Data quality coherence check Summary of results checking quality of data collected under the Nature Directives	Fact sheet **LT**

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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)

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[1] The list is not exclusive

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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 LT

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

Of this comparable proportion, it was found that for 74% 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 26% of habitats, the reported habitat area in Natura 2000 was greater than that reported in Article 17, which is almost equal to the EU average of 25.1%. Of these records, approximately one third (9.3%) reported an area in Natura 2000>2 times the Article 17 area.

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

The majority of habitats could be compared between the Natura 2000 area reported in Article 17 and the area reported in the Natura 2000 database. While the majority (45.3%) report a Natura 2000 database area of less than the Natura 2000 area in Article 17 (EU average 46.2%), this is followed by equal reporting in categories Natura 2000 database area 1 to 1.5 times greater (22.6%, EU average 32.7%) and more than 2 times greater (22.6%, EU average 14.2%) than the Natura 2000 area 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:

10.75% of all species reported in LT 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, 80% reported a species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is similar to the EU average of 80.5%. The remaining 20% of species reported a Natura 2000 population greater than the Article 17 population, which is slightly higher than the EU average of 19.4%

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

Regarding the Natura 2000 population reported in the Article 17 national report, only 10.75% of species records could be compared between the datasets based on the criteria noted above.

Of this small comparable proportion, 30% of species report a population in Natura 2000 greater than in Article 17, percentage that is slightly lower than the EU mean of 32.5%. The remaining 70% 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

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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 31% 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, 14.5% 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, a lower proportion of species could be compared: 29.4%.

Of this comparable proportion, any of the species reported an equal population in Natura 2000 and Art 12, lower to the EU average of 3.2%. 45.3% 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%. Where the Natura 200 population is reported as larger this is seen mostly in the category >2 times the Article 12 population (18.9%, EU average 14.3%). 54.7% report a lower population in Natura 2000 than in Article 12 report, which is lower than the EU average of 56.2%.

For further details see the online statistics here.

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

2.1 Data quality and completeness

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

Habitats

The highest proportion of missing mandatory information in LT is seen with rocky habitats (18.8%, EU average 10.7%) and coastal habitats (18.8%, EU average 12%). The lowest is seen with dune habitats (11.1%, EU average 8.5%). For some habitats, all mandatory information was missing for some parameters: short-term trend of habitat area in good condition (sclerophyllous scrub, coastal habitats, dune habitats, freshwater habitats, grasslands, heath & scrub, rocky habitats), short-term trend inside the network (sclerophyllous scrub, rocky habitats, heath & scrub, grasslands, forests, bogs, mires & fens), future prospects of structure & functions (heath & scrub, coastal habitats), short-term trend of area covered by the habitat (sclerophyllous scrub), status of structure & functions (coastal habitats).

The method expert opinion is reported for all habitat groups but the highest proportion is seen with dune habitats (56.9%, EU average 28.2%), and is reported 50% with habitat groups: bogs, mires & fens (EU average 22.3%), forest habitats (EU average 22.4%), grasslands (EU average 24.4%), heath & scrub (EU average 25.1%), rocky habitats (EU average 26.2%), sclerophyllous scrub (EU average 29.7%). Where the proportion of methods used for the habitat reports was 50% for expert opinion, the remaining 50% was complete survey.

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<u>Non-bird species</u>

The majority of missing mandatory information for any species group occurred with other invertebrates (47.6% of mandatory fields missing information) and mammals (23.3%). This is higher than the EU average of 33.4% for other invertebrates and 19.1% for mammals.

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: reptiles, vascular plants and amphibians.

The species groups with the highest percentage of 'expert opinion' as used method while filling in the fields on main results of surveillance are other invertebrates (66.7%) and amphibians (64.3%), which is higher that the relevant EU average (39.6% and 25.3%, respectively). Those indicated with 'insufficient data' are other invertebrates (33%) and mammals (24%). The percentage is lower than the EU average for other invertebrates (46.8%) but higher than the EU average for mammals (17.5%).

<u>Bird species</u>

The bird groups grebes and ducks, geese & swans are those which report the highest proportion of missing information across all mandatory fields in the reporting format (11.5% and 10.7% of all fields, respectively). This is lower than the respective EU averages of 14.1% and 12.1%.

Groups with primarily missing mandatory information for wintering species (trend information) are the grebes, loons or divers, waders, gulls & auks and cranes, rails, gallinules & coots (100% missing information for long-term trend). Where the short-term winter trend is missing this is seen with cranes, rails, gallinules & coots and grebes (100% missing). Other species groups also report missing information in lower proportions for these fields. 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 falcons, grebes (100% missing). Ducks, geese & swans, and passerines are also reported with missing information. Several species groups reported a proportion of missing information for the long-term trend in breeding population: cranes, rails, gallinules & coots, grebes, woodpeckers, waders, gulls and auks, passerines and owls. Where the short-term trend was reported missing, this is seen with cranes, rails, gallinules & coots, grebes, owls, passerines and waders, gulls and auks.

The highest proportion of expert opinion used as the methodology is seen with owls (17%, EU average 36%) Three of those indicated with 'insufficient data' in the methods field are ducks, geese & swans (15.1%, 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.

<u>Habitats – methods used</u>

For the structure and functions parameter, the majority of assessment is based on expert opinion: 100% for all habitat groups except coastal habitats (66.7%). The highest EU average for expert opinion in any habitat group is 24% for bogs, mires & fens so LT reporting is much higher than the EU average.

For the area parameter, complete survey is the method used for all assessments in all habitat reports. The exception to this is coastal habitats where expert opinion is the method used for 1 habitat report.

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The highest EU average reporting of expert opinion for the area parameter is for dune habitats (36.1%) so clearly LT is above this for all habitat groups.

Non-bird species – methods used

The majority of the assessments for the species population are based on partial estimate followed by expert opinion. The species group with the highest share of partial estimate are vascular plants (66.7%, EU average 29.4%) and arthropods (68.2%, EU average 40.8%).

The majority of assessments on habitat of the species are based on partial estimate followed by expert opinion. The species group with the highest share of absent data are other invertebrates (100%, EU average 36.5%) and molluscs (40%, EU average 20.6%).

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

The main reason for change is not reported for 1 freshwater habitat (3160) for 2 parameters in LT: overall conservation status and overall trend in conservation status.

No issues were seen with a lack of coherence between the main reason for change and the options selected in this field.

Non-bird species

For all species groups, overall CS and overall CS trend parameters showed the highest share of cases where no reason was filled in for the change and reason for change (both 40% of the total of 5 cases, EU average 32.1% and 39.9%).

The species groups where reason for change was not filled in for some parameters are identified are mammals 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

Where measures are needed but none yet taken for LT habitats, the highest proportion is seen with coastal habitat reports (100%, EU average 28.2%), forests (92.3%, EU average 22.6%) and freshwater habitat reports (71.4%, EU average 26.8%). There is 1 dune habitat where measures are needed but cannot be identified (11.1%, EU average 2.7%).

Where measures have been taken, the main purpose is for maintaining the current range for all bogs, mires & fens habitats, dune habitats, freshwater habitats, heath & scrub habitats, rocky habitats and sclerophyllous scrubs, with 83.3% of grasslands also reporting this as the main reason. The 1 forest habitat where measures are needed reports the main reason as increasing the surface area.

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Non-bird species

The groups with the highest percentage of measures needed but not yet taken are molluscs (100%, EU average 34.8%) and fish (81%, EU average 40%). The groups with the highest percentage of measures not needed are amphibians (75%, EU average 54.1%) and mammals (84.2%, EU average 46.9%).

Restoration measures taken for the habitat of the species seem to concern only arthropods (12.5% of the total number of records on the main purpose of measures that have been applied, EU average 8.5%), whereas measures to increase the population size or improve the dynamics concern mostly 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 LT measures were identified as not needed, the second most reported category was needed and taken. The third case most reported was needed and not taken.

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

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

Restoration measures for the habitat of species were not taken for any of the species as well as measures to increase the population size or improve the dynamics. Measures to expand the current range concern passerines and pheasants, partridges & grouse (33.3% and 50% EU mean 3.9% and 2.3%).

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

There is a high reporting of the actual value for the favourable reference range in LT i.e. from 33.3% for rocky habitats (1 habitat) to 100% for sclerophyllous scrubs (1) (also reported for freshwater habitats (7), heath & scrub (1) and grasslands (9)). Unknown (x) is reported only for 1 bogs, mires & fens habitat (12.5%) and the >operator reported for 1 dune habitat (11.1%). ≈ is reported in 5 habitat groups and ranges from 7.7% in forests (1 habitat) to 66.7% for Rocky habitats (2 habitats).

For the area parameter, the actual value is reported only for 2 coastal habitats (66.7%). The operators ≈ and > are more frequently reported. ≈ is reported mostly with freshwater habitats (100%), bogs, mires & fens (62.5%) and rocky habitats (66.7%). The > operator is reported mainly with heath & scrub and sclerophyllous habitat (100% but 1 habitat only reported in each group), and with forests (61.5%, 8 habitats) and dune and grassland habitat groups (55.6%, 5 habitats in each group). Unknown (x) is also used for 1 bogs, mires & fens habitat (12.5%) and >> is reported in 1 grassland habitat (11.1%) .

Non-bird species

For the parameter range, the highest share of unknown (x) value was reported for reptiles (66.7% of the values for the species group), followed by amphibians (27.3%) and non-vascular plants (25%). The operator > had a high share among vascular plants (61.5%) and molluscs (40%).

For the favourable reference population, the highest share of unknown value (x) was reported for other invertebrates (100%) and amphibians (54.5%). The operator >> had a high share among molluscs (40%).

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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.

LT report a high proportion of equality between habitat condition area and the area covered by the habitat for all groups except grasslands (44.4%, EU mean 51.8%).

Bogs, mires & fens (37.5%, EU average 20.3%), freshwater habitats (14.3%, EU average 15.5%) and grasslands (22.2%, EU average 16.5%) report a higher habitat condition. Dune habitats (11%, EU average 20%), forests (7.7%, EU average 25%) and grasslands (33%, EU average 29%) report a proportion with a lower habitat condition area.

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.

29% of Annex I habitat area reported in LT is covered by the Natura 2000 network. 8% of the land area (minus the sealed area) is covered by Annex I habitat.

For further details see the online statistics here.

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