and do not imply any legal status.

Source: EEA and ETC/BD, May 2020.

Box 3.1 Approach to assessing conservation status

The conservation status of a species or habitat is derived using four parameters. The agreed method for the evaluation of conservation status separately assesses each of the parameters of conservation status, with the aid of an evaluation matrix, which is a part of the report format approved by the Member States, and then combines these assessments to give an overall assessment of conservation status. The aggregation matrix follows the one-out, all-out rule: if one parameter is assessed as bad, the overall conservation status is bad.

Parameters for assessing the conservation status of habitat types	Parameters for assessing the conservation status of species
Range	Range
Area covered by the habitat within its range	Population
Structure and functions, including the status of typical species	Habitat for the species
Future prospects	Future prospects

The status of a habitat is derived by individually assessing four parameters: natural range, area, structure and functions, and future prospects. The status of the range broadly reflects past and present changes in the habitat's natural distribution, while the status of the area reflects past and present declines in its surface area. Structure and functions are based on the condition of specific structural features and habitat functions. Habitat structure is considered to be the physical components of a habitat, which will more than likely be formed by species both living and dead (e.g. dead trees in a forest) but can also include abiotic features. It provides information on the proportion of the habitat area by condition, its trends, and typical species. The condition is reported as a minimum or maximum range in 'good', 'not-good' or 'unknown' condition. This parameter is further used in the restoration analysis (see Section 4.3).

As for habitats, status is derived for species by individually assessing the status for four parameters: natural range, suitable habitat, population, and future prospects. The status of the population reflects past and present changes in population size. Suitable habitat provides information on its quality, availability and trends.

A more detailed description of the methodology behind the Article 17 conservation status assessment can be found in Röschel et al. (2020).

3.1 Facts and figures

This section presents a short overview of the different types of habitats and species included in the Habitats Directive annexes. Annex I of the Habitats Directive comprises 233 different habitat types, 224 of which are terrestrial and nine marine. The reported terrestrial habitats cover almost one third of the terrestrial area of the 28 Member States (EU-28; 1 July 2013 to 31 January 2020), equivalent to 1.3 million km². Marine habitats cover an additional 0.4 million km² of EU waters. Annexes II, IV and V of the Habitats Directive list 1 389 species of European interest ⁽¹²⁾.

3.1.1 Share of different types of species and habitats

The Habitats Directive covers a wide range of habitat types and species. Over one third of the total number of habitat types covered by the directive are forests (Figure 3.2), making up nearly 0.5 million km² in area (Table 3.1). In the case of forests, this makes up approximately 27 % of the total forested area in the EU. Another 14 % of all habitats correspond to natural and semi-natural grasslands, which make up around 0.23 million km². As regards the number of habitat types, temperate heath and scrub, sclerophyllous scrub, bogs, mires and fens and rocky habitats each comprise only about 5 % of the habitats listed. For species, almost half are vascular plants, while molluscs and non-vascular plants represent 3 % each (Figure 3.3).

The Habitats Directive makes a fundamental contribution to the conservation of Europe's biodiversity. The habitat types protected by the directive overlap to a certain degree with more than half of the natural and semi-natural terrestrial, freshwater and marine habitat types in the European Nature Information System (EUNIS) habitat classification. The overlap is at EUNIS class level 3, which is a level broadly corresponding to the directive's Annex I habitat types and to the European Red List of habitats. The Habitats Directive includes about 5 % of the total number of European species referenced in the publications of the International Union for the

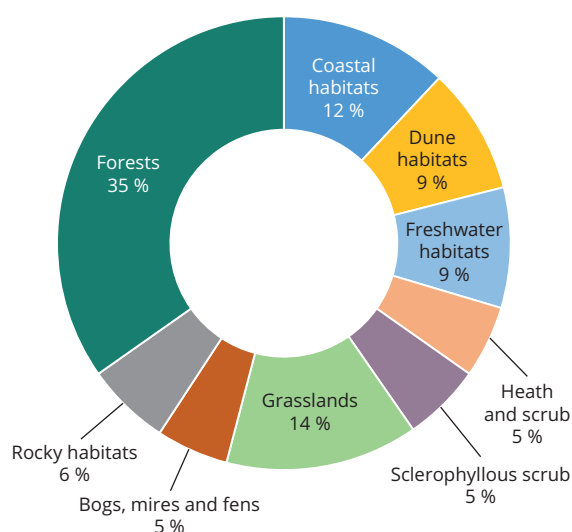
Conservation of Nature (IUCN) European Red Lists. The Red Lists rate the extinction risk of subsets of European species. The Habitats Directive's coverage of species is lower for species-rich groups, such as molluscs, arthropods and vascular plants and higher for amphibians (85 %), reptiles (70 %), mammals (64 %) and freshwater fish (39 %). Many species not included in the annexes of the directive benefit indirectly, as do their habitats, from the directive's protection regime.

3.1.2 Spatial distribution of species and habitats covered by the Habitats Directive

Habitats and species covered by the Habitats Directive are not equally distributed across the EU, and some regions have a higher diversity than others (Maps 3.2 and 3.3). A higher diversity of Annex I habitats can be found within mountainous regions and in other sparsely populated areas, e.g. Finland and the diverse Mediterranean southern and south-western Europe. Regions with a low diversity of habitats tend to be areas of more intensive land use. Examples include the lowland parts of the Atlantic region, the artificial plains of large European rivers, such as the Po plain in northern Italy and the Danube basin in eastern and south-eastern Europe, or the flat regions of Spain such as Castile and León.

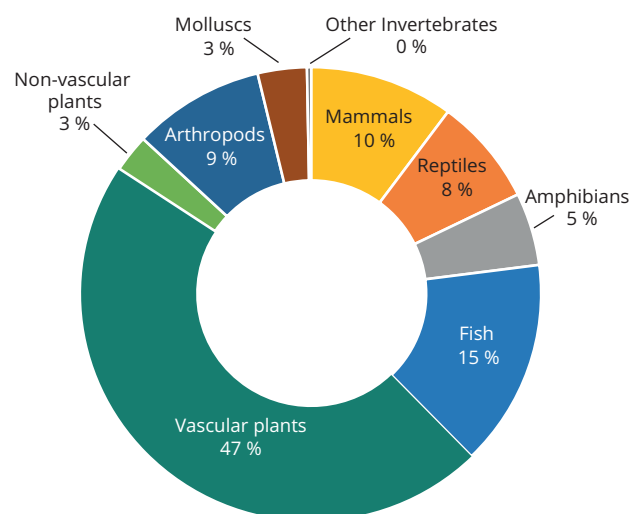
For species, their occurrence across the EU shows fewer distinct patterns, partly reflecting the fact that the directive protects species with very diverse ranges: from endemic species with restricted ranges to common and more widely distributed species. In addition, the comprehensiveness of inventories and mapping vary among the Member States and some species pose methodological challenges, e.g. mapping of highly mobile and common species. Nevertheless, there is a greater diversity of listed species in mountainous regions and in some Mediterranean countries, such as Greece and Cyprus, and in the Macaronesian region, which has high numbers of endemic species. The diversity of species covered by the Habitats Directive is generally lower in the northern Atlantic and Boreal regions of Europe and higher in central and southern Europe.

⁽¹²⁾ Annex II: species requiring designation of Special Areas of Conservation (Natura 2000). Annex IV: strictly protected species. Annex V: species for which exploitation may require specific regulation and management.

Figure 3.2 Share of habitats protected by the Habitats Directive (Annex I)

Note: Based on total number of habitats covered by the Habitats Directive.

Source: Article 17 Member States' reports and assessments.

Figure 3.3 Share of species protected by the Habitats Directive (Annexes II, IV and V)

Note: Based on total number of species covered by the Habitats Directive.

Source: Article 17 Member States' reports and assessments.

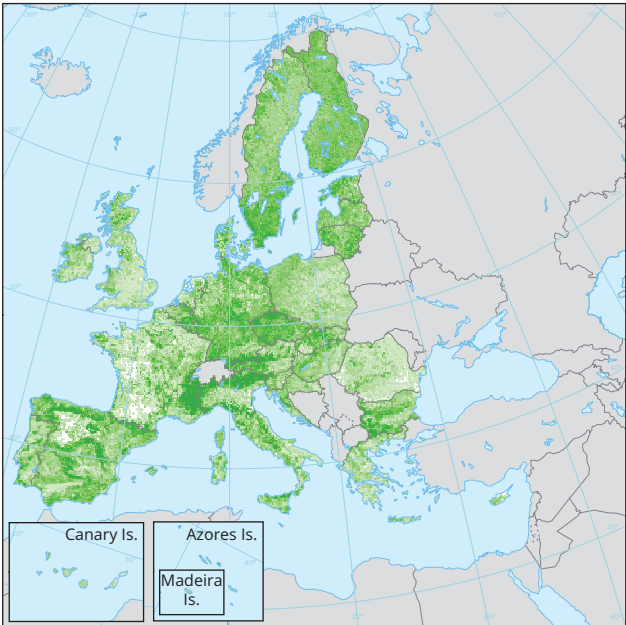
Table 3.1 Area of Annex I habitat types per group (marine and terrestrial)

Habitat group	Average area (km ²)
Bogs, mires and fens	137 700
Coastal habitats	406 000
Dune habitats	9 200
Forests	491 900
Freshwater habitats	127 800
Grasslands	234 300
Heaths and scrub	88 300
Rocky habitats	121 800
Sclerophyllous scrub	35 100
Total Annex I	1 652 200

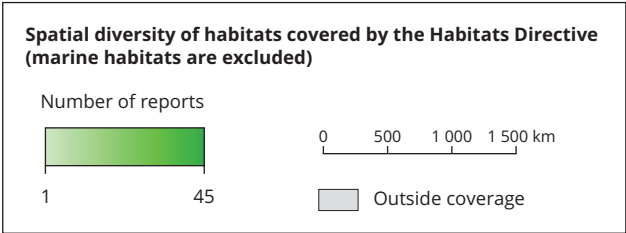
Note: Surface areas as reported by Member States and rounded to the nearest 100 km². The area reported for Romania is clearly overestimated: the reported area correspond to 127 % of the terrestrial area of this Member State.

Source: Article 17 Member States' reports and assessments.

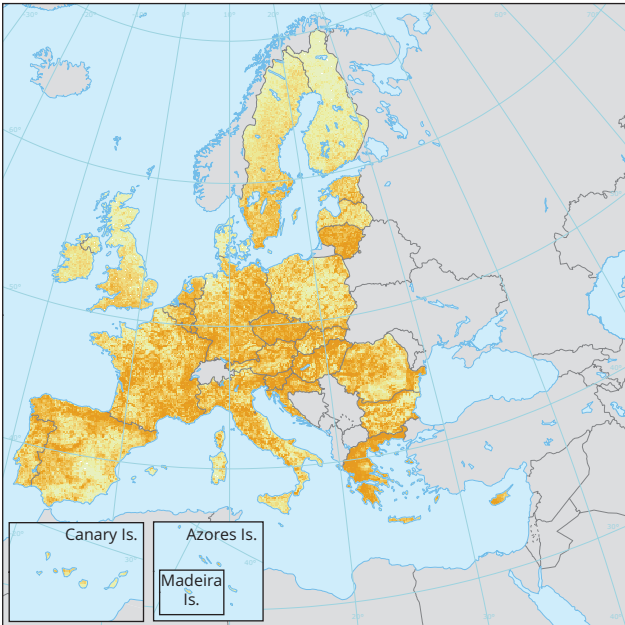
Map 3.2 **Spatial diversity of habitats covered by the Habitats Directive (marine habitats are excluded)**



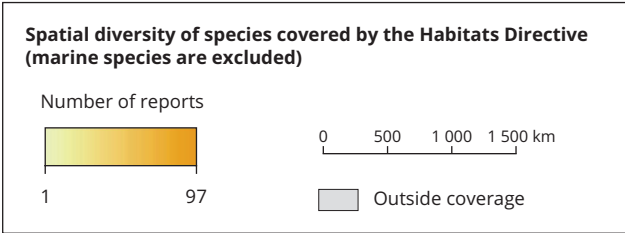
Reference data: ©ESRI



Map 3.3 **Spatial diversity of species covered by the Habitats Directive (marine species are excluded)**



Reference data: ©ESRI



Source: Prepared by ETC/BD based on the number of reported habitats/species per 10 km × 10 km grid cell: EEA; country boundaries. © OpenStreetMap based on Article 17 Member States' reports and assessments.

3.2 Conservation status

This section presents insights into the conservation status of habitats and species at the EU regional and Member State levels. It is based on the definition of 'favourable conservation status' provided in Article 1 of the Habitats Directive. The 'unfavourable' status is divided into two categories, reflecting its distance from 'favourable'.

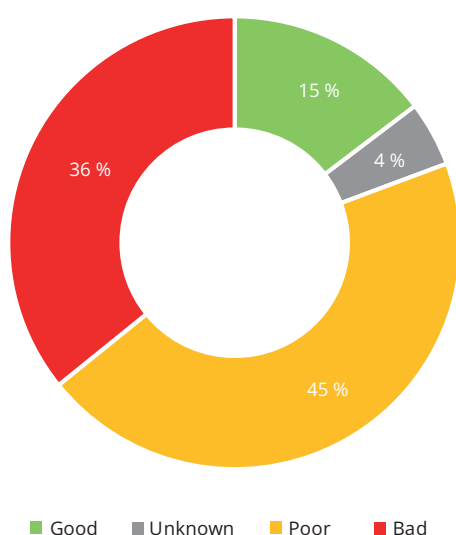
In this report, to simplify readability, the species and habitat conservation status categories are labelled 'good' for a favourable conservation status and 'poor' or 'bad' for an unfavourable-inadequate or unfavourable-bad conservation status (see Table 1.1). Because of the nature of data acquisition for each biogeographical and marine region, the conservation status is presented for habitat and species assessments rather than for single habitats and species. The number of 'assessments' refers to the assessment made by a Member State in one biogeographical region. Consequently, a species or habitat type that occurs in more than one biogeographical region within a single Member State can have more than one assessment. More information on the methodology underlying the conservation status assessment can be found in the separate methodological technical report (Röschel et al., 2020).

3.2.1 Habitat assessments

The results of the 818⁽¹³⁾ conservation status assessments of habitats at the EU regional level show that, while 15 % of habitat assessments show a good conservation status, the vast majority show an unfavourable conservation status (45 % poor and 36 % bad) (Figures 3.4 and 3.5). Compared with the last reporting period (2008-2012), bad conservation status for habitats has increased by 6 %. These differences are generally related to changes in the methods applied at the EU or Member State levels or are due to variations in data quality.

Of the habitat groups that were reported on, coastal habitats have the lowest proportion of assessments showing good conservation status. Dune habitats and bogs, mires and fens are most frequently assessed as having a bad conservation status (over 50 %). As one of the most species-rich habitats in Europe, grasslands are also among the habitats with the highest share of assessments showing a bad conservation status (49 %); managed grasslands are in a particularly bad state (see Section 6.2.1). Ranging from almost desert-like grasslands in Spain to humid meadows in central and northern Europe, grasslands are home to a great diversity of insects

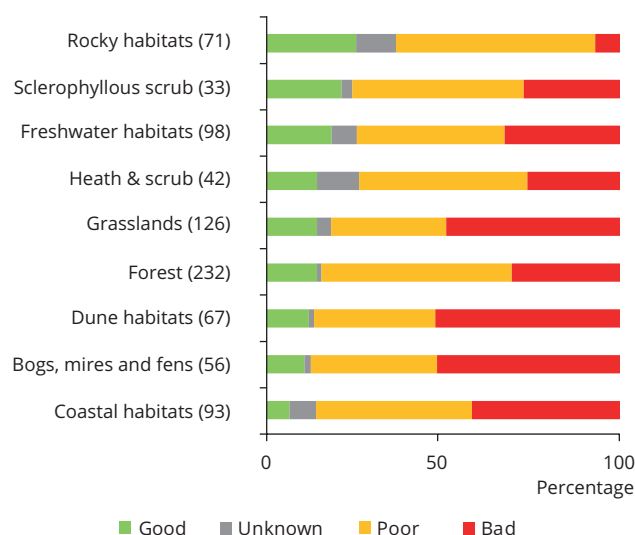
Figure 3.4 Conservation status of habitats at EU level



Note: Statistics are based on the number of EU habitat assessments (818).

Source: Article 17 Member States' reports and EU assessments.

Figure 3.5 Conservation status per habitat group at the EU level



Note: The number of assessments per group is indicated in parentheses. The total number of assessments is 818.

Source: Article 17 Member States' reports and EU assessments.

⁽¹³⁾ In total, 828 assessments were conducted for habitats. Because of data inconsistencies, only 818 were used for the statistical assessment.

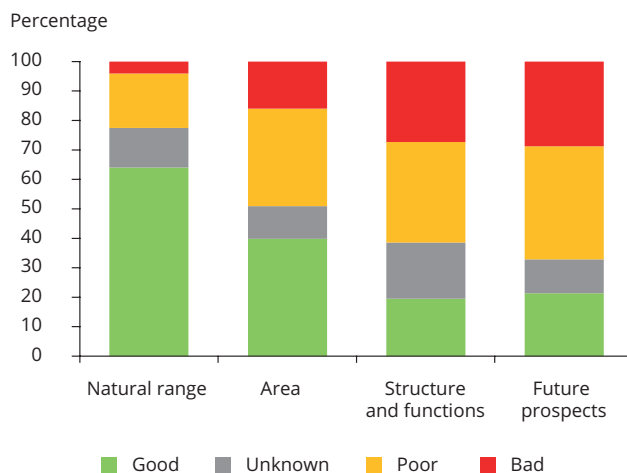
and other arthropods, including many pollinator species and other grassland-adapted species. An in-depth analysis shows that grasslands (and other habitats) with particular relevance for pollinator species have a higher proportion of bad conservation status compared with the rest of the habitat group (see the analysis in Box 6.2). For grasslands, as well as bogs and mires, the majority of the total habitat area has been lost over the last century due to intense human intervention, such as agricultural intensification, draining peatlands and land take/urbanisation (see Box 4.8 and Section 4.3.1 for more information on the dominant pressures affecting habitats). Rocky habitats (found mostly on mountain slopes and in more remote areas) provide a more uplifting picture, standing out with a comparatively high proportion of habitat assessments that show a good conservation status.

The overall status of a habitat is determined by a combination of status assessments for the parameters (see Box 3.1). A poor or bad overall conservation status is most frequently due to a poor or bad status of the habitat's structure and functions or future prospects. For many habitats, the area or — even more frequently — range have a good status (see Figure 3.6).

Across the EU's biogeographical and marine regions, conservation status assessments vary greatly (see Figure 3.7). Some of the observations are as follows:

- For the terrestrial regions, the Steppic⁽¹⁴⁾ region stands out with 72 % of habitat assessments showing a good conservation status; this region is exclusively confined to Romania, which reported the highest overall proportion of habitats with good status among the Member States (see Figure 3.8). For all other regions, not good (poor and bad) conservation statuses have been reported for more than 60 % of the habitat assessments.
- The Atlantic region has the smallest portion of habitats with good conservation status (4 %), with grasslands, forests and coastal habitat assessments being particularly degraded. It is also the region with the highest share of bad conservation status (over 50 %). Bad conservation status is also high for the Boreal, Pannonian, Continental and Mediterranean regions.
- Marine regions (with only nine habitat types⁽¹⁵⁾) have good statuses reported less frequently

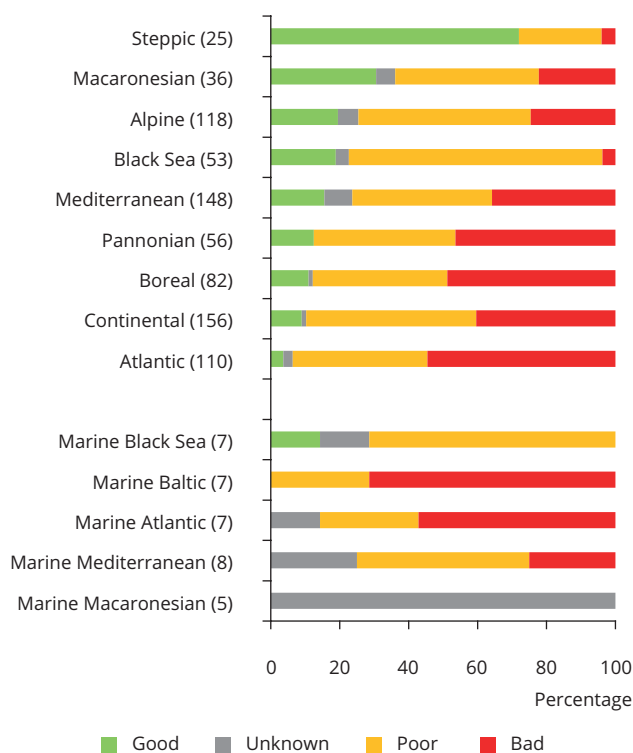
Figure 3.6 Status of parameters for habitats at EU level



Note: The total number of EU assessments is 818.

Source: Article 17 Member States' reports and EU assessments.

Figure 3.7 Conservation status of habitats for each biogeographical and marine region at EU level



Note: Statistics are based on the number of EU habitat assessments. The number of assessments per region is indicated in parentheses. The total number of assessments is 818.

Source: Article 17 Member States' reports and EU assessments.

⁽¹⁴⁾ Following the methods for assessing EU conservation status, the regional status for habitats that occur in only one Member State within a biogeographical region is the same as in that Member State.

⁽¹⁵⁾ Sandbanks (1 110), Posidonia beds (1 120), estuaries (1 130), mudflats and sandflats (1 140), large shallow inlets and bays (1 160), reefs (1 170), submarine structures (1 180), Boreal Baltic narrow inlets (1 650) and sea caves (8 330).

on average than terrestrial regions, with good conservation status reported for only one marine region (i.e. the Marine Black Sea, with 14 %).

- The Marine Baltic and Marine Atlantic regions show a particularly high share of bad status

assessments, with 71 % and 57 %, respectively. However, there are many marine habitats where conservation status was assessed as unknown because of the lack of data from Member States, e.g. for the Marine Macaronesian region, where all assessments were unknown.

Box 3.2 Closer look: Conservation measures to restore dunes and reefs



Photo: Dunes in the Netherlands © NEEMO

Bringing back dynamics in the Dutch dunes

Shifting dunes (2120) are present in most biogeographical regions, but the vast majority of this rare habitat's surface area can be found along the Atlantic coasts. They have the ability to provide a natural buffer against some of the negative effects of climate change but are highly dependent on natural processes such as wind erosion. A key threat to the habitat is human-induced fixation as a coastal defence, realised through the creation of solid dykes. The dunes are also threatened by the planting or encroachment of — often invasive alien — scrub and trees. A number of LIFE projects — especially in the Netherlands — have focused on restoring the natural dynamics, aiming to set back succession to an earlier stage. For example, ambitious measures were taken to create openings at five locations in

a fixed dune row at the Natura 2000 site Zuid-Kennemerland. These openings measured up to 15 m high and 50 m wide. This had extended the surface area of white dunes in the site from 154 ha to 175 ha by the end of the project. Wind patterns now drive mobile dunes, which are gradually 'walking' over the area. This supports many pioneer species that are typical of these habitats but which are endangered in the Netherlands. The project created corridors between white and grey dunes and thereby increased their resilience. Succession will now allow vegetation patches to move around, benefiting all of the target habitats and their typical species. A gradual improvement in this habitat's status has been recorded in the Atlantic region (from bad in 2006 to poor in 2018), with the strongest improvements in the Netherlands (poor in 2012 to good in 2018).

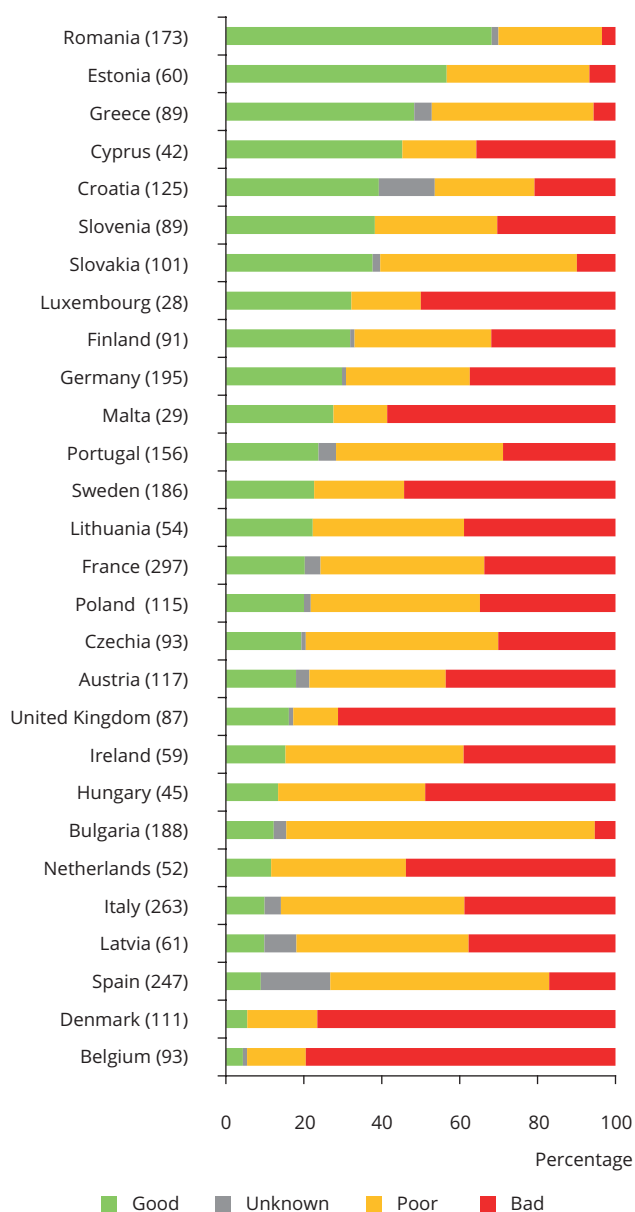
Restoring reefs in Kattegat

Reefs are particularly difficult habitats to restore, as evidenced by the project BLUEREEF (LIFE06 NAT/DK/000159). This LIFE project set out to rebuild offshore cavernous boulder reefs in the Kattegat which had been exploited. The idea was to build sea defences by restoring the structure and function of the cavernous element of the shallow offshore boulder reefs and by stabilising the top of the existing boulder reef. The project restored the target area using natural stones from a quarry in the southern part of Norway at significant cost. The project increased marine life, including the restoration of 6 tonnes of macroalgal vegetation and 3 tonnes of bottom-living fauna, and evoked a three- to six-fold increase in cod in the reef area. The project also increased awareness among environmental managers, policymakers and the broader public of marine nature restoration, conservation and management issues. A 'code of conduct' (BLUEREEF, 2013), containing valuable experiences and recommendations for carrying out restoration projects, was produced to potentially inspire other areas in northern Europe to restore natural stone reefs. For Danish initiatives, the code also gives guidance on obtaining the necessary permission from different marine authorities. Many of its recommendations are also relevant for the restoration of other marine nature types, such as biogenic reefs. This was a significant input at the local scale but, because the categorisation of the habitat type 'reefs' is so broad, this type of project is unlikely to have an impact on the overall conservation status of the habitat. The conservation status of reefs in Denmark's Marine Atlantic region remains bad.

Looking at the spatial distribution of conservation status, Member States' assessments show highly diverse results across the EU territory. Consistent with the analysis of biogeographical and marine regions, Map 3.4 illustrates high levels of variation among regions and a finer pattern inside the biogeographical regions. In line with the overall statistics on biogeographical regions, the areas with prevailing good conservation status are situated within the Alpine region and in a few Member States (mainly Croatia, Greece, Portugal and Romania). The Baltic and northern Atlantic regions, however, exhibit overwhelmingly bad conservation status. The highest concentration of distribution grids with predominantly bad status can be seen in the United Kingdom (strongly affected by atmospheric pollution) and the Marine Baltic region. In general, higher concentrations of distribution grids with predominantly bad status are seen in lowland and flat areas (e.g. Po basin, Danube basin, southern Sweden, Poland). This map also raises some data issues that are important to keep in mind when interpreting the results: the map is based on the conservation status assessed for each Member State's biogeographical/marine region projected into the 10 km × 10 km distribution grid and is affected by the quality of Member State distribution data. Conservation status assessment at Member State level includes a significant degree of expert input, which may lead to different results among Member States. Moreover, the number of habitats assessed varies greatly, as is the case for the United Kingdom and Marine Baltic region because they have less habitat variety than other countries or regions.

Member States' reporting shows significant variations in terms of the conservation status of habitats within their territories (Figure 3.8). With the exception of Romania, Estonia, Greece and Cyprus, Member States report a good conservation status for less than 40 % of their habitat assessments. Belgium and Denmark have, on the other hand, the lowest share of habitats with a good conservation status and — together with the United Kingdom — report more than 70 % of their habitats as having a bad conservation status. Some of the habitats with the poorest conditions across these countries are grassland habitats, such as *Molinia* meadows, as well as bogs, mires and fens, such as calcareous and alkaline fens. Spain and Croatia have the highest shares of unknown assessments among Member States (each exceeding 10 %).

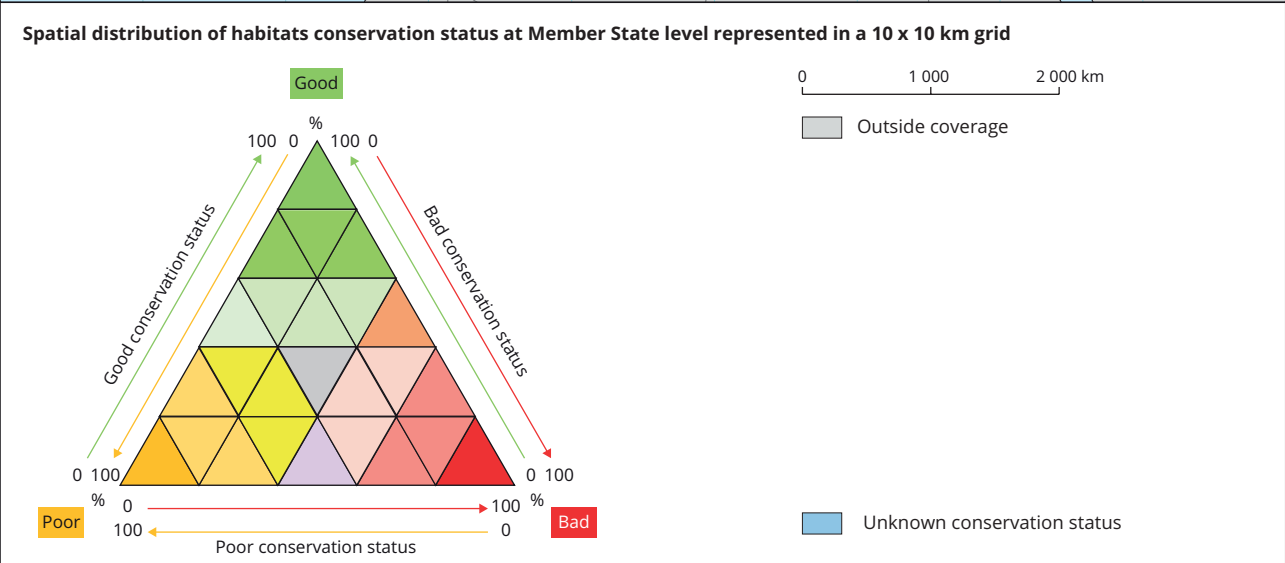
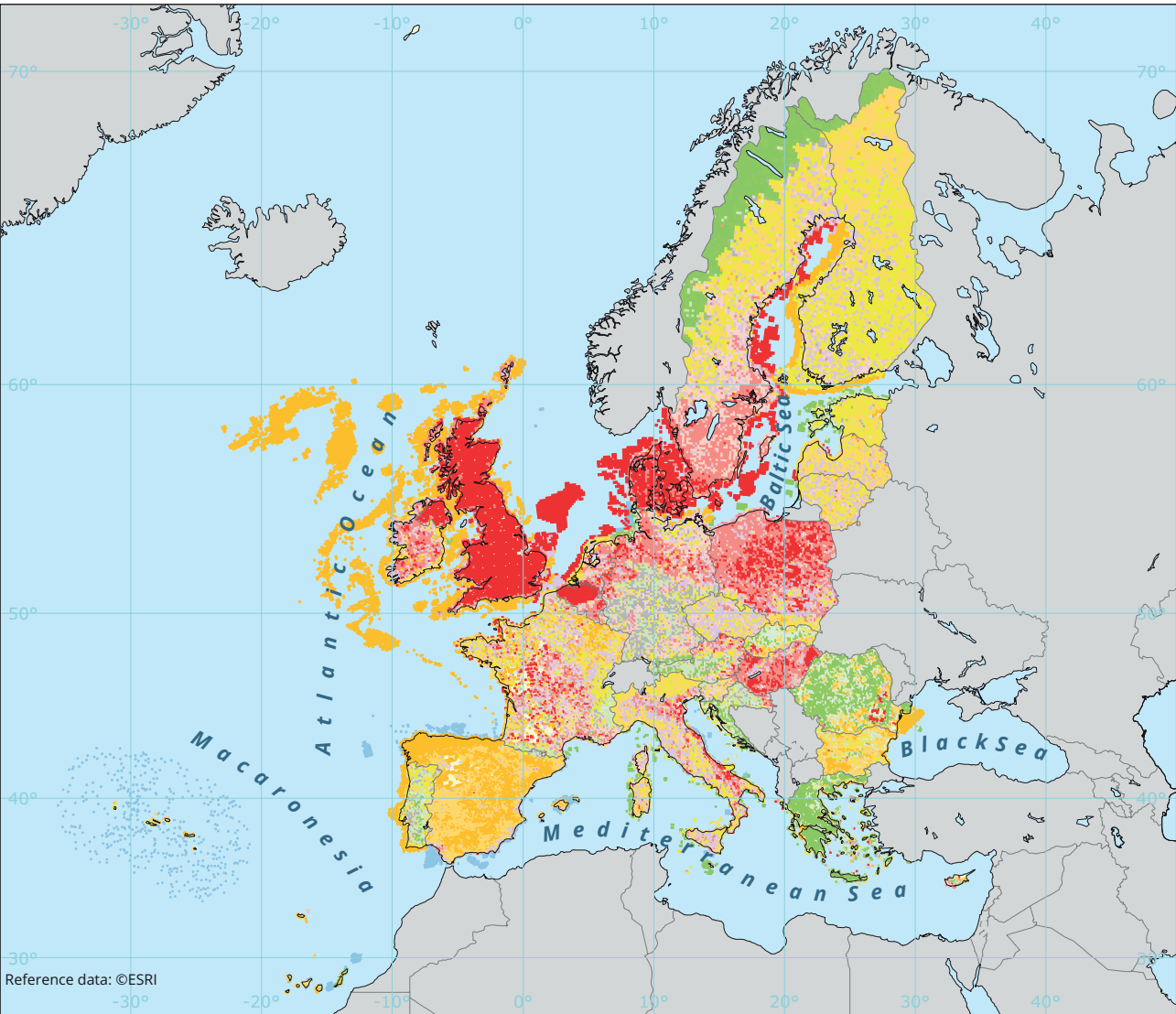
Figure 3.8 Conservation status of habitats at Member State level



Note: Statistics are based on the number of habitat assessments at Member States' biogeographical/marine level. The number of assessments per Member State is indicated in parentheses. The total number of assessments is 3 246.

Source: Article 17 Member States' reports and assessments.

Map 3.4 Spatial distribution of habitats' conservation status at Member State level represented in a 10 km × 10 km grid



Note: Details on the methodology available from Röschel et al., 2020.

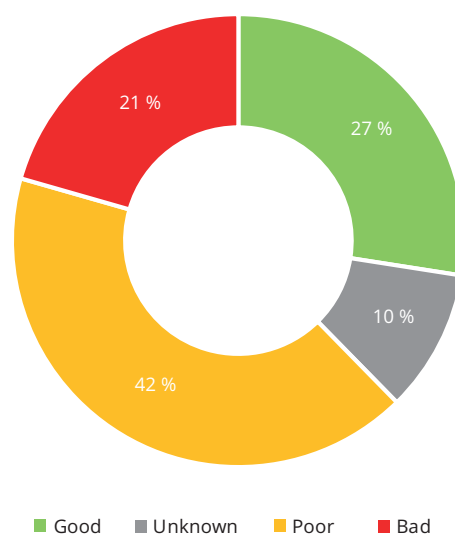
Source: Article 17 Member States' reports and assessments.

3.2.2 Species assessments

Looking at the 2 825 ⁽¹⁶⁾ EU regional assessments undertaken for animal and plant species covered by the Habitats Directive (see Figure 3.9), more than one quarter (27 %) have a good conservation status. Compared with the previous reporting period, this indicates an increase of 4 % ⁽¹⁷⁾. These differences are typically related to changes in methods applied at EU or Member State level or to variations in data quality. Nonetheless, over 60 % of the assessments report a poor or bad status (42 % and 21 %, respectively). Although the number of regional assessments that are classified as 'unknown' has decreased since the last reporting period (from 17 % to 10 %), it remains significantly higher than for the habitat assessments (4 %). The species with unknown status are often difficult to observe because of their cryptic lifestyle or often need for destructive methods for their inventories (e.g. *Vertigo* snails). There are also knowledge gaps for common or dispersed species requiring extensive surveys to gather information (e.g. many amphibians and reptiles or bats). Marine mammals are also among those species with the highest proportion of unknown assessments (over 78 %). Generally, the lack of appropriate monitoring is an important factor, in particular for cetaceans, for which, apart from two Annex II species, the range, population size and suitable habitat area are unknown in the majority of Member States.

The species groups with the highest proportion of good conservation status are reptiles and vascular plant species, with 36 % and 40 %, respectively (see Figure 3.10). However, a number of species remain in bad conservation status, such as many Macaronesian endemic reptiles, or mammals such as the European Mink (*Mustela lutreola*). More effective conservation efforts are needed, especially for fish and molluscs, which each have around 30 % of species with a bad conservation status.

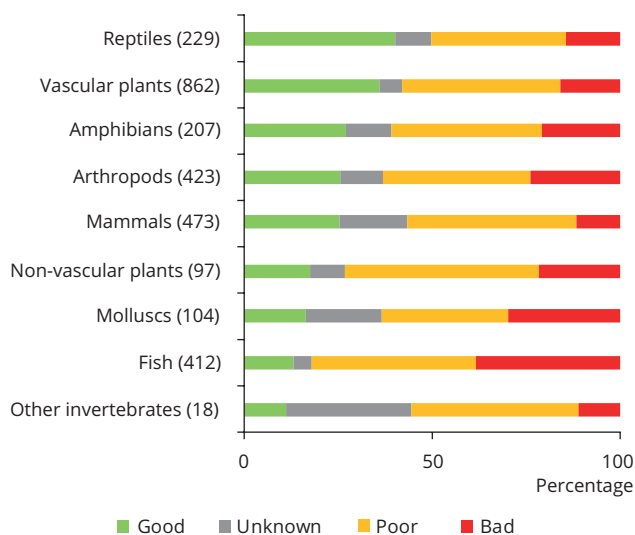
Figure 3.9 Conservation status of species at EU level



Note: Statistics are based on the number of EU species assessments.

Source: Article 17 Member States' reports and EU assessments.

Figure 3.10 Conservation status per species group at the EU level



Note: The number of assessments per group is indicated in parentheses. The total number of assessments is 2 825.

Source: Article 17 Member States' reports and EU assessments.

⁽¹⁶⁾ In total, 2 925 assessments were conducted for species, but 100 of these assessments corresponding to occasional or marginal occurrences of species within a biogeographical region were excluded.

⁽¹⁷⁾ Further information on the improvement of conservation status for species is provided in Section 3.4.3 in the analysis of genuine changes in conservation status assessments.

Box 3.3 Closer Look: Conservation action for species**Photo:** Inagua project © NEEMO

stand-alone drip irrigation system was installed, leading local seepage water to the places where the species were planted. This has served to rescue the species, while strong stakeholder engagement with regional and local authorities, a local company, cattle breeders, land managers and scientists ensures lasting support and a high chance that the species will survive.

Endemic plant species in the Canary Islands

The Canary Islands are rich in endemic species, i.e. species that only live in that part of the world. Populations of such plants and animals are often small and highly vulnerable. One of these endemic species, *Teline rosmarinifolius*, has experienced a decline from good status in 2006 to poor in 2012 due to overgrazing and devastating forest fires. Thanks to the LIFE project Inagua (LIFE07 NAT/E/000759), a genuine improvement to a favourable status was reported in 2018. A key component of the project was to take the opportunity of the forest fires to control overgrazing by goats and to develop a fire management plan. Some of the plant species were grown in nurseries and then planted and fenced to protect them from grazing. At the same time, a

**Photo:** Allis Shad © NEEMO**Allis Shad in Germany**

Allis Shad (*Alosa alosa*) is an anadromous fish species whose distribution is mainly in the north-east Atlantic and the rivers that drain into it. The distribution range has decreased dramatically. Only 150 years ago, several hundred thousand shad were caught annually in the Rhine system and formed an important part of the local economy in the surrounding communities. Across the EU, its conservation status is bad and mostly still declining. The main reasons for the Allis shad's decline are overfishing, increasing river pollution, destruction of spawning grounds and the construction of river obstacles such as dams and weirs. Two projects in Germany have helped to restore this fish species in the Rhine. The first (Projekt Maifisch, LIFE06 NAT/D/000005) introduced 4.8 million Allis shad larvae into

the Rhine, thereby reintroducing a species that had become extinct in the Rhine around 100 years ago. A follow-up project (*Alosa alosa*, LIFE09 NAT/DE/000008) released a further 6.2 million shad larvae into the river. It was reported that 250 adults were observed returning to the Rhine from the North Sea, which suggests that several thousand adult shad are returning annually to the Rhine system. Despite there being no improvement in conservation status, the genuine improvement in trend is entirely due to the project's activities. Nevertheless, further improvements may rely on actions relating to removing river barriers rather than introducing additional larvae.

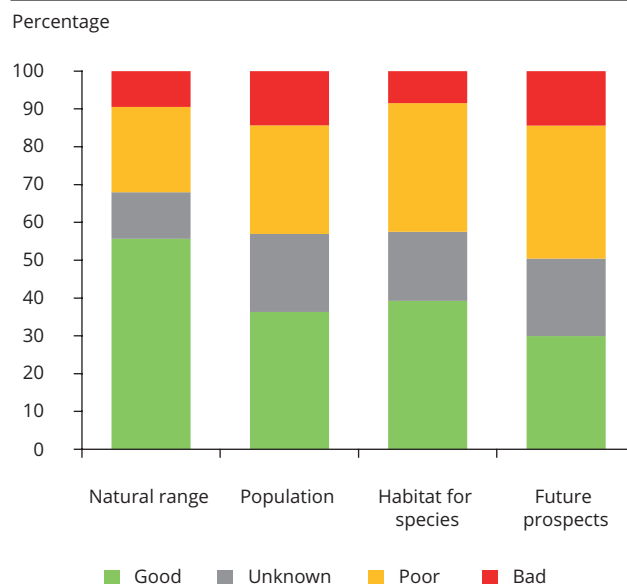
The overall status of a species is determined by combining status assessments for the four parameters (see Box 3.1). Future prospects are most likely to impede achieving good status, and 49 % are reported as poor or bad (Figure 3.11). Bad overall conservation status is more frequently due to bad population status than to the status of the suitable habitat, the highest proportion being for fish. Assessments indicate that species range has the highest proportion of good status (over 56 %). Data gaps in Member States' reports remain one of the largest challenges for assessing the status of species, with around one fifth of assessments missing the statuses of population, habitat and future prospects.

The conservation status of species assessments varies among the EU's biogeographical and marine regions (see Figure 3.12).

- In contrast to the results for habitats, the majority of terrestrial species assessments show higher shares of good than bad conservation status.
- The two terrestrial regions with the lowest share of good conservation status assessments are the same as for habitats (Atlantic and Continental, both with around 20 %).
- All marine regions, except the Marine Baltic region, have high percentages of unknown assessments, reflecting the general lack of marine population data (see examples in Table 3.3); the Marine Baltic region has over 75 % of its species assessments in a bad conservation status; however, this only concerns seven species.

Member States' assessments show highly diverse results in conservation statuses across the EU territory (see Map 3.5). The map reveals that areas with predominantly bad status are very scarce and rather localised. Overall, the proportion of areas with largely good conservation status is much higher than that for habitats, while the proportion of bad status is much lower. Poor conservation status is primarily found in central and western European countries. In general, the widely distributed species (occurring in more than 10 000 grids in a Member State's region) are more likely to have good status (45 %), while widely distributed habitats more frequently have poor or bad status (80 %). The limitations arising because of data quality are discussed above (see Map 3.5).

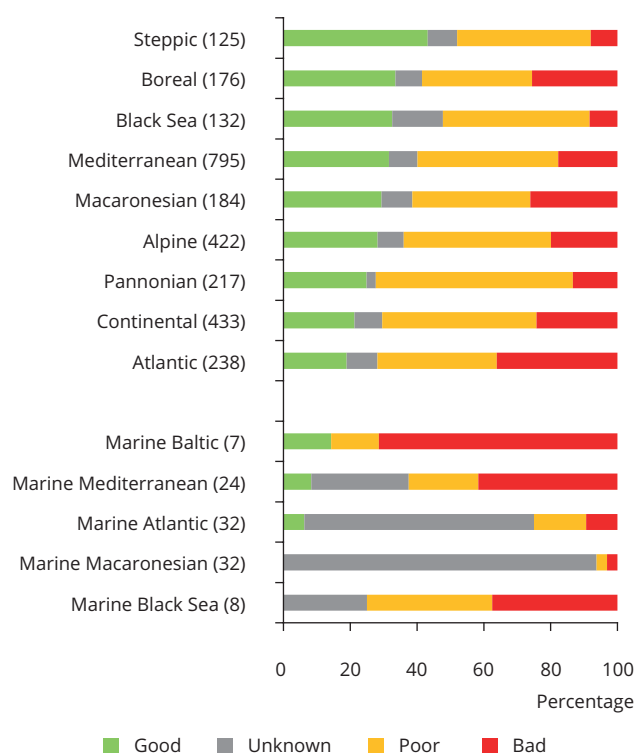
Figure 3.11 Status of parameters for species at EU level



Note: The total number of EU assessments is 2 825.

Source: Article 17 Member States' reports and EU assessments.

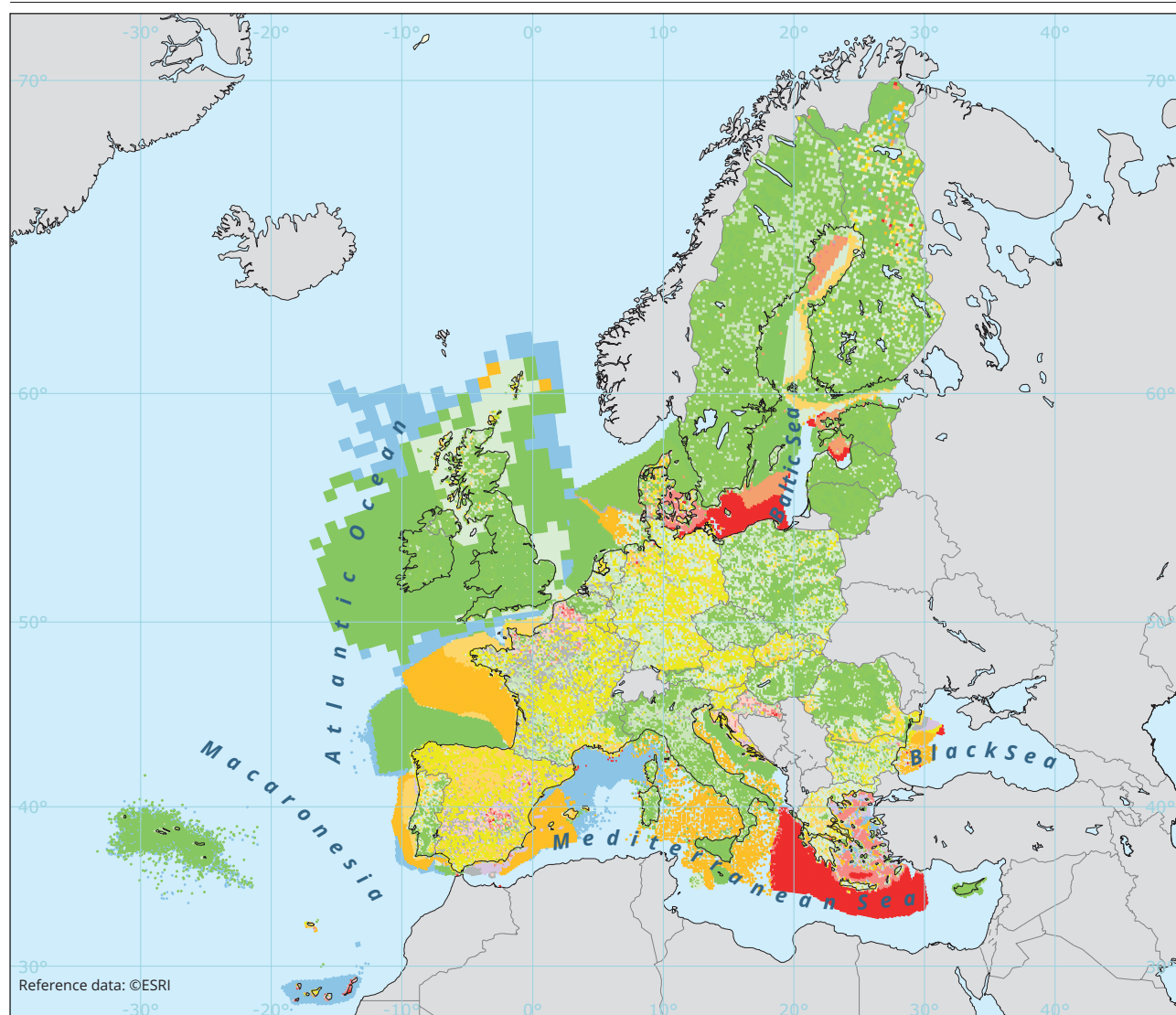
Figure 3.12 Conservation status of species for each biogeographical and marine region at EU level



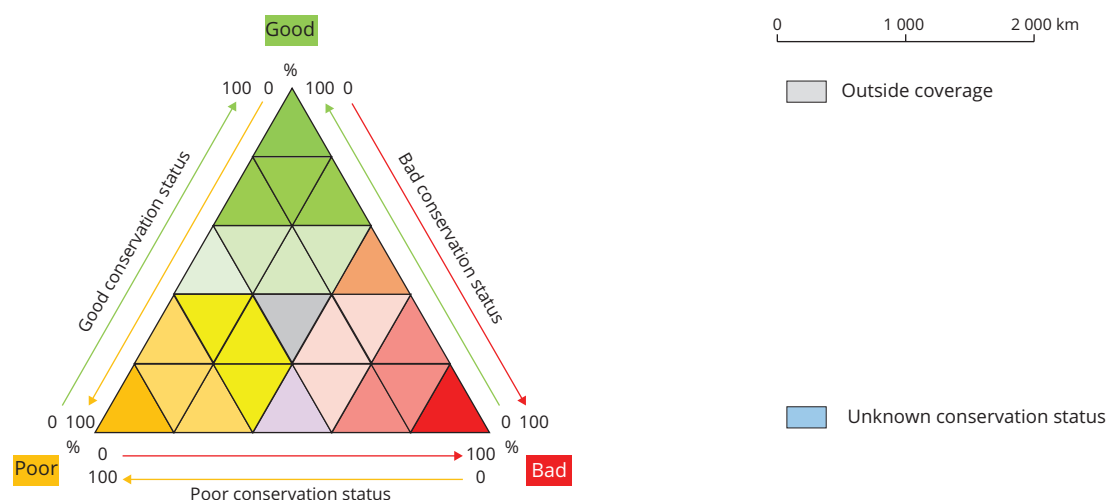
Note: Statistics are based on number of EU species assessments. The number of assessments per region is indicated in parentheses. The total number of assessments is 2 825.

Source: Article 17 Member States' reports and EU assessments.

Map 3.5 Spatial distribution of species' conservation status at Member State level presented in a 10 km × 10 km grid



Spatial distribution of species conservation status at Member State level represented in a 10 x 10 km grid



Notes: Details on the methodology available from Röschel et al., 2020. In some exceptional cases, such as widely ranging but poorly known cetaceans, Member States submitted maps based on a 50 km × 50 km grid.

Source: Article 17 Member States' reports and assessments.