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

DE

Table of contents

1. Coherence check of nature reporting data with data reported under Natura 2000
   - *1.1 Habitats: comparison of Article 17 and Natura 2000 habitat areas*
   - *1.2 Non-bird species: comparison of Article 17 and Natura 2000 species population*
   - *1.3 Bird species: comparison of Article 12 and Natura 2000 species population*
2. Analysis of specific fields in Article 12 & Article 17 reporting formats
   - *2.1 Data quality and completeness*
   - *2.2 Conclusion of the parameters*
   - *2.3 Use of the 'change and reason for change' field*
   - *2.4 Conservation measures*
   - *2.5 Favourable reference values*
   - *2.6 Comparison of habitat condition area with total habitat area*
3. Further analysis of habitats
   - *3.1 Analysis of land area, sealed area, Article 17 terrestrial Annex I habitat area & Natura 2000 habitat area*

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 DE

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 reports from DE could be compared between Article 17 and the Natura 2000 database based on linking habitat code, habitat area and biogeographic/marine region.

Of these 92 reports, 72.8% (EU average 74.9%) report an Article 17 habitat area as equal to or greater than the habitat area reported in the Natura 2000 database. 20.7% (EU average 13.1%) of the reports had a habitat area of 1 to 1.5 times greater in the Natura 2000 database than in the Article 17 report. The remaining 2 categories: Natura 2000 area 1.5 - 2 times greater, and > 2 times greater than the Article 17 area, account for 6.5% of habitat reports.

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

All habitats reported by DE could also be compared based on the Natura 2000 area reported under Article 17 and the Natura 2000 database end_2018.

The majority of the habitats were reported in the 2 groups: where the Natura 2000 database area was 1 to 1.5 times greater than the Natura 2000 area reported in Article 17 (47.8%, EU average 32.7%) and where the area reported was less than the Natura 2000 area in Article 17 (37%, EU average 46.2%).

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:

15.7% of all species reported in AT 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, 78.3% 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 21.7% 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, 17% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 46.2% of species report a population in Natura 2000 greater than in Article 17, percentage that is higher than the EU mean of 32.5%. The remaining 53.9% 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 27% 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, 17.4% report a larger population in Natura 2000 than the national population reported in Article 12, which is lower 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: 12.4%.

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%. 25.4% 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 44.6% 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

Sclerophyllous scrubs is the habitat group with the most missing mandatory information in DE, although still below the EU average (7.4%, EU average 9.9%).

The most missing mandatory information is seen with the parameter short-term trend inside the network for coastal habitats (40%, EU average 36.8%). Sclerophyllous scrubs show the next highest proportion of missing information for parameters favourable reference area, future prospects of area, short-term trend of habitat area in good condition, short-term trend of area covered by the habitat and status of habitat area (33.3% for all).

With regards the method used for the parameters, expert opinion was most frequently used with the forest group (31.9%, EU average 22.4%) and the sclerophyllous scrubs (30.4%, EU average 29.7%). Where insufficient data was the method chosen, this is seen mostly with coastal habitats (12.2%, EU average 15.4%). Across all habitat groups, either complete survey or extrapolation are reported more frequently as a method than expert opinion or insufficient data except for sclerophyllous scrubs and forests.

Non-bird species

The majority of missing mandatory information for any species group is seen with other invertebrates (77%, EU average 33.4%), the other species groups do not exceed 24.9% (non-vascular plants EU average 22.1%). Within the other invertebrates group, there is 100% missing information for several fields relating to future prospects, overall conservation status and trend, short-term trends and status of parameters.

Across all species groups, to some degree there is a level of missing mandatory information across the majority of the parameters. Other fields with 100% missing information are seen with hunting bags (mammals).

The largest reporting of expert opinion as a method used is seen with fish (36.7%, EU average 22.4%) and the largest reporting of insufficient data is seen with other invertebrates (77%, EU average 46.8%)

Bird species

The bird groups herons, pelicans, ibises & spoonbills and cranes, rails, gallinules & coots are those which report the highest proportion of missing information across all mandatory fields in the reporting

format (21.2% and 20% of all fields, respectively). This is higher than the respective EU averages of 14.2 and 17.1%.

A bird group with primarily missing mandatory information for wintering species (trend information) are the loons or divers. The group with the biggest percentage of missing information on hunting bags are ducks, geese & swans (33.3%, EU average 20.6%). A high proportion of missing information (>50%) on the short-term trend within the SPA network is seen with species groups cranes, rails, falcons, gannets & cormorants, herons, pelicans, ibises & spoonbills, owls and storks & flamingo. There is also missing information on this field reported to a lesser extent with the groups gallinules & coots, grebes, kingfishers, rollers, bee-eaters & hoopoe, loons or divers, waders, gulls & auks, and woodpeckers and pheasants, partridges & grouse. Several species groups reported the long-term trend in breeding population as field missing or unknown (e.g. cranes, rails, gallinules & coots falcons, kingfishers, rollers, bee-eaters & hoopoe, pheasants, partridges & grouse and woodpeckers) although in proportions not exceeding 33%. A similar pattern is also seen for the short-term trend

Expert opinion was reported in the highest proportion for the group swifts and nightjars (90%, EU average 48%), hawks and eagles (84%, EU average 26%) and owls (88%, EU average 36%) (although there is a high proportion reporting for other groups). Those indicated with 'insufficient data' in the methods field are falcons (21.4%, EU average 49%).

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

For the area parameter, either complete survey or partial estimate are the main methods reported across all habitat groups. Where expert opinion was used this was with forests (13.9%), grasslands (6.7%) and rocky habitats (6.3%). Only 1 forest habitat reported insufficient or no data.

For the structure and function parameters, expert opinion and insufficient/no data are more frequently reported. The highest proportion of expert opinion is seen with coastal habitats (36%) forests (30.6%). The highest proportion of insufficient data is seen with coastal habitats (24%).

In general, there is more frequent reporting of expert opinion/insufficient data for the structure and function parameter. The majority of coastal habitats report these 2 methods for the same parameter.

Non-bird species – methods used

Expert opinion and partial estimate are the most frequent methods used for the population parameter across all other species groups. Sometimes there was absent data, for example for other invertebrates (33%). Expert opinion was the most used method for the parameter 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

There are no issues seen with DE reporting the field change and reason for change for the habitat assessments i.e. where no main reason was given, no inconsistencies seen with reporting the main reason for change for the parameter overall change in conservation status and the main reason for change reported for all habitats is consistent with the reasons chosen for this field.

Non-bird species

There were only one case that a reason was not filled in for a change.

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 habitats in DE report that measures are needed and taken. Where measures are needed but are not yet taken, the highest proportion of reporting is seen with sclerophyllous scrub (33.3%, EU average 15.6%) rocky habitats (18.8%, EU average 17.1%) and freshwater habitats (16.7%, EU average 26.8%). The only case where measures were needed but could not be identified is seen with 1 grassland habitat (3.3%, EU average 1%).

For the majority of habitats/habitat groups, the main purpose of the measures taken was to maintain the current range of the habitat. Where the restoration of structure and functions is the main reason given, the highest proportion is seen with freshwater habitats (37.5%, EU average 27.5%) and grasslands (33.3%, EU average 11.4%).

Non-bird species

For DE species, the group with the highest proportion of reporting measures are 'needed and taken'. For all of the species groups, there are species identified where measures are not needed. For species, the group with the highest proportion of reporting measures not needed is reptiles (93,3%, EU average 57%).

The main purpose of the measures taken is to maintain the current status. However, there are measures to inclrease the population size and /or improve dynamic mostly for molluscs (30%) and fish (28%).

Bird species

Breeding: For the majority of breeding species reported in DE, measures were reported as needed and taken, the second most reported category was needed taken and not taken. Only 2 breeding species were reported in the category of conservation measures needed but cannot be identified, belonging to the groups herons, pelicans, ibises & spoonbills and pheasants, partridges & grouse.

Wintering: For the majority of wintering species in DE it was reported that conservation measures were needed and taken.

Passage: For the majority of species reported in DE it was indicated that measures were needed and taken.

Restoration measures taken for the habitat of the species seem to concern herons, pelicans, ibises & spoonbills, passerines and waders, gulls (14.3%, 6.3% and 2.9% of the total number of records on the main purpose of measures that have been applied, EU means 14.7%, 15.2% and 11.1%), whereas

measures to increase the population size or improve the dynamics concern mostly bustards, cranes, rails, gallinules & coots and swifts & nightjars (100% for each, EU mean 53.3%, 19.7% and 23.1% respectively). 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) was very rarely reported for the range parameter for DE habitats, this is only seen with 1 grassland and 1 forest habitat. There is a slightly higher level of reporting of >> (ranging from 2.8% for forests to 10% for freshwater habitats and heath & scrubs) and for > (8% for coastal habitats to 31.8% for bogs, mires & fens). The majority of reports for all habitat groups report either the actual value or ≈.

Unknown (x) was very rarely reported for the favourable reference area, this is seen with 1 grassland and 3 forest habitats in addition to a coastal habitat, sclerophyllous scrub and a freshwater habitat. The operator >> is reported most with grassland habitats (20%) but also for all habitat groups (except sclerophyllous scrubs). Where > is reported for favourable reference area, this is seen most frequently with grasslands (40%), bogs, mires & fens (36.4%) and sclerophyllous scrub (33.3%, although only for 1 habitat in this group).

The grasslands and forests habitat groups both report unknown (x) for the 2 parameters favourable reference range and favourable reference area, although in small proportions.

Non-bird species

In almost all groups, all operators were used in the population and range parameters. 2 vascular plants (4.4%), 1 amphibian (2.6%), 2 arthropods (2.7%) and 1 molluscs (5.3%) have missing information for range parameters and one amphibian (2.6%), two arthropods (2.7%), one molluscs (5.3%) and two vascular plants (4.4%) have missing information (i.e. no value entered in the report) for population parameters. Other invertebrates (100%, 3 species) report unknown for both range and population, although all species group report a certain proportion of unknown (x). Please refer to dashboard.

There is one case of where < is used for a non-vascular plant species but where the conclusion of the assessment is unknown (1400 *Leucobryum glaucum*).

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 the habitat groups in DE, the percentage of equal area reporting between habitat condition and the area covered by the habitat range from 10% (EU average 60%) for heaths & scrub to 44% (EU average 55%) for rocky habitats.

The habitat group sclerophyllous scrubs only reported a habitat condition area greater than the area covered by the habitat (67%, EU average 21%) and a lower area (33%, EU average 21%).

The highest proportion of reporting a higher habitat condition area is seen with the sclerophyllous scrub and the highest proportion seen for reporting a lower habitat condition area is with the heath & scrub habitat group (70%, EU average 23%).

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.

Around 62% of Annex I habitat area reported by DE is covered by the Natura 2000 network. Overall, Annex I habitat area comprises just over 11% of total land area (minus the sealed area).

For further details see the online statistics here.