European Environment Agency
European Topic Centre on
Biological Diversity

Data quality coherence check

Summary of results checking quality of data collected under the Nature Directives

Fact sheet

HR

Table of contents

Summary of task

Reporting under Articles 12 of the Birds Directive, Article 17 of the Habitats Directive and reporting on Natura 2000 sites are the most comprehensive and regularly updated and coordinated datasets on biodiversity in the European Union. These datasets are used in support to EU biodiversity policies (through generation of maps, indicators and other statistics) and also by the academic world and stakeholders. It is essential that the data are of the highest quality as possible. This task sets out to highlight critical gaps or inconsistencies in Article 12 and Article17 reporting to guide Member States to improve data quality for the nature reporting period 2019 – 2024. The task additionally addresses inconsistencies in reporting Natura 2000.

For which purposes are the data used at the European level?

The data collected under the nature directives have to be 'fit' for the following main purposes[1]:

- assessing and enhancing completeness of the Natura 2000 network (Natura 2000 sufficiency assessments)

[1] The list is not exclusive

preparation of the Union Lists (sites designated under the Habitats Directive by biogeographical region)
- quantification of restoration needs and prioritization in the PAFs
- providing a regular assessment of the State of Nature in the EU
- informing on progress towards the EU biodiversity strategy to 2030
- providing the biodiversity component of "The European Environment – State and Outlook report" (SOER)
- underpinning outreach products such as the "Natura 2000 Barometer and Viewer"

Furthermore, the information reported on species and habitats distribution, conservation status and trends, as well as on threats and pressures is highly relevant to assess cross-sectoral policy impacts.

The following analyses are better understood when seen together with the relevant dashboards. A description of the methodologies used in the following analyses and the dashboards can be found in links below. In some cases, the numbers of reported habitat types or species are small and this makes the calculated percentages for these particular cases not statistically robust. Therefore, attention should be paid to these values. Where possible, the number of observations has been placed in brackets next to the percentages. The analysis below is based on Member State level. Some of the online dashboards may contain a filter for biogeographic/marine region should the user wish to further investigate. The EU average refers to EU28.

Summary of the results for HR

1. Coherence check of nature reporting data with data reported under Natura 2000

For the analysis comparing values in Natura 2000 with those reported in the Article 12 and 17 reports, 'comparable' records are those which could be linked between the 2 datasets based on a combination of fields for habitats (Member State, biogeographic/marine region, habitat code, area), non-bird species (Member State, biogeographic/marine region, species code, population unit, population value), and bird species (Member State, species code, season, population unit, population value). Where one or more of these links could not be made, the record was 'non-comparable'.

It must be noted that this is not a validity check of the reported habitat area and species population values.

1.1 Habitats: comparison of Article 17 and Natura 2000 habitat areas

There should be coherence in data between the Natura 2000 database and the information provided in the Article 17 report, e.g. for a given habitat type, the combined area reported in Natura 2000 sites in the Member State's Natura 2000 database should not exceed the national area reported in the Article 17 report. Additionally, the combined Natura 2000 habitat area reported in the Natura 2000 database should be the same (or similar) to the Natura 2000 habitat area submitted in the Article 17 report.

Article 17 area and Natura 2000 area from the Natura 2000 database:

All habitats reported by HR could be compared with the Natura 2000 database end_2018. 81.9% of these report a Natura 2000 area of less than or equal to the Natura 2000 habitat area (EU average 74.9%). For the remaining habitats, 6.9% area reported with a Natura 2000 habitat area of 6.9% 1 to 1.5 times greater or more than 2 times greater than the Article 17 habitat area and a smaller proportion of 1.5 to 2 times greater than Article 17 (4.2%).

Natura 2000 area reported in Article 17 and Natura 2000 area from the Natura 2000 database:

For the comparable proportion of Natura 2000 habitat area reported in Article 17, the majority of habitats report a lower area in the Natura 2000 database (70.8%, EU average 46.2%). The next largest proportion is reported with a Natura 2000 habitat area of 1 to 1.5 times the Natura 2000 area in Article 17 (12.5%, EU average 32.7%).

For further details see the online statistics here.

1.2 Non-bird species: comparison of Article 17 and Natura 2000 species population

There should be coherence in data between the Natura 2000 database and the information provided in the Article 17 report e.g. for a given species, the combined population reported in Natura 2000 sites in the Member State's Natura 2000 database should not exceed the national population reported in the Article 17 report. Additionally, the combined Natura 2000 population reported in the Natura 2000 database should be the same (or similar) to the Natura 2000 population submitted in the Article 17 report. However, it must be noted that for Art. 17 reporting, agreed population units are used which is not the case for Natura 2000. Therefore, it is not an obligation for Member States to use the same population units in both reporting flows. This is an added complication for comparing records between the two reporting flows.

Article 17 population and Natura 2000 population from the Natura 2000 database:

12.1% of all species reported in CZ were compared between the Article 17 database and the Natura 2000 database. The highest comparable proportion among Member States does not exceed 34.2%.

Of this comparable proportion, 77.8% reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is similar to the EU average of 80.5%. The remaining 22.2% of species reported a Natura 2000 population greater than the Article 17 population, which slightly higher than the EU average of 19.4%.

Natura 2000 population reported in Article 17 and Natura 2000 population from the Natura 2000 database:

Regarding the Natura 2000 population reported in the Article 17 national report, 12,08% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 27.8% of species report a population in Natura 2000 greater than in Article 17, percentage that is lower than the EU mean of 32.5%. The remaining 72.2% of species report a population in Natura 2000 smaller than that in Article 17, which is higher than the EU mean of 64.5%. For no species with comparable records the population within the Natura 2000 was equal to the population reported under Art. 17 (EU average is 3%).

For further details see the online statistics here.

1.3 Bird species: comparison of Article 12 and Natura 2000 species population

There should be coherence in data between the Natura 2000 database and the information provided in the Article 12 report e.g. for a given bird species, the combined population reported in Natura 2000 sites in the Member State's Natura 2000 database should not exceed the national population reported in the Article 12 report. Additionally, the combined Natura 2000 population reported in the Natura 2000 database should be the same (or similar) to the Natura 2000 population submitted in the Article 12 report. However, it must be noted that for Art. 12 reporting agreed population units are used which is not the case for Natura 2000. This is an added complication for comparing records between the two reporting flows.

Article 12 population and Natura 2000 population from the Natura 2000 database:

For Article 12 bird species, it was found only 44% of bird records reported in the Natura 2000 database were comparable with an equivalent record in the Article 12 national report. The highest comparable proportion among Member States does not exceed 65%.

Of this proportion of comparable records, 34% report a larger population in Natura 2000 than the national population reported in Article 12, which is higher than the EU average of 20%. Where the population is reported as higher than Article 12, the highest proportion is reported as >2 times the Article 12 population (16%, EU average 8.14%).

Natura 2000 population reported in Article 12 and Natura 2000 population from the Natura 2000 database:

Regarding the comparison of Natura 2000 populations reported in Article 12 and Natura 2000 database, a lower proportion of species could be compared: 43.4%.

Of this comparable proportion, 17.2% of species reported an equal population in Natura 2000 and Art 12, higher than the EU average of 3.2%. 55.6% of species reported a larger population in Natura 2000 compared with the Natura 2000 population in the Article 12 report, which is above the EU average of 40.5%. Where population was reported as higher, the largest proportion was reported as > 2 times the Article 12 population (17.2%, EU average 14.3%). 27.3% report a lower population in Natura 2000 than in Article 12 report, which is lower than the EU average of 56.2%.

For further details see the online statistics here.

2. Analysis of specific fields in Article 12 & 17 reporting formats

2.1 Data quality and completeness

Several fields in the Article 17 and 12 reports are highlighted as 'mandatory' and are essential to assessing the status of a habitat or species at both national and EU level. When such fields have been completed with 'unknown' or the values are simply missing, this presents a data quality issue. Moreover, when 'expert opinion' or 'insufficient data' is indicated as method used, this highlight a need for further monitoring effort. This analysis complements the relevant analysis already included in the national summaries of Article 12 and Article 17.

Habitats

The largest proportion of missing mandatory information seen with HR habitats is with coastal habitats (28.1%, EU average 12%) and freshwater habitats (27.4%, EU average 12.3%). Sclerophyllous scrub is the only habitat that does not have missing information. Of all habitat groups, for coastal the parameter short-term trend of habitat area in good condition has the highest proportion of missing information (76.9%, EU average 34%). Across all habitat groups, this parameter consistently has a high proportion of information missing from the reports (exception being sclerophyllous scrub which does not report any missing information for any parameter and forests which reports a lower proportion missing than for other parameters in this habitat group). Another parameter which is consistently reported with a high proportion of missing information in all habitat groups is the short-term trend inside the network.

The highest proportion of expert opinion as the method used is seen with habitat groups coastal habitats (44.2%, EU average 23.4%), freshwater habitats (38.7%, EU average 27.8%) and heath & scrubs (28.9%, EU average 25.1%). The highest proportion of insufficient data as the method used is seen with grasslands (25.6%, EU average 16.2%) and heath & scrubs (21.1%, EU average 14.9%) .

Non-bird species

The is a high proportion of missing mandatory information for all species groups e.g. with amphibians (63.1%, EU average 16.3%), molluscs (52.2%, EU average 19.7%), non-vascular plants (54.3%, EU

average 22.1%) and other invertebrates (58.1%, EU average 33.4%). In fact, the lowest reporting is seen with fish species (32.9%, EU average 13%).

Parameters for which 100% missing information is missing for specific groups generally have a high proportion of missing information for the remaining species groups e.g. this is seen with the favourable reference population (other invertebrates, amphibians, molluscs) and also with a high proportion with reptiles (97.9%), arthropods (85.2%), fish (61.2%) and non-vascular plants (90.9%).Expert opinion is reported in the highest proportion with fish (57.8%, EU average 12.9%) and the highest reporting of insufficient data is seen with non-vascular plants (67.1%, EU average 30.1%).

Bird species

The bird groups cuckoos, grebes, swifts & nightjars and passerines are those which report the highest proportion of missing information across all mandatory fields in the reporting format (50%, 47.7%, 47.2% and 46.5% of all fields, respectively). This is higher than the respective EU averages of 12.9%, 14.1%, 16.5% and 13.9%.

Bird groups with primarily missing mandatory information for wintering species (trend information) are the kingfishers, rollers, bee-eaters & hoopoe, loons or divers, passerines, falcons, gannets & cormorants, hawks & eagles, waders, gulls & auks, cranes, rails, gallinules & coots (moistly 100% missing for both the short-term and long-term trends). The group with the highest missing information on hunting bags are ducks, geese & swans (100%). A high proportion of missing information on the short-term trend within the SPA network is seen with species groups loons or divers, owls, pigeons & doves, swifts & nightjars and woodpeckers (all 100% missing information but also reported missing in other groups to a lesser extent). Several species groups reported the long-term trend in breeding population as field largely missing or unknown: cranes, rails, gallinules & coots, grebes, loons or divers, owls, petrels, storm petrels and shearwaters, pigeons and doves, swifts and nightjars, woodpeckers and cuckoos. Only those with 100% missing information are listed here but many other groups also report a high proportion of missing information. Where the short-term trend is missing this more or less mirrors the missing information for long-term trend as well.

The highest proportion of expert opinion as the method used is seen with loons or divers (60%, EU average 48%). The highest proportion of reporting insufficient data is seen with cuckoos (66.7%), swifts & nightjars (65.4%), owls (64.3%). The percentages are higher than the EU average for these groups (51%, 41% and 43.% respectively).

For further details see the online statistics here.

2.2 Quality of conclusion of the parameters for assessing conservation status

The 'method used' field can be an indicator of the quality of data used to conclude on the parameters of the habitats and species. A complete survey indicates the best quality information, followed by partial estimate. Expert opinion indicates a lack of data and a reliance on opinion rather than empirical data. This analysis complements the assessments of conservation status delivered from the Member State, which is part of the National Summary and can be found here.

Habitats – methods used

For the area parameter, both complete survey and partial estimate frequently reported as the method used for assessing this parameter across all habitat groups. Where expert opinion is reported, the highest use of this is with coastal habitats (46.2%, EU average 12.7%), freshwater habitats (21.1%, EU average 18.3%) and rocky habitats (18.2%, EU average 18.9%)., although also reported for groups: bogs, mires & fens, forests and grasslands.

While there is a higher frequency of reporting either complete survey or partial estimate for some habitat groups for the parameter structure and functions, where expert opinion is used this is mainly seen with heath & scrub (60%, EU average 19.6%) and freshwater habitats (57.9%, EU average 19%). Unlike the area parameter, absent data is the reported method used for 5 habitat groups ranging from 18.2% for rocky habitats (EU average 19.9%) to 46.2% for coastal habitats (EU average 22.3%). Also, seen with bogs, mires & fens, freshwater habitats and grasslands habitats groups.

Non-bird species – methods used

The complete survey is used only sometimes. Expert opinion is the most frequent method used for the population parameter across all other species groups. In many cases there was absent data, for example for amphibians, arthropods and mammals. For the habitat of the species the most used methods are absent data dn expert opinion.

For further details see the online statistics here.

2.3 Use of the 'change & reason for change' field

The 'change and reason for change' field as reported in Article 17 is an important field that shows whether a change in conservation status or trend is a genuine change (i.e. an improvement or deterioration) or a non-genuine change (change of methodology, knowledge etc). Species and habitats which report genuine changes in status and trends are used to assess improvement.

Habitats

As this is the first time reporting for HR, the change and reason for change field was not expected to be completed.

No further analysis was undertaken.

Non-bird species

HR reports cannot be compared, because it's their first reporting period.

For further details see the online statistics here.

2.4 Conservation measures

Where habitats and species are in an unfavourable conservation status or with a deteriorating trend it is necessary to understand if there are conservation measures in place to improve their status or if conservation measures have been identified but are not yet in place. Where conservation measures are needed but have neither been implemented nor identified, this can give an indication of a critical gap. This analysis complements the relevant analysis already included in the national summaries of Article 12 *and* Article 17*.*

Habitats

Most measures were identified as needed but not yet taken. Where conservation measures are identified as needed but none have yet been taken, the highest proportion is seen with forests (97%, EU average 22.6%), heath & scrub (80%, EU average 17.2%) and coastal habitats (69.2%, EU average 28.2%). For most of the habitat groups, the main purpose of the measures taken were to maintain the current range: 100% for coastal habitats, freshwater habitats, grasslands and rocky habitats. 2 bog, mire & fen habitats (33.3% of this habitat group) report the restoration of structure and functions as the main purpose of the measures (EU average 25.5%).

Non-bird species

Most measures were identified as needed but not yet taken. For HR species, the group with the highest proportion of reporting measures needed but not yet taken. For most of the species groups, measures

are not needed. For species, the group with the highest proportion of reporting measures not needed is mammals (24.5%, EU average 46.9%).

Bird species

Breeding: For the majority of breeding species reported in HR measures were reported as needed and not taken, the second most reported category was needed and taken. Only 2 breeding species were reported in the category of conservation measures not needed.

Wintering: For the majority of wintering species in HR it was reported that conservation measures were needed but not taken. The second most reported was measures needed and taken.

Passage: For most species reported in HR it was indicated that measures were needed but not taken. Only one passage species was reported in the category of conservation measures needed but not identified, belonging to the group of ducks, geese & swans.

Restoration measures were not taken for the habitat of none of the species, whereas measures to increase the population size or improve the dynamics concern mostly kingfishers, rollers, bee-eaters & hoopoe, owls and storks & flamingo (100% for each, EU mean 37.5%, 15.04% and 25.6%, respectively). Measures to expand the current range were not taken for any of the species.

For further details see the online statistics here.

2.5 Favourable reference values

The operators are used for reporting on favourable reference values when information on actual values is limited or missing completely. Operators are used as a rough estimation and highlight an issue with data gathering and monitoring. Apart from the 'unknown' the operator 'much bigger than (>>)' is particularly problematic as there is no indication of its upper values.

Habitats

With reporting the favourable reference range for HR habitats, ≈ was reported in a high proportion for most habitat groups (the exception being dune habitats and a small proportion of reporting for bogs, mires & fens (11.1%). Where unknown (x) was reported, this is seen in the highest proportion with freshwater habitats (31.6%), coastal habitats (23.1%) and bogs, mires & fens habitats (22.2%). > was reported in the highest proportion for dune habitats (50%) and bogs, mires & fens habitats also report the use of >> operator (55.6%).

All operators were used for reporting the favourable reference area parameter across the habitat groups. Where unknown (x) was used, the highest proportion is reported in coastal habitat (53.8%) and rocky habitats (45.5%). >> is mainly used in dune habitats (100%) and bogs, mires and fens habitats (66.7%) and > is reported for 23.1% coastal habitats, 21.1% of freshwater habitats and 20% of scrub habitats. Sclerophyllous scrubs report either the < operator (75%) or ≈ operator (25%).

The is one forest habitat for which the < operator is used when the overall conclusion of the conservation status is U1 (91D0 bog woodland). This operator cannot be used for a unfavourable assessment.

Non-bird species

The favourable reference range was mostly unknown (x) or assessed as ≈, only in arthropods, molluscs and mammals was > reported in a higher proportion. 100% of non-vascular plants reported unknown (x), followed by amphibians (87.3%), molluscs (87.5% and other invertebrates (83.3%) – although reporting unknown is high for all groups (the exception being mammals). Where >> is used, this is mainly mammals (13.8%). > is reported for 19.6% of mammals. 3 mammal reports have missing information for range parameters

For the favourable reference population, the ≈ is not frequently reported (25.4% for fish and also in a small proportion for mammals and vascular plants. There is a high proportion of unknown (x) for all groups with mammals being the exception (14.3%). For other groups this ranges from 61.2% in fish to 100% for other invertebrates, and molluscs. >> is most frequently used for mammals when reporting the favourable reference population (56.3%) and > is used most frequently with mammals (15.2%), as with the favourable reference range. 1amphibian and 4 mammals reports have missing information for population parameters.

For further details see the online statistics here.

2.6 Comparison of habitat condition area with total habitat area

For the coherence of areas reported it is expected that the combined habitat condition area (as reported under structure and functions) and the total habitat area would be the same.

For all habitat groups in HR there is a high percentage of equality between the areas reported for habitat condition and area covered by the habitat. The group with the lowest proportion of equality is heath and scrub (60%, EU average 59.8%). The remaining heath & scrub habitats report a lower habitat condition than the area covered by the habitat (40%, EU average 22.6%).

For further details see the online statistics here.

3 Further gaps in habitats

3.1 Analysis of Land area, sealed area, Article 17 Annex I terrestrial habitat type area and Natura 2000 habitat area

The combined Natura 2000 habitat area should not exceed the total Annex I habitat area. None of them should be bigger than the land area or land sealed area.

25% of Annex I habitat area reported by HR is covered by the Natura 2000 network. Overall, Annex I habitat area covers 46% of the land area (minus the sealed area).

For further details see the online statistics here.