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

IE

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 IE

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:

The majority of habitats reported by IE in Article 17 could be compared with data from Natura 2000 end_2018 database (96.7%).

While the majority are reported with a Natura 2000 database area of less than or equal to the Article 17 habitat area (55.2%, EU average 74.9%) the next largest proportion of habitats are reported with a Natura 2000 are of more than 2 times greater than the Article 17 habitat area (27.6%, EU average 9%). 13.8% area also reported with a Natura 2000 habitat area of 1 to 1.5 times that of Article 17 (EU average 13.1%).

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

For the comparison between the Natura 2000 area reported in Article 17 and the Natura 2000 end_2018 database, the majority of habitats area reported with an area of more than 2 times greater than the Natura 2000 area reported in Article 17 (38%, EU average 14.3%). This is followed by the Natura 2000 database area reported as less than the Natura 2000 area reported in Article 17 (34.5%, EU average 46.2%) and 1 to 1.5 times greater than the Natura 2000 area reported in Article 17 (20.7%, EU average 32.7%). A small proportion (6.9%) is reported as 1.5 to 2 times greater than the Article 17 are for Natura 2000.

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:

Only 18,08 % of all species reported in IE were compared between the Article 17 database and the Natura 2000 database. The highest comparable proportion among Member States does not exceed 34.2%.

All comparable records have a species population value in Natura 2000 smaller than or equal with that reported in Article 17, which is the case only in 3 Member States, distant from EU average of 80.5%.

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

The comparison of Natura 2000 species populations reported in Article 17 and Natura 2000 database reveals the same proportion of comparable values: 18,08%.

All records of this comparable proportion reported a population in Natura 2000 smaller than that in Article 17, highly above 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 that 52% 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, 31.3% report a larger population in Natura 2000 than the national population reported in Article 12, which is higher than the EU average of 20%.

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: 37.3%.

Of this comparable proportion, any of the species reported an equal population in Natura 2000 and Art 12, lower than the EU average of 3.2%. 66.7% of species reported a larger population in Natura 2000 compared with the Natura 2000 population in the Article 12 report, above the EU average of 40.5%. Where the population was reported as greater, this was mostly as 1 to 1.5 times greater than Article 12 (28.3%, EU average 18.1%). 33.3% 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

Overall, IE reports a low occurrence of missing mandatory information across all habitat groups. Where this is seen it is a small proportion of parameters per group: bogs, mires & fens (3.8%, EU average 9.7%), coastal habitats (0.6%, EU average 12%), freshwater habitats (1.1%, EU average 12.3%) and rocky habitats (3.1%).

The habitat groups with the highest reporting of expert opinion are rocky habitats (32%, EU average 26.2%), bogs, mires & fens (29.7%, EU average 22.3%) and freshwater habitats (25%, EU average 27.8%). Insufficient data is only reported with rocky habitats (3.6%, EU average 16.6%) whereas the parameters for sclerophyllous scrub habitats are based on a complete survey (EU average 25.5%).

Non-bird species

There is a high proportion of missing mandatory information in reptiles (66.7%, EU average 18.9%) with 100% missing values for favourable reference values, trends and status too. (14 parameters). .

The reptile species group has the largest reporting of expert opinion (33.3%, EU average 27.5%) as well as insufficient information (66.7%, EU average 26.9%).

Bird species

The bird groups owls, grebes and loons or divers are those which report the highest proportion of missing information across all mandatory fields in the reporting format (54.2%, 30.5% and 30% of all fields, respectively). This is higher than the respective EU averages of 16.3%, 14.1% and 22.7%.

The bird groups with primarily missing mandatory information for wintering species (trend information) are the loons or divers, owls, cranes, rails, gallinules & coots, grebes, hawks & eagles (100% missing for short-term and long-term trend for all except short-term trend for cranes, rails, gallinules and hawks and eagles). The groups with missing information on hunting bags are ducks, geese & swans, waders, gulls & auks, pheasants, partridges & grouse (100% each). A high proportion of missing information on the short-term trend within the SPA network is seen with species groups owls, petrels, storm-petrels & shearwaters, loons or divers (all above 75%), and to a lesser extent grebes. Several species groups reported the long-term trend in breeding population as field largely missing or unknown (cranes, rails, gallinules & coots, cuckoos, falcons, grebes, owls, passerines, petrels, storm-petrels & shearwaters, pheasants, partridges & grouse, pigeons & doves and swifts & nightjars (all > 50% missing information, most are 100% missing) but also seen with ducks, geese & swans, , hawks & eagles. The short-term breeding trend is also missing for most of the above groups but is seen as 100% missing with owls.

The highest proportion of reporting expert opinion as the method used is with pheasants, partridges and grouse (40%, EU average 18%). Insufficient data is reported for 53% EU average 43%) of owls and 48% of loons or divers (EU average 76%).

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

Complete survey or partial estimate are the most reported methods used for assessing the area parameter across all habitat groups. Where expert opinion is reported, this is with 2 freshwater habitats (25%, EU average 18.3%) and 1 rocky habitat (14.3%, EU average 18.9%). Absent data is reported for 1 rocky habitat (14.3%, EU average 6.2%).

A similar pattern is seen for the structure and function parameter. Where expert opinion is reported, this is seen with 3 bogs, mires and fens habitats (37.5%, EU average 24%), 3 freshwater habitats (37.5%, EU average 19%) and 3 rocky habitats (42.9%, EU average 22%).

Non-bird species – methods used

The complete survey is used quite frequently for the population and habitat parameter; maximum reaching (100%, EU average 29.1%) for habitat of vascular plant species. Partial estimate is used with similar frequency for the population parameter and habitat of the species (maximum value habitat of amphibians and arthropods 100%, EU average 48% and 41%). Expert opinion was used in a low number of cases, e.g. for the population of a sole reptile species, which is also in habitat the only case of absent data.

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

No issues on reporting the field change and reason for change for habitats in IE are seen.

Non-bird species

For the overwhelming majority of reports of all species groups, there are no issues regarding reasons of change. Only in three plant species (2 non-vascular, 1 vascular) were no reasons for change in population and range filled in. Which is in percentage of reports (50%) highly above EU average 15.7% and 12.3%).

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

The majority of measures were needed and taken. Where measures needed but none yet taken is reported as the status of the measures, this is seen mostly with freshwater habitat reports (100%, EU average 26.8%) and bog, mires and fens habitat reports (50%, EU average 21.7%). There is also a small proportion of reporting the status of measures needed but cannot be identified: dune habitats (12.5%, EU average 2.7%) and coastal habitats (7.1%, EU average 1%).

Where measures are needed and have been taken, the main purpose to restore structure and functions is seen with 50% of bogs, mires and fens habitats (EU average 25.5%) and 37.5% of coastal habitats (EU average 34%).

Non-bird species

No species is in the category where measures are needed but cannot be identified. The groups with the highest percentage of measures needed but not yet taken are vascular plants (100%, EU average 27,5%) and molluscs (60%, EU average34.8%).

The majority of measures intend to maintain the current status (7 records of nonvascular plants, mammals, arthropods). The restoration of the habitat for the species is reported only for molluscs. Measures were taken also to expand the current range only in fish. One fish and one mammal species are in need of increasing the population.

Bird species

Breeding: For the majority of breeding species reported in IE measures were reported as needed but not taken, the second most reported category was needed and taken. Only 1 breeding species was reported in the category of conservation measures needed but unknown, belonging to the group petrels, storm-petrels & shearwaters.

Wintering: For the majority of wintering species in IE it was reported that conservation measures were needed but not taken.

Passage: For all species reported in IE it was indicated that measures were needed but not taken.

Restoration measures taken for the habitat of the species were not taken for any of the species, whereas measures to increase the population size or improve the dynamics concern only cranes, rails, gallinules & coots, hawks & eagles and waders, gulls & auks (100% for each, EU average 19.7%, 33.5% and 21%, 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

The actual value is provided in most cases for the range parameter. Aside from this, ≈ is used for 4 bogs, mires and fens habitats (50%) and 2 forest habitats (50%).

The use of operators is more varied for the area parameter. While the actual value is used for all forest (4 habitats), 75% of freshwater habitats (6 habitats) and 50% of coastal habitats (7 habitats), > is used for 50% of bogs, mires & fens (4 habitats), 50% of dune habitats (4 habitats) and 66.7% of heath & scrub habitats (66.7%). >> is the main operator used for grasslands (66.7%, 4 habitats). The highest frequency of ≈ is reported for 1 sclerophyllous scrub habitat, 57.1% rocky habitat (4) and 50% dune habitats (4).

Non-bird species

IE used operators (incl. ≈) only in a small proportion of cases. > was never used for either range or population. Favourable reference range of all invertebrates and amphibians were set completely as actual values. Favourable reference population of all amphibians and molluscs was set with actual value.

The operators were most frequently used among fish species (>> 28.6%, x 14.1%, ≈ 28.6%). Unknown (x) was also reported among mammals and reptiles (1 habitat in each group).

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 the habitat groups dune habitats, forests, heath & scrub and rocky habitats, all habitat condition areas were rerouted as equal to the area covered by the habitat.

The only habitat group that did not report an equal habitat condition area to the area covered by the habitat is sclerophyllous scrub - these habitats reported a higher habitat condition area (EU average 21.2%).

The bogs, mires & fens habitat group reported 12.5% of habitat condition area as higher than the area covered by the habitat (EU average 20.7%) and 37.5% as lower than the area covered by the habitat (EU average 28.5%).

Freshwater habitats (12.5%, EU average 29.1%) and grasslands (33.3%, EU average 29%) both reported a proportion of the habitat condition area as lower than the area covered by the habitat.

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.

Just over 50% of Annex I habitat area reported in IR is covered by the Natura 2000 network. 21% of the land area (minus the sealed area) is covered by Annex I habitat.

For further details see the online statistics here.