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	Note
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Concerns	Population units of species of the Habitats Directive annexes
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Population units of the species of the Habitats Directive annexes

The choice for a common unit of population size for reporting under art.17 of the Habitats Directive seems inevitable. Of course it is needed to get a European-wide idea about conservation status of species and the eventual causes of decline, in order to act correspondingly. It is an important step in the quest for standardization. However, the high diversity of species groups and life forms makes standardization of population units extremely hard, especially when trying to stick to a single denominator (as to now: number of (mature) individuals). We will add some remarks on the existing papers and on the discussion done in Helsinki.

What is not included in this note:

- a restart of the discussion on the feasibility to report (mature) individuals (we have added only our opinion about what we expect for the Belgian situation);
- a discussion on units for species which will not be reported as individuals, since in Helsinki there is decided to go back to the concept of localities and try to elaborate the definition of "localities" more; this means that the discussion has to be done on the basis of a new proposal;

1. Annex V species

We strongly support the conclusion of the Helsinki meeting to skip the population size for Annex 5 species. For these species it might be assumed that trend reporting is sufficient since the ultimate aim of the Directive is to maintain a good conservation status. Because their actual status as annex V indicates that there is room for exploitation and, hence, their status might be considered as not threatened at the European level (given they don't belong to annex II or IV as well), no absolute numbers of individuals are strictly required to evaluate their status as annex V species. Since trends can be reported based on other units than population size (as mentioned also in the discussion paper of 07/05/2009), the conclusion could be that other units than (mature) individuals can be used to report the population status of annex V species, given there is any need for the reporting of population sizes at all for this category.

To do: for annex V species, choosing for trends not based on (a follow-up of) mature individuals, means that guidelines have to be developed and adopted as to how to approach these trends for such species or genera (see also § 5). If this is not feasible it will still be advantageous to add some examples to inspire other Member States because no doubt it will lead to a more homogenous approach throughout the EC.

2. Need for further specification of the term "(mature) individuals"

Although it seems to be decided to use a single population unit for reporting (i.e. mature individuals), questions will immediately rise about what is considered under "mature", and whether there is room for using a selection of individuals for reporting, e.g. the number of calling males (amphibians), reproducing females in summer colonies or individuals in accessible winter quarters (bats). This is certainly a point of consideration knowing that the extrapolation of these population units into absolute population numbers is hard to make as long as most member states do not have established their monitoring schemes. Indeed, only based on due monitoring, conclusion about the reliability of these extrapolations can be assessed. Directly monitoring of the absolute number of individuals is for some species (groups) far from feasible in the short run, if ever. Species specific recommendations about calculation of population sizes and identification of problematic species groups is certainly and urgently needed in order to attain the required level of standardization (as mentioned also in the discussion paper of 07/05/2009).

To do: taking into account the above mentioned problems / ideas it is still necessary / advantageous to make a list of species groups (and if necessary even at species' level) for which a recommendation is needed about the most appropriate way of counting and, based on these counting's, how the total number of mature individuals should be derived in a systematic way.

e.g. for frogs and toads a sampling method which is normally used (feasible, method with least pressure, ...) is counting calling males. It has to be decided / guided to:

- a. report this number as is, i.e. the number of calling males (the most reliable number)
- b. or "number of calling males x Y", where Y is a number decided by each member state, based on real monitoring data about the already mentioned relationship because these relationships can be highly location or habitat specific.

3. Include the basic information on population size in the reporting form

Since the population size for common species will often be an extrapolation of "distribution" using "some (statistical) liable estimate of the density along with its variation" it seems advisable to report this information directly (e.g. each as a min – max). This will make it possible to interpret the data much better than if only the integration of both numbers is given. Then is also the information available on which trends will be reported (see § 5).

When also the number of localities is reported on which the density estimation is given, an objective measure on accuracy is available at once.

Note: in more general terms the assessment of the European conservation status will be more reliable and robust when the baseline data are available and used for assessment at the European level (this is in contrast with the current approach where only integrated data are available). This will lead to a new challenge to define a common level on which it makes sense to compare and integrate baseline data. But when this leads to more robust results it is worth to give it a try.

4. Level or absence/presence of recruitment

The actual focus on (absolute) number of individuals is for some species too restricted. Besides the adult individuals that are observed, especially the level of recruitment is as or even more important when estimating the viability of populations. This is especially true for long living animals (see e.g. note of Annemiek Adams on population units). Recruitment is considered a decisive criterion in the evaluation matrix for species though when evaluating the aspect "reproduction, mortality and age structure". By only including information about future prospects, range extent, habitat area (actual or potential), the number of adults and the trends of these numbers, the long term survival of many or some species can not be sufficiently assessed if recruitment is not considered.

To do: the importance of recruitment for the assessment of CS differs between species (e.g. long living versus short living). Moreover, for some species the assessment of recruitment will never be feasible. Therefore it is advisable to list for which species or species groups the criterion "recruitment" is necessary/wanted/feasible.

We advise to add the "level/presence of recruitment" in the reporting format, at least in the complementary information^[1]. This information is needed to identify the key variables that were decisive for the overall outcome of each of the criteria that determine conservation status (range, population, species' habitat and future prospects). This is not the case in the reporting format 2007 for the criteria "population" and "species' habitat" due to the absence of an explicit assessment of recruitment ("reproduction, mortality and age structure", as mentioned in the evaluation matrix)

and habitat quality. Since recruitment must be evaluated together with population size when judging population condition, it is better to mention it somehow on the report form too.

5. Focus the discussion (also or) more on trends

Trend information, favourable reference population and (eventually) recruitment are the key subcriteria to determine the conservation status of the criterion “population”.

In order to obtain an accurate trend analysis, an accurate estimation of population size is a prerequisite. At most, this will only be feasible for rare species within the member states.

It is clear to all of us that rough estimates on population sizes will be the case for most (more or less) common species in the member states. This will lead to trend analyses with only low reliability or which are not usable at all. It was discussed (agreed on??) in Helsinki to estimate trends based on a combination of “distribution” and (statistical) samples of population densities. Such an approach definitely requires clear guidelines to achieve at least some level of standardization.

Note: trend analysis will also be a key issue in WP 3.

6. The Belgian situation with respect to “mature individuals”

Regarding the Belgian species of annex II and IV, the need to report population size as number of (mature) individuals is not expected to cause serious problems in the long term if clear guidelines for certain/each species (groups) will be provided (as to how the number of mature individuals must be interpreted) AND broad categories (e.g. large difference for min – max) are accepted for more common species. Also, we will need a transition period during which the necessary monitoring can be set up and the information on the variables that are needed for extrapolation/conversion of existing data, or simply new data on numbers and occurrences, can be gathered. During this transition period data quality will be poor and for the next reporting (2013) we expect a serious increase of “unknown” for this criterion.

For most species we expect to have (rough) numbers of individuals available (and hopefully reliable information on trends) at the time of the 2019-2020 reporting.

For Belgium we can't add more species to the “exception list for not using individuals” for reasons of not being able to define “an individual” of the species. However, we are afraid to have some species for which it will hardly be feasible to report the exact national “number of individuals” in a sense that it will give real information (e.g. *Vertigo moulinsiana*).

To consider: a possible solution to avoid a drastic increase of unknown in the next reporting(s) is:

- indicate for which species(groups) it is still possible to use e.g. localities in stead of number of individuals in the next reporting round;
- to use not only the argument “not possible to define the individual” but also “it is in reality not feasible to give any useful number or min. – max.” as a reason to add species to the exception list.

[1] we already have advised to add [the explicit evaluation of](#) habitat quality (see our note on “habitat of the species”)