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CRITERIA FOR THE ASSESSMENT OF CHANGES IN THE EMERALD NETWORK DATABASES

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Background

In the past decade there is a substantial progress in establishing the Emerald Network and many Contracting Parties to the Bern Convention are repeatedly submitting new versions of databases. In most cases, following the insufficiencies indicated in the conclusions resulting from the bio-geographical seminars, countries extend their ASCI network by adding new sites and/or enlarging existing sites, or adding new species and habitat records both to the new and already existing ASCIs. These are positive changes.

At the same time, a number of negative changes occur, when some sites are being deleted or reduced in size, and species and habitats are being deleted from site Standard Data Forms. This document will focus primarily on assessing this type of changes.

Already back in 2017 the Secretariat initiated the preparation of Guidelines for Explaining Negative Changes in Emerald Network Proposed, Candidate and Adopted Sites. These guidelines were approved by the Group of Experts on Protected Areas and Ecological Networks (GoEPAEN) and the Standing Committee the same year and was published on the Convention's web page under the chapter "Guidelines for submitting Emerald Network data"[1]. This means that every time a Contracting Party is intending to deliver a new version of Emerald Network database to the CDR including negative changes it should use this document to explain the negative changes.

In the meantime between 2017 and 2021, the European Commission has published two documents on the negative changes in the Natura 2000 Network databases for the EU Member States: about de-designation of sites or part of sites (2019)[2] and removal of habitats and species from the subject of protection in Natura 2000 sites (2021)[3]. Both notes are focusing on the conditions and justifications for such negative changes and recalls the main principles established by the Court of Justice of the European Union (CJEU).

Also during the past few years, thanks to assistance from the European Environment Agency, the Emerald Network dataflow has been remarkably improved and modernised. One of the new functionnality is the automated change reports that can be generated immediately after a new database is submitted to the CDR and which shows all aspects of changes (including negative changes) by comparing the new database version with the preceding version. This enables the Bern Convention Secretariat to follow the developments of the network in a quick and efficient way.

The aim of this paper is to (1) propose a procedure for detecting changes in National Emerald Network databases and to (2) set criteria for assessing the extent to which negative changes are acceptable.

Existing documents and tools

The Emerald Network document "Guidelines for Explaining Negative Changes in Emerald Network Proposed, Candidate and Adopted Sites (2017)" is by content very similar to that which was published on the Natura 2000 Reference Portal[4] since 2009 for EU Member States, and was recently replaced by more detailed guidelines and forms in 2019 and 2021.

Both the Emerald Network and Natura 2000 guidelines distinguish two levels of negative change. First, the de-designation of sites or part of sites and, secondly, the removal or downgrading of habitats and species in the Standard Data Forms which are the official documentation of the sites in both networks[5].

De-designation is primarily a spatial reduction of a site, in part or entirely, and it is reflected in the new updated lists of Adopted and Candidate ASCIs for the Emerald Network and in the Union Lists for the Natura 2000 network. Deletion of features is rather a qualitative reduction of site characteristics and a shift of priorities in setting the conservation objectives and the future management of the site. It can also affect the overall network

[1] https://rm.coe.int/guidelines-for-explaining-negative-changes-in-emerald-network-proposed/168073f68c
[2] https://circabc.europa.eu/ui/group/fcb355ee-7434-4448-a53d-5dc5d1dac678/library/8555aa28-9fb6-411f-8228-f8c99b296564/details
[3] https://circabc.europa.eu/ui/group/fcb355ee-7434-4448-a53d-5dc5d1dac678/library/d4da0507-a8eb-42f1-b629-23452b5fc37c/details
[4] https://cdr.eionet.europa.eu/help/natura2000
[5] It should be noted, however, that an update of the Standard Data Form is currently under discussion in the EU and this may pose implications to future possibilities to record any changes

sufficiency for a particular feature if deleted population or area had importance at national, regional or bio-geographical level. In quite many cases the area reductions and deletions of features are closely interlinked.

The Emerald Network document (2017) is limited to describing what explanations are required from countries for both types of negative changes, but the Natura 2000 Network documents (2019, 2021) also provide principles how the received information will be interpreted. They describe the circumstances when sites or their parts can be de-designated and habitats and species can be removed from the SDFs. Also in these documents the justifications that should be provided by countries are developed to a greater level of detail.

Negative change can occur with or without prior notice. If a change is not communicated by the countries in advance, the only way to detect it is to compare the new submission(s) with the previous version(s) of databases.

Automated change reports have initially been developed for the Natura 2000 Network, but later adapted for the Emerald Network. The reports contain both descriptive and tabular aspects of change (Figure 1). In the descriptive part (i.e. change between two databases) they are presented at the level of individual sites, habitats and species, but data can be arranged also, for example, by type of change: addition, deletion, modification. The spatial part includes statistics from the spatial dataset about changes, including, for example, statistics on the percentage of the total site area affected by a change. Additionally, a map outlining a change of site geometry is auto-generated (Figure 1, B). Both parts of the tool are still in the process of development.

Automated change reports are aimed to be an informative tool for a quick check of changes and assessment of their scope and nature, yet they cannot inform about the reasons behind these changes, and there is no place for such explanations in the SDF. Very seldom they are obvious to analysts and in a majority of cases the reasons are known to database operators at national level. This again highlights the need for additional explanations.

A Descriptive **B Spatial**

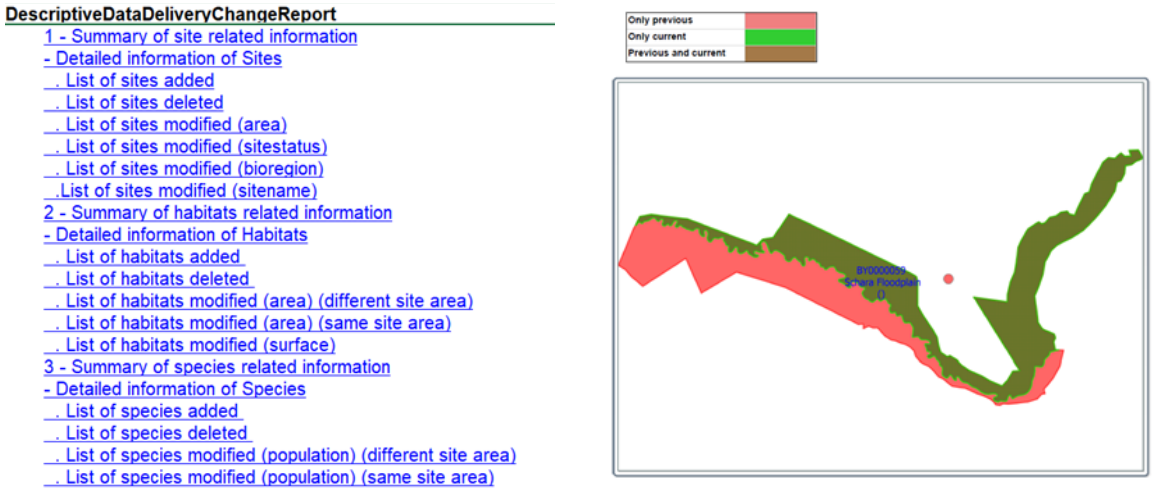

Figure 1. Illustration of contents of the auto-generated change report: A: descriptive part; B: spatial part.

To summarise, automatic tools (change reports) to obtain information about changes in Emerald Network sites after the submission of the databases are in place. But these tools do not provide explanations about the considerations which underpin the negative changes in the database and more information is requested from the countries to be submitted together with the database. Although the guidelines for the preparation of such information have been prepared a few years ago, they are obviously rarely used.

In addition, there is a need to develop criteria in order to judge if negative changes are acceptable. It would also be beneficial to more precisely define the place and the legal framework of the change assessment into a wider process of updating Emerald Network databases.

Possible criteria: examples from the Natura 2000 Network

In principle, no criteria for acceptable negative changes have ever been discussed and thus applied for the Emerald Network. And despite the presence of the guidelines for explaining negative changes (2017), no required explanatory files have been attached to the submissions. But even if such information would have been provided, it would have been difficult to interpret it because of the absence of criteria regarding margins of acceptance.

The negative changes in the Emerald Network, however, were discussed in the bio-geographical seminars (2018-2019) but only from the network sufficiency point of view and at the level of each feature (even if the previous conclusion was sufficient) without going into details and looking at justifications of changes in each particular site.

In this situation it would be useful to look at the experience from the EU's Natura 2000 Network which has the same objectives and procedure. In the EU guidelines the criteria for de-designation of sites or part of sites (2019) and removal of habitats and species from the subject of protection (2021) are following the same logic, and they apply all features: habitats, non-avian species and birds.

There are three main circumstances provided when negative changes could be justified which read as following:

- A proven, genuine scientific error — [A site had no scientific value; a feature did not exist at the time of designation, nor such value or presence has been established until the present day[6]]
- Natural developments — [Not man-made impacts on site or feature that could not been prevented]
- A consequence of an application of Art. 6 (4) of the Habitats Directive — [The site or feature is irreversibly lost due to overriding national interests but adequate compensation measures are ensured]

It should be noted that detailed justifications are required for each of the above circumstances. Mere claims about fulfillment of the conditions presented above are not evidence-based and are not sufficient.

If a change cannot be classified under one of the above circumstances, it cannot be justified, i.e. the change in the database is not permitted. If a feature (most often a species) has disappeared from the site but the "natural developments" criterion cannot be proven, the feature must be transferred to the NP (non-presence) field of the SDF and in the future efforts for recovery should be foreseen. Such data-field is already in the Emerald Network SDF (Chapter 3, Ecological Information[7]), but like in the Natura 2000 SDF so far it has been only optional. Thus in the future this field would have a concrete application and meaning.

Regarding the negative changes in site boundaries, in the past there was an "operational" numeric criterion that area reduction constituting up to 5% of the site area or up to 100 ha for large sites can be accepted without further questioning. In the 2019 and 2021 guidelines such approach no longer exists, and each reduction of site area should be assessed irrespectively of the size of the omitted part.

It is emphasised that the removal of species and habitats from SDFs and de-designation of areas should be of exceptional nature. Particularly regarding the de-designation of sites, the Commission should be consulted prior to any action.

Criteria: proposals for the Emerald Network

How far the process of assessing negative changes in the Emerald Network should follow the procedures established for the Natura 2000 Network? Below a synthesis is provided including the existing Emerald Network and Natura 2000 procedures together with additional considerations and arguments. Possibly this question should be also looked from a legal point of view; this report focused primarily on aspects of biology and bio-informatics.

[6] Here and below it is a shortened description. For complete text, please consult original document.
[7] https://rm.coe.int/1680746bfa

Prevention of negative change

Before deciding to do a negative change, countries should double-consider if it is really necessary and if there are no alternatives to avoid it. The change should not be triggered, for example, by a not-verified information or purely economic considerations. Countries should consult the criteria and the information required to justify the change. In any case the frequency of negative changes should be kept to a minimum.

At the same time, it is understandable that many first databases submitted by countries due to the lack of experience may contain errors of various kind (tabular data input, spatial, misinterpretations and misidentifications etc.). No doubt that such errors need to be corrected once identified and justified.

Criteria for assessment of change information

In the EU documentation (2019, 2021) the "criteria for change acceptance" are formulated as the description of circumstances when sites (or their parts) can be de-designated and/or when features can be removed from the subjects of protection. For both levels (site and feature) these acceptable circumstances are following the same logic, but the information required may differ in some aspects.

In our opinion at least the two first criteria are highly relevant for the Emerald Network (Table 1). If the condition is met, or not met (criterion No. 4), it leads to a concrete acceptable action in the SDF.

The relevance of criterion 3 is uncertain. Article 9(1) of the Bern Convention states that Each Contracting Party may make exceptions from the provisions of Articles 4[8], 5, 6, 7 and from the prohibition of the use of the means mentioned in Article 8 provided that there is no other satisfactory solution and that the exception will not be detrimental to the survival of the population concerned. One of the conditions listed is "in the interests of public health and safety, air safety or other overriding public interests". The difference between Article 6(4) of the EU Habitats Directive and Article 9(1) of the Bern Convention is that the compensation is not an express criterion in the Bern Convention[9]. However, it is not clear if the Bern Convention condition that "exception will not be detrimental to the survival of the population concerned" (the sentence which is missing in the Habitats Directive Article 6(4)) may also be interpreted as a call for a compensatory measures. Furthermore, Recommendation No. 208 (2019) of the Standing Committee[10] introduces a hierarchical approach for response options to changes, in which Parties would first seek to avoid adverse change where it can be avoided, then mitigate (including by habitat restoration) where it cannot be avoided, and then provide habitat compensation where it cannot be avoided or mitigated.

Table 1. Possible interpretation of criteria used by the EU in the context of the Emerald Network.

Reason for negative change (criteria)	Implications for database (SDF)	Additional conditions
1. Scientific error	Remove from SDF, or area reduction in SDF (for sites)	Evidence needed that a site had no scientific value; a feature did not exist at the time of designation, nor such value or presence has been established until the present day
2. Natural development	Remove from SDF, or area reduction in SDF (for sites)	Evidence needed that the loss was caused by not man-made negative impacts and that it could not be prevented

[8] Article 4 of the Bern Convention covers the protection of habitats and areas for migratory species which covers the Emerald Network

[9] https://rm.coe.int/emerald-network-report-obligations-2020/16809fce67

[10] https://rm.coe.int/2019-rec-208e-ecological-character/1680993e26

3. Application of Article 9(1) of the Bern Convention[11]	Remove from SDF, or area reduction in SDF (for sites); compensatory value added to other new or existing SDF	Provided that a site or a feature is irreversibly lost due to overriding national interests, country needs to ensure that the damage is detrimental to the survival of the population or area concerned at national level[12]
4. Other	Move the record to NP (non-presence) field of SDF	In the future adequate conservation measures need to be implemented to give chance to species return or habitat recovery

The change is not permitted if the case does not correspond to one of the first criteria in Table 1. In the case of species or habitat loss due to other reasons than foreseen in the above 3 criteria, the feature could be shifted to the "non-presence category". Importantly, this does not mean that it is removed from the subjects of protection in a given Emerald Network site, but that countries need to establish adequate conservation measures to re-establish populations or habitat areas.

If the general concept of using the above criteria is approved, more detailed definitions and conditions for each criterion could be developed.

Applying the criteria would be a case-by-case exercise. This means looking at every case of negative change both at the site and feature level. To reduce the workload, an additional numeric criteria could be established to filter out seemingly less significant cases regarding the changes in site boundaries. For example, cases not exceeding 1, 5 or 10% could be excluded. Regarding deleted features, it could make sense to filter out deleted "C" sites provided that there are at least certain very large number of other sites remaining in the network. But this could be done only for practical considerations, as no scientific justification can be given to such arbitrarily selected threshold.

Information necessary to apply criteria

In order to assess if any of the above criteria can be applied in each case under scrutiny, a certain amount of relevant information is needed. It can be obtained from the Change reports or requested from the countries.

In the past, both in the EU and non-EU countries, post-factum communication with countries occurred to justify/explain the changes already introduced in the databases, and corrected databases were re-submitted. In the case countries were not able to provide justifications, they were asked to re-install the site boundary as before or to change the tabular records back to the initial situation. This was a quite cumbersome procedure and sometimes even created further mistakes and misunderstandings.

From this perspective, it would be better if the soundness of negative changes is agreed ahead of the change itself. On the other hand, if a bulk of communication takes place before the submission, countries must prepare most of the required information themselves. In the case of post-factum communication, the changes can be investigated using auto-generated Change reports (Figure 1, see above), and countries would only have to provide additional information regarding the reasons of change.

The best way forward for the Emerald Network might be the compromise between the two options. The **de-designation of site areas** occurs much less often than the removal of features from SDFs. Thus, it would be feasible to cover the related issues **ahead of actual change**. This is also important because changes at this level directly affect the lists of Adopted ASCIs which are being updated every year. In case of multiple changes, a dedicated bilateral meeting could be called, but it can also be communicated by e-mail when one or few changes are planned. Usually, bio-geographical seminars do not deal with justifications of changes in particular sites with a few exceptions when changes may affect the overall sufficiency of a particular feature.

The removal of features from SDFs could be assessed **after the submission of the database** using the automated change reports and using additional information supplied by countries in accordance with the

[11] To be confirmed if this can be used from the legal point of view
[12] The formulation to be precised by a legal expert

"Guidelines for Explaining Negative Changes in Emerald Network Proposed, Candidate and Adopted Sites". If feature deletion cannot be justified according to the criteria, countries should be asked to change the record back to the initial one, or to use the non-presence field.

When deciding about the scope and the level of detail of information to be asked for, the Bern Convention Secretariat should also care about the availability of sufficient experts to analyse the submitted information and to respond in a timely manner to country queries. Unfortunately, the nature of the information required is not suitable just for numeric analyses and automated or semi-automated decision making. To a large extent, the conclusion on the acceptance or non-acceptance of changes will require the insight of experts. Automated change reports will only help to list the changes.

To avoid a detailed investigation of the origin of the scientific error or of the type of natural development one option would be to ask the "independent national scientific authority" to confirm that the removal of site or of feature can be justified by one of these criteria. Very often local experts are much better informed than someone doing similar analyses from another country.

The existing "Guidelines for Explaining Negative Changes in Emerald Network Proposed, Candidate and Adopted Sites" (2017) seem in general to cover most of the explanatory requirements listed in the most recent EU guidelines (2019, 2021). For example, at site level it distinguishes technical corrections of spatial errors from other reasons for change, and stresses the need to explain consequences on habitats and species present if some areas are removed. At feature level, it provides guidance on how to explain changes due to new scientific information and to assess possible effects on the network sufficiency.

At the same time, in the existing guidelines the information required is not as detailed as for Natura 2000. It does not specify as precisely which questions countries should answer to justify the application of the criteria. It does neither specify what type of maps countries should supply to describe the intended change. Possibly more detailed explanations should be required to distinguish between natural and human-induced developments and to document the use of the non-presence option in the SDFs for currently lost features.

The proposal to use a single table in MS Excel format to provide justifications for every change type is still very good. Yet the guidelines describe only a minimum amount of needed information and a very general description of expected contents (structure) of such table. It would be potentially useful to develop a template of a fill-in table in the same format that could be used directly by countries.

In conclusion, a moderate update of the Guidelines would be necessary, but this should be done only once the criteria for acceptance of changes are approved. It would also be necessary to enforce the use of the existing guidelines to explain negative changes up to the possible rejection of a new database submission if no explanations are provided. It would be easy to perform a routine checking for every new database submission if negative changes occur (using auto-generated change reports in the Emerald Network WebApp) and, if so, look for the presence of the explanatory file.

Post-submission assessment

Even if a change is agreed on between the Bern Convention Secretariat and a Contracting Party ahead of the database submission, the automated Change reports must be used to crosscheck whether the change was done according to what was agreed on.

Concluding remarks

This document proposes a set of criteria that should be used to evaluate if negative changes in the Emerald Network database are acceptable so that they do not jeopardise the integrity of the network and they are not detrimental to the survival of the populations of species and habitats.

In order to apply these criteria, certain types of information are needed. Thus the paper also discusses the best ways to collect such information and the roles of different stakeholders in this process. Several questions regarding how to optimise the dataflows remain open for discussion. The whole process of assessing negative changes should be seen as an integral part of the development of the information system about the Emerald Network (Emerald Network WebApp).