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

PT

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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 PT

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:

Of the habitat reports by PT, only 30.3% of these could be compared between Article 17 and the Natura 2000 database end_2018. Most of this comparable proportion report a Natura 2000 habitat area as less than or equal to the Article 17 habitat area (97.4%). The remaining proportion report a Natura 2000 habitat area of 1.5 to 2 times greater than the Article 17 habitat area

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

The majority of habitat reports have a Natura 2000 database area as less than the area reported for Natura 2000 in Article 17. The remaining proportion report the Natura 2000 database area as greater than 2 times the Natura 2000 area reported in Article 17 (3.51%).

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:

24.1 % of all species records in PT were comparable between the Article 17 database and the Natura 2000 database. The highest comparable proportion among Member States does not exceed 34.3%. The average comparable proportion among Member States is 17 %.

Of this comparable proportion, 75.4 % reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is slightly lower than the EU average (80.6 %). The remaining 24.6 % of species reported a Natura 2000 population greater than the Article 17 population, which slightly more than the EU average (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, 20.6 % of species records could be compared between the datasets based on the criteria noted above (EU average: 16.7%). Of this comparable proportion, 37.3 % of species report a population in Natura 2000 greater than in Article 17 (EU average 32.5%). The remaining 59.3 % of species report a population in Natura 2000 smaller than that in Article 17 (EU average 64.5). 3.4 % of all species reported by PT 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, 23.6% report a larger population in Natura 2000 than the national population reported in Article 12, which is lower than the EU average of 20%. The largest

proportion is reported in the category of 1 to 1.5 times greater population than Article 12 (13.2%, EU average 8.3%).

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: 12.5%.

Of this comparable proportion, 1.5% of species reported an equal population in Natura 2000 and Art 12, lower than the EU average of 3.2%. 41.8% 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%, whereas 56.7% report a lower population in Natura 2000 than in Article 12 report, which is similar to the EU average of 56.2%.

For further details see the online statistics here.

2. Analysis of specific fields in Article 12 & 17 reporting formats

2.1 Data quality and completeness

Several fields in the Article 17 and 12 reports are highlighted as 'mandatory' and are essential to assessing the status of a habitat or species at both national and EU level. When such fields have been completed with 'unknown' or the values are simply missing, this presents a data quality issue. Moreover, when 'expert opinion' or 'insufficient data' is indicated as method used, this highlight a need for further monitoring effort. This analysis complements the relevant analysis already included in the national summaries of Article 12 and Article 17.

Habitats

The highest proportion of missing mandatory information in PT is seen with rocky habitats (23.7%, EU average 10.7%) followed by freshwater habitats (22.1%, EU average 12.3%). There is no reporting of the condition of the habitat for sclerophyllous scrubs and a high proportion of non-reporting for all other habitat groups - all above 50% (EU average 7.5%). There is also a high proportion of missing information for two parameters across all habitat groups: type of estimate-habitat area: 50% - 95% missing information (EU average 7.2%), area covered by the habitat: 50% - 95% (EU average 4.9%).

Expert opinion is reported as the method used in a high proportion for coastal habitats (52.2%, EU average 12%), dune habitats (64.5%, EU average 8.5%), forests (50.8%, EU average 8.9%), grasslands (61.8%, EU average 9.8%), heath & scrub (57.9%, EU average 10.6%) and sclerophyllous scrub (71.8%, EU average 9.9%). The highest proportion of insufficient data is reported for the forest habitat group (37.3%, EU average 11.3%).

Non-bird species

A high proportion of missing mandatory information was spotted in several species groups: other invertebrates (85.7 %, EU average 3.4%), non-vascular plants (60.2 %, EU average 22.1%), arthropods (57.6 %, EU average 18.9%), reptiles (53 %, EU average 18.9%), amphibians (51.4 %, EU average 16.3%), mammals (47.2 %, EU average 19.1%) and molluscs (37.1 %, EU average 19.7%). Fish was the group with a very low proportion of missing obligatory values.

Overall, insufficient data was reported as the method used for 100% (EU average 46.8%) of other invertebrates assessments. The highest proportion of expert opinion was seen with the amphibians groups (48.8%, EU average 25.3%).

Bird species

The bird groups pigeons & doves, cranes, rails, gallinules & coots and herons, pelicans, ibises & spoonbills are those which report the highest proportion of missing information across all mandatory fields in the reporting format (41.5%, 33.3% and 33.3% of all fields, respectively). This is higher than the respective EU averages of 16.6%, 17.1% and 14.2%.

Bird groups with primarily missing mandatory information for wintering species (trend information) are the falcons, gannets & cormorants, grebes, hawks & eagles, herons, pelicans, ibises & spoonbills, passerines, petrels, storm-petrels & shearwaters, storks & flamingo. 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 kingfishers, rollers, bee-eaters & hoopoe, passerines, herons, pelicans, ibises & spoonbills, falcons, hawks & eagles, cranes, rails, gallinules & coots, gannets & cormorants, owls, petrels, storm-petrels & shearwaters, waders, gulls & auks. Several species groups reported the long-term trend in breeding population as field largely missing or unknown (bustards, cranes, rails, gallinules & coots, cuckoos, ducks, geese & swans, falcons, gannets & cormorants, grebes, hawks & eagles, herons, pelicans, ibises & spoonbills, kingfishers, rollers, bee-eaters & hoopoe, owls, passerines, petrels, storm-petrels & shearwaters, pheasants, partridges & grouse, pigeons & doves, sandgrouse, storks & flamingo, swifts & nightjars, waders, gulls & auks and woodpeckers).

There is minimal reporting of 'expert opinion' among the bird groups. The largest reporting of insufficient data is seen with hawks and eagles (33%, EU average 49%).

PTAC

In the case of PTAC, the bird groups herons, pelicans, ibises & spoonbills, loons or divers, ducks, geese & swans are those which report the highest proportion of missing information across all mandatory fields in the reporting format (87.5%, 87.5% and 75% of all fields, respectively). This is higher than the respective EU averages of 14.2%, 22.7% and 12.1%.

Bird groups with primarily missing mandatory information for wintering species (trend information) are the cranes, rails, gallinules & coots, ducks, geese & swans, herons, pelicans, ibises & spoonbills, loons or divers and waders, gulls & auks (all 100% missing information for short and long-term trends). The groups with missing in formation on hunting bags are ducks, geese & swans (100%, EU average 20.6%), waders, gulls & auks (100%, EU average 14.3%) and pigeons & doves (100%, EU average 16.1%). A high proportion of missing information on the short-term trend within the SPA network is seen with species groups herons, pelicans, ibises & spoonbills and loons or divers. Where information is missing on the long-term trend in breeding population as field largely missing or unknown (cranes, rails, gallinules & coots, hawks & eagles, owls, pheasants, partridges & grouse, pigeons & doves, waders, gulls & auks). Missing information on the short-term trend is seen to a lesser extent across all groups.

Expert opinion is reported in the highest proportion with the group petrels, storm petrels and shearwaters (20%, EU average 38%). Some groups indicating complete reporting of 'insufficient data' in the methods field are ducks, geese & swans (100%) and loons or divers (100%). These percentages are higher than the EU average for ducks, geese & swans (12.1%) and loons or divers (22.7%).

PTMA

For PTMA, the bird groups waders, gulls & auks, owls, swifts & nightjars are those which report the highest proportion of missing information across all mandatory fields in the reporting format (39.6%, 25% and 25% of all fields, respectively). This is higher than the respective EU averages of 15.4%, 16.3% and 16.5%.

A high proportion of missing information on the short-term trend within the SPA network is seen with species groups passerines and waders, gulls & auks (both 100% missing information). Several species groups reported a proportion of missing information for both the long-term and short-term trend in breeding population (petrels, storm-petrels & shearwaters, pigeons & doves, swifts & nightjars, waders, gulls & auks).

Owls are reported with expert opinion as the method used for 33% of the parameters (EU average 36%). The highest proportion of 'insufficient data' in the methods field is seen with swifts & nightjars (50%, EU average 41%) and waders, gulls & auks (53%, EU average 23%).

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

PT report a high level of insufficient/no data for the area parameter across all habitat groups. The highest is seen with dune habitats (95%, EU average 7.2%), grasslands (87.5%, EU average 3.1%) and forests (84%, EU average 4.4%). There is no method provided for 2 freshwater habitats (10%, EU average 0.5%).

For the parameter structure and function, insufficient/no information available on the method used is seen for a high proportion of habitat reports in all groups (all above 50%). The highest is seen with sclerophyllous scrub (100%, EU average 25.4%), dune habitats (95%, EU average 17.1%) and grasslands (93.8%, EU average 14.7%).

Non-bird species – methods used

The majority of the assessments for the species population are based on partial estimate or expert opinion and absent data. The species groups with the highest share of absent data and expert opinion for the population parameter are other invertebrates (100 %), non-vascular plants (83.4 %), amphibians (81 %), reptiles (79 %) and arthropods (77.8 %).

The majority of assessments on habitat of the species are based on expert opinion or data absent. The species groups with the highest share of absent data is other invertebrates.

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 87 cases with no main reason for change between reporting periods being provided for PT habitats. This is seen with the parameter area covered by the habitat for all habitat groups, the overall conservation status and overall trend in conservation status for coastal habitats, freshwater habitats, heath & scrub habitats and rocky habitats, and with the parameter range for coastal habitats.

Where a main reason for change was provided, there are no inconsistencies seen between the main reason selected and options ticked in this field.

Non-bird species

The parameter "overall trend" in conservation status showed the highest proportion of missing the main reason for change of all parameters (41.3 % of the 160 cases, EU average 39.9%). Only in one species group (reptiles) were more than one reason indicated (for the population parameter).

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

Conservation measures needed but none yet taken is seen in the highest proportion with the habitat groups: forests (88%, EU average 22.6%) grasslands (81.3%, EU average 22%), dune habitats (70%, EU average 23.6%) and heath & scrub (60%, EU average 17.1%).

Where measures have been taken, this highest proportion of restoration of structure and functions is seen with dune habitats (83.3%, EU average 23.8%), sclerophyllous scrubs (75%, EU average 17.1%) and coastal habitats (58.8%, EU average 34%). The main purpose of maintaining the current range of the habitat is seen for all grassland, heaths & scrub and bogs, mires & fens habitat groups. A high proportion of rocky habitats (75%, EU average 87.7%), forests (66.7%, EU average 67.5%) and freshwater habitats (67.7%, EU average 68.2%) also report maintaining the current range as the main purpose.

Non-bird species

For most of the species groups, measures are “needed but none yet taken” and “not needed”. For PT species, the group with the highest proportion of reporting measures “needed but none yet taken” are fish (80 %, EU average: 40 %), molluscs (76.2%, EU average: 34.8%), arthropods (70.6%, EU average: 20.2 %) and vascular plants (53.9 %, EU average 27.5 %).

The vast majority of measures intend to maintain the current status

Bird species

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

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

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

Restoration measures for the habitat of the species were not taken for any of the species, whereas measures to increase the population size or improve the dynamics concern bustards and hawks & eagles (100% and 60% respectively, EU mean 53.3% and 33.5%). Measures to expand the current range concern hawks and eagles (20%, EU mean 6.3%).

PTAC

Breeding: Where measures were are needed but not yet taken, this is seen mostly with groups petrels, storm-petrels and shearwaters (60%) and waders, gulls and auks (66.7%). Where measures are needed but unknown, this is seen with petrels, storm-petrels and shearwaters (40%).

Wintering: measures were reported as not needed for the groups reported in the winter season.

Passage: None of the species reported in PTAC was reported for conservation measures.

Restoration measures for the habitat size were not reported as reasons for undertaking the measures for any group. Whereas measures to increase the population size or improve the dynamics concern

mostly passerines and pigeons & doves (100% for each, EU mean 17.4% and 16.7%, respectively). None of the groups have measures to expand the current range.

PTMA

Breeding: Where measures were reported as needed but not taken, this is seen with the group petrels, storm-petrels and shearwaters (28.6%). 100% of swifts and nightjars reported measures needed but not known (only 1 species).

Wintering: None of the species in PTMA were reported with conservation measures.

Passage: None of the species reported in PTMA was indicated with measures.

No measures were taken with the aim to restore the habitat or to increase the population size for any group. Whereas measures to maintain the range concern mostly hawks & eagles (100%), petrels, storm-petrels & shearwaters (60%), pigeons & doves (100%), EU mean 57.9%, 62.5% and 33.3% respectively and measures to expand the current range concern peters, storm peters an shearwaters (40%, EU average 8.3%).

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

Both the range and the area parameter have a high proportion of reporting ≈ value for all habitat groups.

For the range parameter, unknown is reported mostly with bogs, mires & fens and grasslands (37.5% for both groups) and heath & scrub and sclerophyllous scrub (30% for both).

For area, the > operator is reported mostly for bogs, mires & fens (62.5%) with a high proportion of freshwater habitats (30%), sclerophyllous scrub (40%) and heath & scrub (30%) also reporting >. The use of >> is very restricted. Unknown does not exceed 10% for any habitat group.

There are 3 grassland habitats where the < is used but where an unfavourable conclusion is assessed: 6210, 6310 and 6510. This operator cannot be used where the overall conclusion of the assessment is unfavourable.

Non-bird species

For the parameter range, the highest share of unknown value (X) was reported for arthropods (100% of the values for the species group), other invertebrates (100 %) followed by non-vascular plants (72.2 %) and molluscs (71.4 %).

For the favourable reference population, the highest share of unknown value (X) was reported for amphibians (95.2 %), arthropods (94.4%), reptiles (84.2 %), mammals (76.7 %), followed by molluscs and non-vascular plants (for both 66.7 %). Vascular plants, fish and molluscs report the highest percentages of >> operators (19 %, 17.1 % and 14.3 % respectively) for the population.

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.

PT have a high proportion of data gaps with regard to reporting habitat condition area versus area covered by the habitat. All habitat groups have a lack of data to undertake this comparison - from highest being 100% of sclerophyllous habitats (EU average 5.1%) to lowest being 50% of bogs, mires & fens habitats (EU average 2.6%).

Only 3 habitat groups report an equal habitat condition area to the area covered by the habitat - bogs, mires & fens (12.5%, EU average 49.1%), coastal habitats (8%, EU average 58%) and freshwater habitats (5%, EU average 51%).

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.

About 5% of the reported Annex I habitat area for PT is covered by the Natura 2000 network. The land area of PT (minus the sealed area) is about 20% covered by Annex I habitat area.

For further details see the online statistics here.