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

LV

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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 LV

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 LV were comparable between the Article 17 report and the Natura 2000 database end_2018.

Of this comparable proportion, it was found that for 86.7% of the habitats, the habitat area reported within Natura 2000 was smaller than or equal with that reported in Article 17. This compares with an EU average of 74.9%.

For the remaining 13.3% of habitats, the reported habitat area in Natura 2000 was greater than that reported in Article 17, which is lower than the EU average of 25.1%. Of these records, approximately one third (5%) reported an area in Natura 2000 >2times the Article 17 area.

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

Regarding the Natura 2000 area reported in Article 17 and comparing with the Natura 2000 database, it is seen that the majority either have a smaller area reported in the Natura 2000 database (55%, EU average 46.2%) or a Natura 2000 database area as 1 to 1.5 times more than the Natura 2000 area reported in Article 17 (28.3%, EU average 32.7%). 11.6% report a Natura 2000 database area of 1.5 to 2 times the Article 17 area for Natura 2000 (EU average 5.5%) and 5% have a Natura 2000 database area of more than 2 times the Article 17 area (EU average 14.2%).

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:

12.3% of all species reported in LV 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, 94.12% reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is higher than the EU average of 80.5%. The remaining 5.88% of species reported a Natura 2000 population greater than the Article 17 population, which is much 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, only 12.3% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 18.75% 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 81.25% 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 20% 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, 13.4% report a larger population in Natura 2000 than the national population reported in Article 12, which is lower than the EU average of 20%. 7.3% of total records report a population as >2 times times greater than the Article 12 population (EU average 8.1%).

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: 17.7%.

Of this comparable proportion, 31.7% of species reported a larger population in Natura 2000 compared with the Natura 2000 population in the Article 12 report, which is above the EU average of 40.5%, 16.2% report a population of >2 times times that of the Article 12 population (EU average 14.3%). Apart from this, 44.6% report a lower population in Natura 2000 than in Article 12 report, which is similar than the EU average of 62.2%.

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 majority of mandatory missing information for LV habitats is seen with forests (28.3%, EU average 8.9%). Sclerophyllous scrubs shows the highest proportion of parameters where 100% of information is missing: favourable reference range (EU average 17.2%), favourable reference area (EU average 13.1%), future prospects of range (EU average 6.6%), short-term range trend (EU average 7.4%), short-term trend inside the network (EU average 32%), status of range (EU average 13.9%).

Favourable reference area is also not reported for bogs, mires & fens, forests, grasslands, heath & scrub. Favourable reference range is also not reported for: bogs, mires & fens, grasslands.

Extrapolation or complete survey comprises the majority of the methods used reported for all habitat groups. Where expert opinion is reported it is seen mostly for forests (28.3%, EU average 22.4%), heath & scrubs (25%, EU average 25.1%) and bogs, mires & fens (20.7%, EU average 22.3%). The highest proportion of reporting insufficient data is with freshwater habitats (8.9%, EU average 18.4%).

Non-bird species

The majority of missing mandatory information for any species group occurred with other invertebrates (52.4% of mandatory fields missing information) and amphibians (39.2%). This is much higher than the EU average of 33.4% for other invertebrates and 16.3% for amphibians.

All species groups reported either the 'short-term population trend' or 'short-term population trend in the network' as the two fields with the highest proportion of missing/unknown information. The

groups which reported the highest percentages of missing/unknown information for both these fields are: amphibians, arthropods and other invertebrates.

The species group with the highest percentage of 'expert opinion' as used method while filling in the fields on main results of surveillance is other invertebrates (66.7%), which is higher than the relevant EU average (39.6%). Those indicated with 'insufficient data' are amphibians (42.9%) and reptiles (45%). The percentage is higher than the EU average for amphibians (22%) and for reptiles (26.9%).

Bird species

The bird groups loons or divers and grebes are those which report the highest proportion of missing information across all mandatory fields in the reporting format (18.7% and 18.4% of all fields, respectively). The respective EU averages are 22.7% and 14.1%.

The bird groups with the highest proportion of missing mandatory information for wintering species (trend information) are the waders, gulls & auks and hawks & eagles and loons or divers (all >50% missing information for both short and long-term trends. 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 groups cranes, rails, gallinules & coots, gannets & cormorants, hawks & eagles, herons, pelicans, ibises & spoonbills, loons or divers, pheasants, partridges & grouse, swifts & nightjars, waders, gulls & auks and woodpeckers (all 100% missing information). There is also missing information observed in lower proportions for other species groups. Several species groups reported the long-term trend in breeding population as field largely missing or unknown (grebes, herons, pelicans, ibises & spoonbills, kingfishers, rollers, bee-eaters & hoopoe, pheasants, partridges & grouse and waders, gulls & auks (although all under 30% missing information). Where the short-term breeding trend is reported as missing, this is seen with cranes, rails, gallinules and coots (42.9%), grebes (20%) and swifts and nightjars (50%) (although also seen with lower proportions with other species groups).

Where expert opinion is reported as the method used, this is seen with owls (38%, EU average 36%). Two of those indicated with 'insufficient data' in the methods field are loons or divers (30%, EU average 76%) and also with ducks, geese & swans (24.9%, EU average 22%).

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

Partial estimate was the most used method for area. Expert opinion was the main method used for assessing the area parameter for freshwater habitats (71.4%, EU average 18.3%), also reported for 1 coastal habitat.

Partial estimate was the most used method for structure and functions. Expert opinion was also reported as the highest proportion method used for the structure and function parameter for the freshwater habitats (85.7%, EU average 19%). t was also reported for 1 habitat from the heath & scrubs, coastal habitats and dune habitats groups. Insufficient/no data available was reported for 1 coastal habitat.

Non-bird species – methods used

The majority of the assessments for the species population are based on partial estimate followed by complete survey. The species group with the highest share of complete survey are non-vascular plants (100%, EU average 21.7%) and amphibians (72.7%, EU average 11.3%).

The majority of assessments on habitat of the species are based on partial estimate followed by complete survey. The species group with the highest share of complete survey are non-vascular plants (60%, EU average 7.5%) and fish (53.8%, EU average 8.6%).

For further details see the online statistics here.

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

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

Habitats

No issues are seen with reporting the main reason for change between reporting periods for habitats in LV for any of the parameters reported.

Non-bird species

For all species groups (only 3 species reports), the range parameter showed the highest share of cases where no reason was filled in for the change and reason for change (100%, EU average 12.3%).

The species groups where reason for change was not filled in for some parameters are identified are mammals, arthropods and vascular plants. There were no cases where more than one reason was filled in. There were no coherence issues with the selected reasons for 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

All habitat reports for all groups in LV report that the conservation measures needed have been taken, with 1 grassland habitat reporting that measures are not needed.

Where measures have been taken, 2 habitat groups report the main purpose as restoring the structures and functions: 1 habitat each for coastal (11.1%, EU average 34%) and grassland habitats (11.1%, EU average 11.4%). The majority of habitat reports list maintaining the current range as the main purpose of the measures.

Non-bird species

Species where measures are needed but cannot be identified are mostly found with the groups: molluscs (16.7% of the total number of records on the status of measures in the species group, EU mean 3.1%) and arthropods (8.3%, EU average 3%). The groups with the highest percentage of measures needed but not yet taken are amphibians (12.5%, EU average 11.8%) and mammals (4.5%, EU average 12.5%). The groups with the highest percentage of measures not needed are fish (90%, EU average 12.4%) and mammals (90.9%, EU average 46.9%).

Restoration measures taken for the habitat of the species seem to concern mostly amphibians (100% of the total number of records on the main purpose of measures that have been applied, EU average 14.8%), whereas measures to increase the population size or improve the dynamics concern mostly

mammals (100%, EU average 11.2%), fish (100%, EU average 11.5%) and reptiles (100%, EU average 9.1%). No measures were taken to expand the current range.

Bird species

Breeding: For the majority of breeding species reported in LV measures were reported as needed and taken, the second most reported category was not needed.

Wintering: For all wintering species in LV it was reported that conservation measures were not needed.

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

Restoration measures taken for the habitat of the species seem to concern only passerines and waders, gulls & auks (25% and 15.4% of the total number of records on the main purpose of measures that have been applied, EU mean 15.2% and 11.1%), whereas measures to increase the population size or improve the dynamics concern kingfishers, rollers, bee-eaters & hoopoe and storks and flamingo (100% and 50%, EU mean 37.5% and 25.6%, respectively). Measures to expand the current range concern only waders, gulls & auks (7.7%, EU mean 1.4%).

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 parameter range, unknown is the most frequently reported operator across all habitat groups, ranging from 22.2% (2 coastal habitats) to 100% (10 grassland habitats, also 100% for sclerophyllous scrubs although only 1 habitat reported in the group by LV). The highest proportion of reporting the ≈ operator is with coastal habitats (77.8%) and dune habitats (66.7%) although is also seen with rocky habitats, freshwater habitats and forests.

For the area parameter, unknown (x) is also the most frequently reported parameter and is seen with 100% of forest habitats (12 habitats), grasslands (10), bogs' mires & fens (8) and sclerophyllous scrub (1 habitat). For the remaining habitats there is also a high proportion reporting of unknown (x): 22.2% of coastal habitats (2 habitats) to 71.4% in freshwater habitats (5 habitats). The > operator is also used with coastal habitats, dune habitats and freshwater habitats, but never more than 33.3% of reports. Where ≈ is reported for area, the highest proportion of reporting is with coastal habitats (44.4%).

The actual favourable reference value for either area or range is not reported for any LV habitat.

Non-bird species

For the parameter range, the highest share of unknown (x) value was reported for amphibians (45.5% of the values for the species group), followed by arthropods (44%). The operator >> had a high share only among amphibians (18.2%).

For the favourable reference population, the highest share of unknown value was reported for amphibians (18.2%) and fish (15.4%). The operator > had a high share among amphibians (9.1%) and arthropods (12%).

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.

LV reporting consistency on habitat condition area and area covered by the habitat is mixed.

There is high equality reported for sclerophyllous scrub (100%, EU average 52.5%), forests (91.7%, EU average 55.9%) and bogs, mires & fens (87.5%, EU average 49%), with the remaining habitats in those groups reporting a lower habitat condition to the area covered by the habitat.

For habitat groups reporting equal habitat condition area and area covered by the habitat, rocky habitats (66.7%, EU average 55%), Freshwater habitats (57.1%, EU average 50.6%), coastal habitats (44.4%, EU average 58%) and dune habitats (33.3%, EU average 51.5%), for the most part, the remaining habitats within these groups were reported with a lower habitat condition area than the area covered by the habitat.

There is no equality reported for grasslands or heath & scrub habitat groups. The majority of grasslands are reported with a lower habitat condition area (90%, EU average 29%) and heath & scrub habitats are all with a higher habitat condition area (EU average 13.8%).

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.

45% of Annex I habitat area reported by LV is covered by the Natura 2000 network. Almost 9% of the land area (minus the sealed area) is covered by Annex I habitat.

For further details see the online statistics here.