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

EE

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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)
  preparation of the Union Lists (sites designated under the Habitats Directive by biogeographical region)
- quantification of restoration needs and prioritization in the PAFs

[1] The list is not exclusive

- 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 EE

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 habitat types reported by EE could be compared with information provided under Natura 2000). Of these, 71.7% (EU average 74.9%) reported a Natura 2000 habitat area of less than or equal to the Article 17 habitat area. 20% (EU average 13.1%) reported a Natura 2000 area of 1 to 1.5 times greater than Article 17. The remaining 8% reported either 1.5 to 2 times a larger Natura 2000 area ot > 2 times larger Natura 2000 area.

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

For the comparison of the Natura 2000 habitat area reported in Article 17 and that from the Natura 2000 database, the majority of habitats reported a greater area in the Natura 2000 database (1 to 1.5 times greater 61.7%, EU average 32.7%), followed by a smaller area in the Natura 2000 database (26.7%). As with the analysis above, the remaining 8% reported either 1.5 to 2 times a larger Natura 2000 area to > 2 times a larger Natura 2000 area. 3.3% reported areas that are equal.

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:

19.1% of all species reported in EE 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, 83.3% 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 16.7% of species reported a Natura 2000 population greater than the Article 17 population, which slightly lower 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, 19.1% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 25% 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 75% 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 that only 38% 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, 22.1% 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, an even lower proportion of species could be compared: 23.7%.

Of this comparable proportion, none of the species reported an equal population in Natura 2000 and Art 12, similar to the EU average of 3.2%. 32.2% of species reported a larger population in Natura 2000 compared with the Natura 2000 population in the Article 12 report, which is below the EU average of 40.5%, whereas 67.8% report a lower population in Natura 2000 than in Article 12 report, which is higher 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 highest proportion of missing mandatory information in EE habitats is seen with the groups bogs mires & fens (7.6%, EU average 9.7%), followed by grasslands (4.3%, EU average 9.8%) and heaths & scrub (4.3%, EU average 10.6%).

The habitat group heath & scrubs is the only group which shows nor mandatory information provided for a parameter (future prospects of structure and functions). The habitat group sclerophyllous scrub is the only group reporting all mandatory information requested.

Where expert opinion is reported as a method used this is seen mostly with bogs, mires & fens (34.4%, EU average 22.3%), sclerophyllous scrubs (37.5%, EU average 29.7%) and grasslands (25%, EU average 24.4%). Insufficient data is reported minimally for 3 groups only: bogs, mires & fens (3.1%, EU average 20.5%), coastal habitats (1%, EU average 15.4%) and grasslands (3.1%, EU average 16.2%).

Expert opinion or insufficient data are not reported as methods used for habitat groups heath & scrub, forest habitats and dune habitats.

Non-bird species

The majority of missing mandatory information for any species group occurred with molluscs (31.7% overall mandatory fields missing information). This is higher than the EU average of 19.7% for molluscs. Within molluscs, rather than completely missing information for a parameter or a high proportion of missing information for several parameters, the missing information is spread out across most parameters with up to 60% reported for some (e.g. future prospects of population and habitat for the species, short-term population trend, trend in habitat for the species, status of future prospects and sufficiency of unoccupied habitat).

Where some parameters were missing 100% of information, this is seen with mammals (hunting bags 100%, EU average 45%) and other invertebrates (short-term population trend, EU average 65.1%) and sufficiency of unoccupied habitat (EU average 7.9%).

Reptiles and amphibians had a very low proportion of missing obligatory values.

The highest proportion of expert opinion as method is in population size in molluscs (60%), the extrapolation is the most frequent method used. Insufficient data is reported as 27.5% for molluscs (EU average 26.3%).

Bird species

The bird group herons, pelicans, ibises & spoonbills report the highest proportion of missing information across all mandatory fields in the reporting format (9.1%). This is lower than the respective EU average of 14.2%.

One bird group with primarily missing mandatory information for wintering species (trend information) is cranes, rails, gallinules & coots (100% missing information for long-term trend). The group with the majority missing information on hunting bags is ducks, geese and swans (6.3%, EU average 20.6%). A high proportion of missing information on the short-term trend within the SPA network is seen with species groups grebes, kingfishers, rollers, bee-eaters & hoopoe and swifts & nightjars (all above 50% missing). There is also missing information reported to a lesser degree with the groups passerines and waders, gulls & auks. Where information was missing on the short-term and long-term trend in breeding population, this was seen with pheasants, partridges & grouse, passerines, waders, gulls and auks, and owls.

Expert opinion was reported in the highest proportion for swifts and nightjars (50%, EU average 48%). Where insufficient data is reported, this is seen in the highest proportion with herons, pelicans, ibises and spoonbills (9%, EU average 37%).

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 frequent methods used for assessing the area parameter across all EE habitat groups. Expert opinion is reported for a small proportion of bogs, mires & fens habitats (12.5%, EU average 11.7%) and for coastal habitats (7.7%, EU average 12.7%).

Structure and function is also assessed mainly but complete survey/partial estimate for all habitat groups. Expert opinion is reported for 3 coastal habitats (23.1%, EU average 18.8%) as well as 1 habitat each for freshwater and grasslands. Absent data is reported for 1 bogs, mires and gens habitat.

Non-bird species – methods used

Complete survey and partial estimate are equally used for the population parameter. The complete survey is used for the population parameter; frequently (100%, EU average 44.9%) for other invertebrates and reptiles. Partial estimate is the most frequent method used for the population parameter across all other species groups. Expert opinion is most frequently used among molluscs (60%). Partial estimate is the most used method fr the habitat of the species.

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

While there are no issues seen with EE lack of completing the field change and reason for change for habitat assessments, there are issues seen with reporting more than 1 reason for change in cases where a main reason is not selected (6 cases). This is seen for the parameter area covered by the habitat for both grasslands and sclerophyllous scrubs, and for the parameters area covered by the habitat and range for coastal habitats, area covered by the habitat and overall conservation status for bogs, mores & fens.

There is one bogs, mires & fens habitat (7120) where the main reason for change selected is not consistent with the reasons ticked for this field (better knowledge was chosen as the reason but this was not one of the choices ticked).

Where a main reason for change in the overall conservation status was not provided and here multiple reasons were selected, this is seen with another bogs, mores & fens habitat 7230.

Non-bird species

The parameter overall trend in conservation status showed the highest proportion of missing the main reason for change of all parameters (40% of 10 cases, EU average 39.9%).

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

For the status of the measures, EE report that the majority of measures for all habitats have been taken.

The majority of the measures taken were with the purpose of maintaining the current range. 3 bog, mire & fen habitats report the restoration of structure and functions as the main purpose (50%, EU average 25.5%). 1 coastal habitat (7.7%, EU average 4.9%) reported an increase in surface area as the main purpose of the measures.

Non-bird species

For EE species, most measures were needed and taken. The group with the highest proportion of reporting measures not needed is mammals (78.9%). For most of the species groups, measures are needed and have been taken.

Majority of measures intend to maintain the current status (100% for amphibians, molluscs, non-vascular plants and reptiles except fish - 50%, mammals – 66.7%, arthropods - 60% and vascular plant 92.3%).

Bird species

Breeding: For the majority of breeding species reported in EE measures were reported as not needed. None of the breeding species was reported in the category of conservation measures needed but not identified.

Wintering: For all of wintering species in EE it was econd most reported measure was not needed.

Passage: For most of the species reported in EE it was indicated that measures were not needed.

Restoration measures taken for the habitat of the species seem to concern only ducks, geese & swans and waders gulls & awks (100% of the total number of records on the main purpose of measures that have been applied for each species, EU mean 2.8% and 11.1%), whereas measures to increase the population size as well as measures to expand the current range were not taken for none 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

Unknown (x) is only reported for 2 bogs, mires & fens habitats for the range parameter in EE. All other habitats report ≈ for range.

This is also reflected with the area parameter although > is reported for 1 bogs, mires and fens habitat as well.

Non-bird species

EE used mostly operators for the non-bird species, only in 9 species was the actual value given (2 amphibian, 1 arthropod, 3 mammals, 3 non-vascular plants), nevertheless the operator ≈ is in fact also an actual favourable reference value.

The favourable reference range was mostly assessed as approximately equal, only in reptiles species was the proportion of favourable reference range > higher (100%). Only 5 species (1 arthropod, 2 mammals and 2 molluscs) indicated unknown (x) FRR.

For most species groups, the favourable reference population was mostly assessed as ≈.

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.

Overall for EE there was a high proportion for habitat groups in general that reported an equal area between habitat condition and area covered by the habitat.

All heath & scrub, rocky habitats, forest and freshwater habitats reported by EE report a habitat condition area as equal to the area covered by the habitat. This is followed closely by dune habitats (87.5%, EU average 51.4%), coastal habitats (84.6%, EU average 58%) and grassland habitats (75%, EU average 52%). The lowest proportion of equal area reporting between habitat groups is with bogs, mires & fens (25%, EU average 49%). This habitat group also reports 37.5% with both a higher or lower habitat condition area (EU averages 20.3% and 28.5%, respectively).

All sclerophyllous scrub habitats report a habitat condition area as higher than the area covered by the habitat (EU average 21.2%). The only habitat group (apart from bogs, mires & fens mentioned above) that report a lower habitat condition area is grasslands (12.5%, EU average 29%).

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.

EE reports 83% of Annex I habitat area reported as covered by the Natura 2000 Network. The Annex I habitat area is 17% of the land area (minus sealed area).

For further details see the online statistics here.