



Data quality coherence check

Summary of results checking quality of data collected under the Nature Directives

Fact sheet

CY

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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 Article 17 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 purposes¹:

- assessing and enhancing completeness of the Natura 2000 network (Natura 2000 sufficiency assessments)
- preparation of the Union Lists (sites designated under the Habitats Directive by biogeographical region)
- quantification of restoration needs and prioritization in the PAFs

¹ The list is not exclusive

- providing a regular assessment of the State of Nature in the EU
- informing on progress towards the EU biodiversity strategy to 2030
- providing the biodiversity component of “The European Environment – State and Outlook report” (SOER)
- underpinning outreach products such as the “Natura 2000 Barometer and Viewer”

Furthermore, the information reported on species and habitats distribution, conservation status and trends, as well as on threats and pressures is highly relevant to assess cross-sectoral policy impacts.

The following analyses are better understood when seen together with the relevant dashboards. A description of the methodologies used in the following analyses and the dashboards can be found in links below. In some cases, the numbers of reported habitat types or species are small and this makes the calculated percentages for these particular cases not statistically robust. Therefore, attention should be paid to these values. Where possible, the number of observations has been placed in brackets next to the percentages. The analysis below is based on Member State level. Some of the online dashboards may contain a filter for biogeographic/marine region should the user wish to further investigate. The EU average refers to EU28.

Summary of the results for CY

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:

95.7 % of habitat types reported by CY were comparable between the Article 17 report and the Natura 2000 database.

Of this comparable proportion, it was found that for 54.6 % of the habitats, the habitat area reported within Natura 2000 was smaller than or equal with that reported in Article 17. This is much less than an EU average of 74.9%.

For the 45,4 % of habitats, the reported habitat area in Natura 2000 was greater than that reported in Article 17, which is much higher than the EU average of 25.1%. Of these records, slightly more than half (25 %) 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:

With regards to the Natura 2000 habitat area reported in Article 17 compared with the Natura 2000 area habitat submitted to the Natura 2000 database, the comparable records reach 98.6%.

For no habitat with comparable records the area within the Natura 2000 was equal to the area reported under Art. 17 (EU average is 1.38%). It was found that 40.8 % of comparable records for habitats were reported with a larger habitat area in the Natura 2000 than in the Article 17 report, which is lower than the EU average of 54.5%. 59.1% of the comparable records had a smaller habitat area in Natura 2000 than in the Article 17 report, higher than the EU average of 46.1%.

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:

The proportion of the comparable records reported in the Natura 2000 database and in the Article 17 report reached the highest value among Member States in Cyprus (34.3 %).

Of this comparable proportion, 96 % reported species population value in Natura 2000 as smaller than or equal with that reported in Article 17, which is more than the EU average of 80.5% and the third highest among Member States. The remaining 4 % of species reported a Natura 2000 population 1-1.5x greater than the Article 17 population, which is about half of the EU average of 8.3 %.

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 : 34.,3 %.

Of this comparable proportion, 28 % of species report a population in Natura 2000 greater than in Article 17, which is less than the EU mean of 32.5 %. The population reported in Natura 2000 was smaller than that in Article 17 at 72 %, 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 7% 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, 14.3% 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: 5.3%.

Of this comparable proportion, 25.9% 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%. 74.1% report a lower population in Natura 2000 than in Article 12 report, EU average 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 highlights 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

All habitat groups have a low proportion of missing information across fields and these are limited to the main fields: overall trend in conservation status, short term trend of habitat area in good condition, short term trend of area covered by the habitat. Freshwater habitats additionally report missing information for the field future prospects of area (25%, EU average 11.5%) and coastal habitats report missing information for favourable reference area (40%, EU average 14.7%). The latter is the highest proportion of missing information for any parameter in any habitat group for CY.

Overall, the highest proportion of missing information is seen with freshwater habitats (4.3%, EU average 12.3%). There is no missing mandatory information in CY for the habitat groups: Sclerophyllous scrub, forest habitats, grasslands or rocky habitats.

Extrapolation is the most reported method used across all habitat groups except grasslands where complete survey is mostly reported (56.3%, EU average 22.9%). The use of expert opinion ranges from 2.3% (EU average 11.3%) for forests to 17.5% (EU average 16.6%) for rocky habitats. Insufficient data is not reported for any habitat group.

Non-bird species

A high proportion of missing mandatory information was spotted in mammals (33.5 %, EU average 19.1%), followed by arthropods (20.8%, EU average 18.9%), reptiles (12.5%, EU average 18.9%) and amphibians (9.5%, EU average 16.3%). The highest proportion of missing mandatory information for mammals is distribution map (100 %, EU average 5.1%), the short-term range trend (95 %, EU average 21.3%) and short-term population trend (91 %, EU average 41.9%). For arthropods there was no information reported on future prospects of population, short-term population trend at all. A high proportion of missing data in reptiles were in the parameters: future prospects of population (85 %, EU average 33.3%) and short-term population trend (77 %, EU average 37.3%), for amphibians was no

information on the future prospect of populations and short-term population trend. For vascular plants all information was reported.

Across all species groups (except vascular plants) there is a consistent high proportion of missing information for the parameters: short-term population trend and future prospects of population.

Expert opinion and insufficient data are reported the most for the mammals group (31.2%, EU average 26.8%, 34.4%, EU average 17.5%, respectively)

Bird species

The bird groups cuckoos, petrels, storm-petrels & shearwaters, cranes, rails, gallinules & coots, passerines and kingfishers, rollers, bee-eaters & hoopoe are those which report the highest proportion of missing information across all mandatory fields in the reporting format (25%, 22.2%, 17.1%, 17% and 14.6% of all fields, respectively). This is higher than the respective EU averages of 12.9%, 18.9%, 17.1%, 13.9% and 14.1%.

Two bird groups with reporting missing mandatory information for wintering species (trend information) are the kingfishers, rollers, bee-eaters & hoopoe, passerines, pigeons & doves and grebes. The groups reporting 100% missing information on hunting bags are ducks, geese & swans and cranes, rails, gallinules and coots (100%). Missing information is also reported for passerines for hunting bags. The highest proportion of missing information on the short-term trend within the SPA network is seen with species groups: petrels, storm petrels and shear waters (100%, EU average 44.3%), owls (100%, EU average 30.3%) cranes, rails, gallinules & coots (60%, EU average 39.6%). Several species groups reported the long-term trend in breeding population as field missing or unknown, the highest proportion is seen with cuckoos (100%, EU average 39.4%), passerines (68.2%, EU average 34.4%) and swifts and night-jars (75%, EU average 43.8%).

The highest proportion of expert opinion is seen with owls (73%, EU average 36%) and the group reporting the highest proportion of insufficient data in the methods field is petrels, storm-petrels & shearwaters (50%, EU average 52%)

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, CY reports mainly complete survey or partial estimate for all habitat groups. The only reporting of expert opinion was with 1 freshwater habitat.

A similar pattern is seen with the parameter structure & functions. 1 habitat from both the coastal and forest habitat groups report expert opinion as a method used.

Overall, for CY habitats there is a high proportion of higher quality methodologies used to assess the parameters.

Non-bird species – methods used

The majority of the assessments are based on partial estimates (70%, EU average 51%) followed by complete survey (26 %, EU average 21.4%). Amphibians and arthropods represent groups with complete survey used, exclusively. Large proportion of parameters assignments for mammals were made using the expert opinion method. Besides mammals, population estimates were made mostly

by partial estimates in other species groups. Absent data are reported for only 2 mammalian species reports in parameter habitat of the species.

For further details see the online statistics [here](#).

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

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

Habitats

There are no cases where either no main reason for change or multiple reasons for change (and main reason for change cannot be established) is reported for habitats in CY.

There are also no cases where the main reason selected is incoherent with the reasons selected for this field.

Overall, there are no issues with CY completing the change and reason for change field for any habitat assessment.

Non-bird species

Where no main reason for change is reported with CY non-bird species, this is seen for only 1 species report for 3 parameters: overall trend in conservation status, population and range and is for the mammal group (1307 *Myotis blythii*).

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

For the majority of habitat reported in CY conservation measures are reported as not needed. The exceptions to this are 2 coastal habitats (20%, EU average 61.9%) and 3 forest habitats (27.3%, EU average 60%) where measures were needed and were taken. The main purpose of the measures for the coastal habitats was for the purpose of restoration of structure and functions. For the forest habitats the main purpose was to maintain the current range for 2 of the habitats and to restore the structure and functions for 1 habitat.

There were no habitats reported where measures were needed but could not be identified or where measures were needed but had yet to be taken.

Non-bird species

There is no species identified that it needs measures but they cannot be identified in Cyprus. Only two species of mammals are reported as needing measures but they are not taken (9.1%, EU mean 12.5%). All other groups either do not need any measures (amphibians, arthropods, vascular plants) or the proportion of species that do not need measures is exceptionally high (84.6%, EU average 57%) and for the rest measures are already taken (reptiles). This situation is unique and best among Member States.

The majority of measures intend to either maintain the current status (83% in mammals) or increase the population size (100%).

Bird species

Breeding: For the majority of breeding species reported in CY measures were reported as not needed, the second most reported category was needed but not taken. None of the breeding species was reported in the category of conservation measures needed but not identified.

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

Passage: The most reported measure in CY for passage species was needed and taken, then needed but not taken, and the third, not needed.

Restoration measures taken for the habitat of the species seem to concern only ducks, geese & swans (50% of the total number of records on the main purpose of measures that have been applied, EU mean 2.8%), whereas measures to increase the population size or improve the dynamics as well as measures to expand the current range were not taken for none 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

No actual favourable reference values are reported for any CY habitat.

For the range parameter, \approx was used for the favourable reference range for all habitat groups apart from 1 grassland habitat where $>$ was reported.

This is also reflected with the area parameter although the coastal habitat group also reports unknown for 4 habitat reports (40%) and $>$ for 1 habitat report (10%).

Non-bird species

There are used operators, only a small proportion of favourable reference population and only for reptiles had been reported with the actual value (8%). The operator "approximately equal" (in fact also an actual favourable reference value) and actual value was used for most of the favourable population in reptiles (62 and 15, respectively) and vascular plants were reported exclusively as actual value. There is missing reported actual value for favourable range in all species and all amphibians, arthropods and vascular plants were "approximately equal" to it. In the rest of groups the operator "approximately equal" was used in the vast majority of species (reptiles - 92%, mammals 73%).

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.

The habitat groups forests, freshwater habitats and sclerophyllous scrubs all report an equal habitat condition area to the area covered by the habitat. Dune habitats report the lowest equality (60%) but still above the EU average (51.5%). This is also the case for the remaining habitat groups that do not report 100% agreement between the habitat condition area and the area covered by the habitat (coastal, rocky and grassland habitats) - their percentage agreement with the area covered by the habitat is greater than the EU average.

The remaining Dune habitats report a mixture of either higher or lower habitat condition area than area covered by the habitat.

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.

CY reports 41% of Annex I habitat area as being covered by the Natura 2000 network. Overall, the Annex I habitat area is 31% of the total land area (minus sealed area).

For further details see the online statistics [here](#).