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

SE

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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)

[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 SE

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 submitted by SE were comparable between Article 17 and the Natura 2000 database end_2018. The majority of the reports (91%) reported a Natura 2000 database habitat area as less than or equal to the Article 17 habitat area. This is above the EU average of 74.9%. The remaining records reported a Natura 2000 database area as either 1 to 1.5 times greater (4.5%, EU average 13.1%) or greater than 2 times (4.5%, EU average 9%) times the Article 17 habitat area.

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

All records were also comparable between the Natura 2000 area reported in Article 17 and the area reported in the Natura 2000 database. The highest proportion reported a Natura 2000 database area as 1 to 1.5 times greater that the Natura 2000 habitat area reported in Article 17 (44.3%, EU average

32.7%). The next highest proportion reported a Natura 2000 database area of less than that reported for Natura 2000 area in Article 17 (43.2%, EU average 46.2%). For the remaining habitat reports, 8% (EU average 14.2%) report a Natura 2000 database area as 2 times greater than the Natura 2000 area reported in Article 17, while 4.6% (EU average 5.5%) report as 1.5 to 2 times than Natura 2000 area 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:

Only 19.6% of all species reported in SE 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, 85.7% reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is better than the EU average of 80.5%. The remaining 14.3% of species reported a Natura 2000 population greater than the Article 17 population, which is lower than the EU average of 19.4%.

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: 19.6%.

Of this small comparable proportion, 23% of species report a population in Natura 2000 greater than in Article 17, a percentage that is lower than the EU mean of 32.5%. The remaining 77.1% 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 16% 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, only 3.4% 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: 10.8%.

Of this comparable proportion, 11.3% 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 88.8% report a lower population in Natura 2000 than in Article 12 report, 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

Sclerophyllous scrub is the habitat group in SE that reports this highest proportion of missing mandatory information (17.8%, EU average 9.9%). Within this group, no mandatory information is provided for the parameters overall trend in conservation status, short-term trend of habitat area in good condition, short-term trend inside the network and short-term trend of area covered by the habitat. The short-term trend inside the network is also not reported for freshwater habitats with a high proportion of missing information (>50%) for this parameter also seen with all other habitat groups except for rocky habitats.

Where expert opinion is the method reported the highest proportion is seen with the rocky habitat group (63.4%, EU average 26.2%). The largest proportion of insufficient information is seen with sclerophyllous scrub (40%, EU average 15.9%).

Non-bird species

The majority of missing mandatory information for any species group occurred with other invertebrates (22% of mandatory fields missing information). This is lower than the EU average of 33.4% for this group. Within this group, there are several fields with 100% missing mandatory information: overall trend in conservation status (EU average 31.7%), short-term population trend (EU average 65.1%), short-term trend of habitat for the species (EU average 57.1%) and sufficiency of occupied habitat (EU average 42.9%).

The short-term trend inside the network parameter is also 100% missing for: mammals (EU average 19.1%) and amphibians (EU average 47.1%). For reptiles there is no information available of future prospects of population (EU average 33.3%).

The species groups with the highest percentage of 'expert opinion' as a method used while filling in the fields on main results of surveillance are non-vascular plants (83%) and mammals (49%), which is higher than the relevant EU average (32.5% and 26.8%, respectively). Those indicated with the highest ratio of 'insufficient data' are non-vascular plants (17%), which is lower than the EU average for non-vascular plants (30.1%).

Bird species

The bird groups herons, pelicans, ibises & spoonbills, waders, gulls & auks and cranes, rails, gallinules & coots are those which report the highest proportion of missing information across all mandatory fields in the reporting format (4.8%, 4.7% and 4.1% of all fields, respectively). This is lower than the respective EU averages of 14.2%, 15.4% and 17.1%.

The bird group with the highest missing mandatory information for wintering species (trend information) are the waders, gulls and auks (50% missing information for long-term trend, EU average 46%). The only group reporting missing information on hunting bags is the one of ducks, geese and swans (13.3%, EU average 20.6%). Missing information on the short-term trend within the SPA network is seen with species group waders, gulls and auks (14.3%, EU average 40.1%). Some species groups reported the long-term trend in breeding population as field missing or unknown (ducks, geese & swans, owls, passerines and waders, gulls & auks), although never above 9.1%.

Where expert opinion is reported, the highest is seen with owls (26%, EU average 36%). There is minimal reporting of insufficient data as a method used.

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, SE reports mainly the use of partial estimate as the method used, apart from rocky habitats (57.9%, 11 habitats, EU average 18.9%) and sclerophyllous scrubs (11%, 2 habitats, EU average 18%) which used expert opinion.

For structure and function, expert opinion was used more frequently than partial estimate for most of the habitat groups, the highest reporting is seen with: all 22 freshwater habitats (100%, EU average 19%), 2 dune habitats (100%, EU average 17.9%), 18 bogs, mires and fens habitats (81.8%, EU average 24%), 13 rocky habitats (68.4%, EU average 22%). There are also 6 dune habitats (33.3%, EU average 17.1%) and 3 grassland habitats (9.4%, EU average 14.7%) for which no information was available on the method.

Rocky habitats and sclerophyllous scrubs appear to report some of the highest proportions of expert opinion for both parameters.

Non-bird species – methods used

The complete survey is used only partially for the population parameter; highest proportion in fish (68.2%, EU average 15.9%). All records on habitat of reptiles were based on a complete survey (in contrast with EU mean value 8.2%). Partial estimate is the most frequent method used for the population parameter across most of species groups. Habitats of arthropods are based mostly (66%) on expert opinion. Same proportion of population of arthropods is based on partial estimate Habitat and population parameters of other invertebrates and non-vascular plants, fully on expert opinion.

For further details see the online statistics here.

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

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

Habitats

Where no main reason for change was provided, this is seen with the parameters range and overall conservation status for the forest habitat group for 3 habitats. It is also seen for the parameter area covered by the habitat for 1 freshwater habitat.

Where more than 1 reason for change was given (and hence the main reason for change cannot be determined), this issue is encountered for 2 coastal habitats for the parameter range.

Non-bird species

Missing information on main reason for change with SE species is seen with all 4 parameters for species: overall trend in conservation status (37.9% of the total of 58 cases, EU average 39.9%), range (22.4%, EU average 12.3%), population (20.7%, EU average 15.7%) and overall conservation status (19%, EU average 32.1%). This missing information is seen with the 4 species groups: amphibians, arthropods, fish and non-vascular plants.

Where the main reason for change was submitted, there is overall coherence between it and the reasons selected in this field (i.e. no issues).

For further details see the online statistics here.

2.4 Conservation measures

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

Habitats

Most measures are indicated as needed ut not yet taken. All sclerophyllous scrub and dune habitat reports for SE list the status of conservation measures as needed but not yet taken. There is also a high proportion of reporting under this category for habitat groups: forests (93.9%, EU average 22.6%), coastal habitats (86.7%, EU average 28.2%), freshwater habitats (86.4%, EU average 26.8%) and bogs, mires & fens (81.8%, EU average 21.7%). Where measures are needed but cannot be identified, this is seen for a small proportion of bog, mires & fens reports (9.1%, EU average 2.3%) and rocky habitats reports (5.3%, EU average 1.9%).

Only coastal habitats report restoration of structure and functions as the main purpose of the measures (2 habitats). The remaining habitat groups where measures were needed and taken, the main purpose was to maintain the current range.

Non-bird species

Significant majority of records reported no measures needed. Species where measures are needed but cannot be identified are only five species (1 vascular plant, 1 fish, 2 mammals, 1 arthropod). The groups

with the highest percentage of measures needed but not yet taken are non-vascular plant (73.1%, EU mean 33 %) and arthropods (52.1%, EU mean 20,2%).

The majority of measures intend to maintain the current status (in molluscs and nonvascular plants fully). The restoration of the habitat for the species is reported mostly for all fish species and most (83.3%) arthropod species. Measures for expansion of the current range were taken in 3 species.

Bird species

Breeding: For the majority of breeding species reported in SE measures were reported as not needed, the second most reported category was needed and taken. Only 3 breeding species were reported in the category of conservation measures needed but cannot be identified, belonging to the groups: ducks, geese & swans, falcons and waders, gulls & auks.

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

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

Restoration measures for the habitat were not taken for any of the species, whereas measures to increase the population size or improve the dynamics concern mostly hawks & eagles, passerines, pheasants, partridges & grouse (100% for each, EU mean 33.5%, 17.4%, 20.5% and 25.6% respectively). Measures to expand the current range were not taken for any of the species.

For further details see the online statistics here.

2.5 Favourable reference values

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

Habitats

There is a high proportion of reporting the actual favourable reference value for both parameters for SE habitats.

For the range parameter, only grasslands, forests and dune habitats report either > or >> in small proportions: the largest being more than for dune habitats 22.2%.

For area, there is a slightly higher reporting of the >> operator: the highest seen is grasslands 75%, heath & scrub 50% and dune habitats 33.3%.

Non-bird species

SE had not used operators at all, which is an exceptional case among Member States. Nearly all of species reports used actual value for both favourable reference range and favourable reference population. In both parameters were missing values only in 2 arthropod species and 6 species of non-vascular plants.

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.

SE has a high proportion of reporting an equal habitat condition area to the area covered by the habitat: 100% for dune habitats (EU average 51.5%), grasslands (EU average 51.8%), heath & scrub (EU average 59.8%) and sclerophyllous scrubs (EU average 52.5%).

The remaining groups all report an equal habitat area of 95.4% for bogs, mires & fens and freshwater habitats to 83.3% for coastal habitats.

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.

32% of Annex I habitat area reported by SE is covered by the Natura 2000 network. Almost 35% of the land area (minus the sealed area) is covered by Annex I habitat.

For further details see the online statistics here.