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

DK

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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 DK

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 DK could be compared with information in the Natura 2000 database based on linking the parameters habitat code, biogeographical/marine region and providing a habitat area.

88% of these reports have a Natura 2000 habitat area of equal to or less than the Article 17 habitat area (EU average 74.9%). The remaining reports have a Natura 2000 area in the Natura 2000 database as 1 to 1.5 times greater than the Article 17 area (8.5%, EU average 13.1%) or greater than 2 times more than national area reported in the Article 17 report (3.4%, EU average 9%).

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

Where comparing the area reported for Natura 2000 in Article 17 with the data from the Natura 2000 database end_2018, it is seen that the majority of habitats are reported in 2 categories: with a Natura 2000 database are of less than that reported in the Article 17 report (59.3, EU average 18.2%), and with a Natura 2000 database area of 1 to 1.5 times greater that reported in Article 17 (28.8%, EU average 28.8%). The remaining habitats are reported in the categories of 1.5 - 2 times greater and more than 2 times greater habitat area than reported in Article 17.

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:

10.9% of all species reported in DK 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, 40% reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17 (EU average is 80.5%). The remaining 60% of species reported a Natura 2000 population greater than the Article 17 population, the EU average is 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, 8,9% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 0% 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 100% 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 18% 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, 7.4% 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: 11%.

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%. 31.2% 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 68.7% report a lower population in Natura 2000 than in Article 12 report, which is above 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 for reporting parameters is with habitat groups rocky habitats (24.6%, EU average 10.9%) and freshwater habitats (18.1%, EU average 12.3%) in DK.

Within the rocky habitat group, no mandatory information is provided on the status of structure and functions, future prospects of structure and functions, the overall trend in conservation status or the short-term trend of habitat area in good condition. For freshwater habitats, no mandatory information is provided for the short-term trend inside the network or the short-term trend of area covered by the habitat. There is also a high proportion of missing information for overall trend on conservation status (85.7%, EU average 17.4%) and short-term trend of habitat area in good condition (85.7%, EU average 34.5%). The only group reporting all mandatory information is heaths & scrub.

The highest proportion of reporting expert opinion as the method used is seen with freshwater habitats (31.4%, EU average 27.8%) followed by coastal habitats (30.6%, EU average 23.4%). The highest proportion of reporting insufficient data is seen with rocky habitats (37.5%, EU average 16.6%), followed by sclerophyllous scrubs (26.7%, EU average 15.9%).

Non-bird species

The majority of missing mandatory information for any species group occurred with other invertebrates (95.2% of mandatory fields missing information). This is higher than the EU average of 33.4% for other invertebrates and 100% of information is missing for all parameters except sufficiency of unoccupied habitat. The next highest proportion of missing information is seen with molluscs (41.8%, EU average 19.7%).

Population size is identified as a parameter with a high proportion of missing mandatory information across all species groups (all above 54.5%, which is seen for vascular plants, EU average 5.6%).

While there is no information missing on the sufficiency of occupied habitat for other invertebrates, for other species groups this is reported missing in high proportions: fish (64.7%, EU average 13%), mammals (40.9%, EU average 21.2%), molluscs (75%, EU average 27.8%) and reptiles (100%, EU average 19.6%).

The highest proportion of expert opinion as method is in population size in mammals (95.2%, EU average 26.8%), Insufficient data in other invertebrates is reported as100% (EU average 46.8%).,.

Bird species

The bird group Kingfishers, Rollers, Bee-eaters & Hoopoe is which report the highest proportion of missing information across all mandatory fields in the reporting format (45% of all fields). This is higher than the respective EU average of 14%.

The bird groups reporting missing mandatory information for wintering species (trend information) are the waders, gulls & auks, falcons, loons or divers, gannets & cormorants and grebes. Missing information is also reported to a lesser extent with other groups. None of the groups have missing information on hunting bags. A high proportion of missing information on the short-term trend within the SPA network is seen with species of the groups cranes, rails, gallinules & coots, falcons, grebes, hawks & eagles, herons, pelicans, ibises & spoonbills, kingfishers, rollers, bee-eaters & hoopoe, owls, passerines, pheasants, partridges & grouse, storks & flamingos, swifts & nightjars and woodpeckers.

Where expert opinion is reported in the highest proportion this is seen with kingfishers, rollers, bee-eaters and hoopoe (36%, EU average 48%). Where the method indicated is 'insufficient data', this highest proportion is seen with storks and flamingos (20%, 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 – methods used

For the area parameter, partial estimate is the main method used for assessing across all habitat groups. Where expert opinion is used, this is with rocky habitats (33.3%, EU average 18.9%) and coastal habitats (26.9%, EU average 12.7%).

Complete survey is the main method used for the structure and function parameter. Expert opinion was used for 9 coastal habitats (34.6%, EU average 18.8%) while 100% of rocky habitats had insufficient or no data for this parameter (EU average 19.9%).

In general, coastal and rocky habitats report a higher proportion of expert opinion/no data for both parameters.

Non-bird species – methods used

The majority of the assessments for the species population are based on absent data. The species group with the highest share of absent data and expert opinion for the population parameter is other invertebrates (100%) and mammals (75%). Expert opinion is the most used method for 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

There are issues with several parameters for several habitat groups where a main reason for change cannot be determined (196 cases). This is seen for the 2 parameters of overall conservation status and overall trend in conservation status for 9 habitat groups. This amounts to 98 assessments for DK (or 50% of assessments in total) and is seen mostly with dune habitats.

Where the main reason for change cannot be reported due to more than 1 reason being selected (3 cases), this is seen with the parameter area covered by the habitat for freshwater habitats and both the overall conservation status and overall trend in conservation status for coastal habitats.

There is one case where the main reason for change is not coherent with the reasons selected for coastal habitat 1110 (i.e. the main reason given was 'method' whereas the 2 reasons selected from the list were genuine change and better knowledge).

Non-bird species

The parameter overall trend in conservation status showed the highest proportion of missing the main reason for change of all parameters (39.9% of the 253 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

DK report that measures are either needed and taken (the majority of habitats) or are not needed.

Where needed and taken, the vast majority are for the purpose of restoration of structure and functions. The main purpose for 1 dune habitat is to maintain the current range.

Non-bird species

For DK species, the group with the highest proportion of reporting measures not needed is reptiles (100%), reptiles (75%) and mammals (67.5%). For most of the species groups, measures are needed and have been taken.

Majority of measures intend to maintain the current status (100% for arthropods, non-vascular plants and vascular plant).

Bird species

Breeding: For the majority of breeding species reported in DK, measures were reported as needed and taken, the second most reported category was not needed. Only 1 breeding species was reported in the category of conservation measures needed but cannot be identified, belonging to the group of passerines.

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

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

Restoration measures of habitats, as well as measures to increase the population size were not taken for any of the species. Measures to expand the current range were taken mostly for falcons (100%, EU mean 5.4%).

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

For the favourable reference range, DK habitats report mainly ≈ . Where unknown (x) is reported, this is seen with 2 coastal habitat groups. >> is reported for 2 freshwater habitat groups. > is reported for 1 forest and heath & scrub habitat.

The favourable reference area mirrors the favourable reference range in that ≈ is mostly reported across all habitat groups. Unknown (x) is also reported for 2 coastal habitats. >> is more frequently reported than for range: the highest frequency for heath & scrub (50%) and grasslands (44.4%). The use of operator > is seen in 3 habitat groups: bogs, mires & fens (23.1%), coastal habitats (11.5%) and dune habitats (8.3%).

Coastal habitats is the habitat group reporting unknown (x) for both favourable reference range and favourable reference area.

Non-bird species

DK used mostly operators, nevertheless the operator ≈ is in fact also an actual favourable reference value.

Both > and unknown (x) were reported across more habitat groups, although there is a high reporting of >> for some groups: for range 30.8% of arthropods for population 41.2% of fish. For the range parameter, unknown (x) is reported in the highest proportion with other invertebrates (100%, 1 species), 66.7% non-vascular plants (6 species). For area, unknown is reported in the highest proportion with other invertebrates (100%, 1 species) and mammals (50%, 22 species).

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.

All rocky habitats reported in DK have a habitat condition area equal to the area covered by the habitat. The remaining habitat groups which report an equal habitat condition area to the area covered by the habitat range from forests (56.3%, EU average 56%) to bogs, mires & fens (7.7%, EU average 49%).

The highest proportion of reporting a greater habitat condition area is seen with the bogs, mires & fens (61.5%, EU average 20.3%) and closely followed by sclerophyllous scrub habitats (50%, EU average 21.2%) and dune habitats (50%, EU average 21.2%). The highest proportion of reporting a lower habitat condition area is seen with grasslands (33.3%, EU average 29%) and bogs, mires & fens (31%, EU average 28.5%).

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.

DK report 20% of Annex I habitat area as being within the Natura 2000 network. Overall, Annex I habitat area comprises 45% of the total land area (minus sealed area) for DK.

For further details see the online statistics here.