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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE  
AND NATURAL HABITATS

**Standing Committee**

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**Group of Experts on Protected Areas and Ecological  
Networks**

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**THE CONCEPT OF THE “ECOLOGICAL  
CHARACTER” OF SITES IN THE BERN  
CONVENTION/EMERALD NETWORK CONTEXT,  
AND OPTIONS FOR ADDRESSING CHANGES IN  
ECOLOGICAL CHARACTER**

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## SUMMARY

Parties to the Bern Convention are required under Article 4 to take measures for the conservation of habitats and the protection of areas, and the Emerald Network has been created as a primary mechanism for delivering this. Relevant guidance to date has concentrated on site selection, evaluation of Network sufficiency and proactive habitat management.

Parties are also expected, notably under Resolution No. 5 (1998), to protect sites in a *reactive* manner, by responding to influences which may from time to time threaten to have a negative effect on the “ecological character” of the sites. That term has however not been defined under the Convention, and there is little guidance overall on this reactive dimension.

This report seeks to address this gap, by identifying steps towards a more complete and conceptually robust basis for defining ecological character, setting an appropriate baseline for its description at individual sites, establishing arrangements for monitoring, distinguishing significant change from trivial change, judging the likelihood of potential change, examining the roles of risk assessment, impact assessment and the precautionary approach, and identifying options for responding to change, including considerations that apply at a strategic (network) level.

What is presented here therefore offers an expanded interpretation of existing Convention provisions, and suggestions for possible guidance that would assist Contracting Parties in their implementation of these existing provisions. The report makes no proposals for any new requirements on Parties.

Reference is made to related regimes in other international fora, notably the Ramsar Convention, where a concept of “wetland ecological character” is the foundation for that Convention’s site protection system, and where its application is supported by a large body of guidance.

A concept of the ecological character of an Emerald Network site should derive from an identification of the values represented by that site. This partly concerns the factors which contribute to the site’s qualification against the criteria for “special conservation interest”, but since the conservation objective is “favourable status” of species and habitats, “ecological character” must embrace a broader description of the site’s attributes than those representing merely the minimum qualifying conditions. Describing an appropriate reference condition (as a baseline for change assessment) should also take account of any long-term variability.

Given the element of prediction and judgement involved in identifying changes that are “likely to affect” Emerald sites, it is important to take a precautionary approach (i.e. “if in doubt, report”). Approaches drawing on methods for risk assessment can be useful in this regard. Countries will also need to ensure that they have adequate frameworks for monitoring and surveillance of Emerald sites (and of plans and decisions that may affect them), to pick up early warning of potential changes.

Significance of a change or likely change in ecological character may be judged in several ways, for example in terms of its absolute magnitude, in terms of departures from a defined baseline norm, by reference to specific vulnerabilities defined for a site, by reference to a defined bandwidth of “acceptable” variation, or combinations of these. Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) are important tools for evaluating the significance of changes and the implications for the conservation objectives of a site. Much international guidance on EIA and SEA exists, and there could be a case for the Bern Convention adapting aspects of this for adoption in its own context.

Bern Resolution No. 5 (1998) also provides for the Standing Committee to advise on steps to be taken in response to a given instance of change or likely change affecting the ecological character of an Emerald site. The report discusses some of the main types of response available, and effective ways of applying them. Normally the approach to take will be a hierarchical one, whereby 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. Experience on various aspects of this is evolving all the time (including through the Convention’s own “case file” system), and again there could be a case for distilling some of this into updated guidance.

Changes in ecological character at an individual site, as well as potentially impacting on the conservation of the site, may also affect the maintenance of the “sufficiency” of the Emerald Network as a whole, and/or the overall long-term survival of the species and habitats concerned. These strategic considerations may be important in determining the particular measures that are necessary in a given case to avoid, mitigate or compensate for any loss of ecological value at a site. This latter aspect has not so far been explored in existing Emerald guidance.

The report concludes by making three recommendations for possible future action in this area, as follows:

1. The Secretariat, with the support of the Group of Experts on Protected Areas and Ecological Networks, should undertake a broad consultation among Contracting Party representatives, suitably qualified international organisations and others, to invite comments on the present report, suggestions for feasible and appropriate measures for acting on its findings and offers of support for further work on the issues it covers.

2. The Standing Committee should be invited to mandate the development during 2018 of a framework of guidance for possible adoption under the Convention on describing the ecological character of Emerald Network sites, and on detecting, reporting, assessing and responding to changes and likely changes in such character; as an aid to Parties for their implementation of Resolution No. 5 (1998) and Article 4 of the Convention, and in support of the Convention’s contribution to the achievement of the Target 11 in the Strategic Plan for Biodiversity 2011-2020. Such guidance could include, but need not necessarily be limited to, the following possible items:

- A definition for Bern Convention purposes of the “ecological character” of sites and of “change in ecological character”, indicating links where appropriate with relevant data fields in the Standard Data Form for Areas of Special Conservation Interest, and being accompanied by advice on defining appropriate baseline/reference conditions (in relation for example to underlying natural change or variability).
- Ensuring compatibility with the concepts and approaches in operation on this subject in other relevant international environmental conservation contexts.
- Advice on the use of appropriate conceptual models for describing the ecological character of individual sites.
- A framework for monitoring and surveillance of Emerald sites, linked to established good practice for site management planning, supporting implementation of the action agreed in 2016 for Emerald monitoring in the Central/Eastern Europe and South Caucasus countries (T-PVS/PA (2016) 10) and adapting/broadening its application to all Emerald countries.
- Advice on the application in this context of methods for risk assessment, early warning indicators and a precautionary approach.
- Guidance on the use of Environmental Impact Assessment and Strategic Environmental Assessment in the Bern Convention context (as a whole, not only in relation to the Emerald Network), including advice on assessment of the significance of risk and the significance of change in the ecological character of sites, drawing inter alia on existing advice in the report on windfarms & birds in 2013 (T-PVS/Inf (2013) 15) and having regard to existing guidance on EIA/SEA in other relevant international environmental conservation contexts.
- Advice on following an “avoid-mitigate-compensate” sequence for decision-making on response options, possibly including diagrammatic flow-charts or equivalent decision support tools.
- Specific guidance on principles and approaches for providing compensation for lost ecological values.
- Advice on considering the implications at the network level of changes in the ecological character of sites, particularly in relation to the consideration of habitat compensation as a response option in appropriate circumstances.

3. The Standing Committee should be invited to mandate the compilation of a review of those Bern Convention case file reports that relate to Emerald Network sites, with a view to distilling lessons learnt concerning the operation of the case file system in this context, successful responses to issues of ecological character change facing Emerald sites, and other matters.

Given the progress being made in advancing the Emerald Network towards full completion, yet the constant levels of pressure and threat that many sites continue to face, there is an acute need for the Bern Convention and its Parties to be equipped with effective tools in this area. This will not only support the achievement of the Convention's own objectives, but will also strengthen the contribution it makes to wider goals, such as Target 11 in the global Strategic Plan for Biodiversity.

## 1. INTRODUCTION

- 1.1 The Bern Convention requires the Contracting Parties to take measures for the “conservation of habitats” and “protection of areas” (Article 4), and through decisions of the Convention's Standing Committee, the Emerald Network has been created as a primary mechanism for stimulating and coordinating such efforts.
- 1.2 Extensive guidance has been adopted on the establishment and implementation of the Emerald Network. This has concentrated on the criteria for site selection, evaluation of the sufficiency of the Network, and site protection through the application of legal safeguards and proactive habitat management.
- 1.3 Standing Committee decisions have at the same time expressed expectations concerning the steps to be taken in response to influences which may from time to time have a potentially adverse effect on the values represented by a designated site, or in other words a more *reactive* mode of protection. Pre-requisites for effective implementation of this would include a clear understanding about the baseline state against which to judge change or the risk of change; monitoring to detect change or potential change, judgements about the significance of change, and options for adaptive responses (e.g. mitigation or habitat compensation).
- 1.4 At present the Convention does not have guidance on these “reactive” matters. The “case file” system is a tried and tested mechanism for responding to serious problems facing sites, but it is triggered in a largely *ad hoc* manner rather than from a basis of systematic monitoring, and the principles and practices which guide it are framed in terms of procedures rather than ecological aspects.
- 1.5 A concept which could be central to all of this is the “ecological character” of a site – an expression of the values at stake at a given site and the suite of parameters among which any change or potential change would be detected, assessed and addressed as appropriate. The term appears in Bern Convention Resolution No. 5 (1998), which refers to Parties informing the Secretariat about “changes likely to affect negatively in a substantial way the ecological character” of the designated sites in the Emerald Network. The term has however not been defined or interpreted in the Bern Convention context, nor does it feature to any extent in guidance adopted subsequently.
- 1.6 The present report therefore seeks to address this gap, by identifying steps towards a more complete and conceptually robust basis for equipping Parties to implement the habitat protection requirements of the Convention in future. In doing so it has regard to other related international processes, in particular the Convention on Wetlands (Ramsar Convention), which already uses a concept of “wetland ecological character” as the foundation of its site protection regime, and which has developed a substantial body of guidance on the application of the concept in that context.
- 1.7 Given the advances made in recent times to expand the Emerald Network towards full completion, yet the constant levels of challenge to its objectives that are posed by pressures of land use change and developments of various kinds, there is a greater need than ever for the Bern Convention and its Parties to be equipped with an effective framework for defining, detecting, assessing and responding to changes in the ecological values that the Network seeks

to safeguard. This will *inter alia* also strengthen the contribution being made by the Convention to Aichi Target 11 in the Strategic Plan for Biodiversity 2011-2020, which seeks the effective conservation of areas of importance for biodiversity worldwide.

## **2. THE VALUES REPRESENTED BY EMERALD NETWORK SITES**

- 2.1 A concept of the ecological character of an Emerald Network site should derive from an identification of the values represented by that site. The main systematic basis for this at present is provided in the process for selecting Areas of Special Conservation Interest (ASCIs) which (following further steps) can then become designated for the Network.
- 2.2 For the purposes of this section, the values concerned are those represented by individual sites. There are also values that apply at the (aggregate) Network level, and those are discussed separately in section 10 below.
- 2.3 There are two elements in the identification of “site-level” values. The first is the criteria of significance which determine the eligibility of a site to be regarded as “of special conservation interest”. These are set out in Recommendation No. 16 (1989) adopted by the Bern Convention Standing Committee for the purpose of identifying ASCIs for the Emerald Network in countries other than EU Member States (in the latter this is taken care of by the compatible process for identifying Special Protection Areas and Special Areas of Conservation for the Natura 2000 network under the EU Directives on Birds and Habitats).
- 2.4 According to Recommendation No. 16, a site will qualify if it:
- contributes substantially to the survival of threatened species, endemic species, or any species listed in Appendix I or II of the Convention; or
  - supports significant numbers of species in an area of high species diversity or supports important populations of one or more species; or
  - contains an important and/or representative sample of endangered habitat types; or
  - contains an outstanding example of a particular habitat type or a mosaic of different habitat types; or
  - represents an important area for one or more migratory species; or
  - otherwise contributes substantially to the achievement of the objectives of the Convention.
- 2.5 The references to “threatened species” and “endangered habitat types” in this context are interpreted in accordance with lists compiled by the Standing Committee (habitats in Resolution No. 4 of 1996 and species in Resolution No. 6 of 1998), and as further revised (species in 2011 and habitats in 2014) to harmonise with changes in the Annexes of the EU Directives.
- 2.6 The reasons why a given site may meet the criteria are no more than a statement of the minimum qualifying threshold(s) it has satisfied. Hence the relevance of a second element, which is the additional descriptive information that is documented for each selected site in a Standard Data Form. The template for the ASCI Standard Data Form is adapted from the equivalent for Natura 2000, and is provided in an annex to Bern Resolution No. 5 of 1998 (the version updated in 2013). Among the data fields included are the following:
- Site location (latitude/longitude)
  - Area (or length, for linear sites)
  - Biogeographical region(s)
  - “Resolution 4 habitat types” present on the site, and the area of each
  - Representativity
  - “Resolution 6 species” present on the site, and the numbers of each

- Other important species of flora and fauna, with numbers and conservation status
- A description of “other site characteristics” (a free-text field)
- A description of “quality and importance” (a free-text field)
- Threats, pressures and activities with impacts on the site (both positive and negative).

### **3. EXPECTATIONS REGARDING SAFEGUARDING OF THE VALUES REPRESENTED BY EMERALD NETWORK SITES**

- 3.1 Article 4.1 of the Bern Convention provides that “Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I and II, and the conservation of endangered natural habitats”, and Article 4.2 provides that “Contracting Parties in their planning and development policies shall have regard to the conservation requirements of the areas protected under the preceding paragraph, so as to avoid or minimise as far as possible any deterioration of such areas”.
- 3.2 In relation to sites in the Emerald Network, Standing Committee Recommendation No. 16 (1989) asks States to ensure wherever possible that (*inter alia*):
- the sites are subject to an appropriate regime designed to conserve the factors that are the basis for their inclusion in the Network;
  - appropriate and coordinated research is conducted to further the understanding of critical elements in the management of ASCIs and the monitoring of their status; and
  - activities adjacent to or in the vicinity of the sites do not adversely affect them.
- 3.3 The States are further recommended in respect of ASCIs to:
- draw up and implement management plans with short- and long-term objectives;
  - regularly review the management plans in light of changing knowledge or other conditions;
  - clearly mark the boundaries of ASCIs on maps and as far as possible also on the ground;
  - advise landowners and relevant authorities about the location and important features of the sites; and
  - provide for monitoring of the sites.
- 3.4 Resolution No. 5 (1998) asks the governments “to inform the Secretariat of any important changes likely to affect negatively in a substantial way the ecological character of the designated ASCIs or the conditions having justified their designation. Where any such changes come to light, the Standing Committee may advise the government concerned on steps to be taken”.
- 3.5 Recommendation No. 157 (2011) further recommends that Contracting Parties:
- take the necessary protection and conservation measures in order to maintain the ecological characteristics of the candidate Emerald sites; and
  - ensure that, if and when appropriate, these measures include administrative, management or development plans corresponding to the ecological requirements for the long term survival of species and habitats present in the proposed Emerald sites, in particular those of the Bern Convention Resolutions No. 4 (1996) and No. 6 (1998) or specified by Recommendation 16 (1989).
- 3.6 Some of the implications that arise from these expectations include the need to:
- clearly delineate the boundaries of the area of interest in each case;

- understand what are the “critical elements” in the status of a given site, for the purposes of management and monitoring;
- understand what are the “important features” of a given site, for the purpose of making landowners and relevant authorities aware of these;
- define the “ecological character” (Resolution No. 5) or “ecological characteristics” (Recommendation No. 157) of a given site, as a basis for its conservation;
- know what is required to “conserve the factors that are the basis for the inclusion” of a given site in the Network;
- know what protection and conservation measures are required to “maintain the ecological characteristics” of a given site;
- understand what are the “ecological requirements for the long term survival” of the species and habitats present in a given site;
- know which activities or changes could adversely affect a given site, and how to prevent them doing so;
- be able to set appropriate management objectives;
- be able to set appropriate parameters for monitoring.

3.7 Further elaboration of various conservation measures (such as acquisition and incentives) is provided in Recommendation No. 25 (1991) and Resolution No. 8 (2012) and in a guidance document produced in 2014<sup>1</sup>. The Group of Experts on Protected Areas and Ecological Networks has also prepared draft guidelines on managing Emerald sites with particular reference to climate change adaptation and mitigation<sup>2</sup>.

3.8 The 2014 guidance describes the setting of conservation objectives for Emerald sites in terms of the conservation measures required to maintain or increase populations of species or quality and area of habitats, so that each site can contribute as necessary to the maintenance of the favourable conservation status of the species or habitats concerned.

3.9 Favourable conservation status is judged at the population, national, biogeographical or regional level. Judging the contribution made to it by any one site is not straightforward, since this will be contingent to some extent on what happens at other sites. As a pragmatic proxy for this, therefore, reliance tends to be placed on a presumption that the values identified for a site at the time of its inclusion in the Network (in the terms of Resolution No. 5 of 1998, the “ecological character of the designated ASCIs or the conditions having justified their designation”) should be maintained in the state described for them at that time.

#### **4. THE CONCEPT OF “ECOLOGICAL CHARACTER” AS THE CONSERVATION BASELINE – INVOKED BUT NOT DEFINED**

4.1 According to the reasoning in section 3 above, the implied or default conservation objective for an Emerald site is to maintain its ecological character, as a contribution to maintaining (or attaining) a favourable conservation status for the species and/or habitats for which it is important.

4.2 Based on Resolution No. 5 (1998) the objective could also be expressed as maintaining the “conditions that justified the site’s designation”; but if this is interpreted as a reference to the reasons why the site met the criteria defined in Recommendation No. 16 (1989), it is unlikely to be an adequate expression of the objective (or of the baseline against which to evaluate change, to put that another way).

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<sup>1</sup> Bern Convention (2014). Towards management of Emerald sites. Document T-PVS/PA (2014) 8 prepared for the meeting of the Group of Experts on Protected Areas and Ecological Networks, Strasbourg, September 2014.

<sup>2</sup> Bern Convention (2015). Draft guidelines on managing the Emerald sites, including climate change adaptation and mitigation. Document T-PVS/PA (2015) 10 prepared for the 7th meeting of the Group of Experts on Protected Areas and Ecological Networks, Strasbourg, September 2015.



- 4.3 This is because the conditions justifying designation are only a statement of the minimum qualifying threshold(s) which the site has satisfied; whereas a statement of the conservation/management objectives to be set for the site will usually need to define more than this minimum qualifying state. To do otherwise would be to allow sites of more than merely qualifying value to decline to the minimum. Moreover in some circumstances (e.g. if reference animal populations reduced as a result) this could lead to repeated redefinitions of the relevant qualifying threshold(s), such that qualification could be maintained with successively smaller and smaller numbers, until the perverse but logical outcome is reached whereby the population becomes extinct.
- 4.4 Hence the conditions that justified a site's designation are not regarded as a suitable conservation baseline for it, and the remainder of the discussion in this document assumes instead that such a baseline rests more appropriately on the concept of the site's "ecological character". (For the purposes of this document also this is taken to be synonymous with the term "ecological characteristics" as used in Recommendation No. 157 of 2011).
- 4.5 Despite this fundamental importance of the "ecological character" concept and the central reference to it in Resolution No. 5 (1998), it does not appear to have been defined or interpreted in the Bern Convention context, nor does it appear to have featured to any extent in the various guidance documents on the operation of the Emerald Network that have been produced over the years.
- 4.6 A definition (and associated guidance) does however exist in another international Convention which, like Bern, has established a network of sites designated for their conservation importance. This is the Ramsar Convention on Wetlands, which defines ecological character (of wetlands) as "the combination of the ecosystem components, processes and benefits/services that characterise the wetland at a given point in time"<sup>3</sup>. "Ecosystem benefits" in this context are interpreted in accordance with the Millennium Ecosystem Assessment's definition of "ecosystem services" as "the benefits that people receive from ecosystems".
- 4.7 Maintenance of the ecological character (of wetlands) is the core conservation objective in Ramsar, both in terms of designated Ramsar Sites (under Article 3.2 of the Convention Parties must detect and respond to change or likely change in the ecological character of their listed sites) and in terms of wetlands in general, whether designated or not (under Article 3.1 Parties must as far as possible promote the wise use of wetlands in their territory, and "wise use of wetlands" has been defined as "maintenance of their ecological character"<sup>4</sup>).
- 4.8 For the purposes of Ramsar Article 3.1 there is no universal obligation to document the ecological character of every wetland. For the purposes of Article 3.2 however it is a firm expectation (under Resolutions of the Conference of Parties) that the ecological character of every listed Ramsar Site should be systematically described, and should be used as the baseline against which changes are assessed.
- 4.9 To assist with this, the 10th meeting of the Conference of Parties (COP10) adopted an "Ecological Character Description Sheet" together with guidance on its use<sup>5</sup>. Most Parties in fact however now record relevant details in the subsequently revised version of the Ramsar Information Sheet (RIS)<sup>6</sup> which is compiled for each site by the Party concerned and is incorporated in the global Ramsar Sites database.

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<sup>3</sup> Ramsar Convention (2005). A Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character. Resolution IX.1 Annex A, adopted by the 9<sup>th</sup> meeting of the Conference of the Contracting Parties, Kampala, Uganda, 8-15 November 2005.

<sup>4</sup> Ramsar Convention (2005). *Op cit*.

<sup>5</sup> Ramsar Convention (2008a). Describing the ecological character of wetlands, and data needs and formats for core inventory: harmonized scientific and technical guidance. Resolution X.15 adopted by the 10<sup>th</sup> meeting of the Conference of Contracting Parties, Changwon, Republic of Korea, 28 October-4 November 2008.

<sup>6</sup> Ramsar Convention (2012a). Streamlining procedures for describing Ramsar Sites at the time of designation and subsequent updates. Resolution XI.8 adopted by the 12 meeting of the Conference of Contracting Parties, Bucharest, Romania, 6-13 July 2012. (The revised Ramsar Information Sheet is at Annex 1, and guidance on it is in the "Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of

- 4.10 Both information sheets contain three main sections corresponding to the three elements in the definition of ecological character, i.e. “ecological components” (23 data fields), “ecological processes” (9 data fields) and “ecosystem services” (27 data fields). Within some of the data fields are checklists of further subdivided items, and links to explanatory notes. Thinking and experience on wetland ecological character continues to evolve in relation to other aspects of the concept, and the description framework might conceivably be developed further in future to address such issues as the genetic and trophic structure of ecosystems.
- 4.11 Crucial to the approach is a fourth section of the datasheets which aims to capture that part of the definition which refers to the *combination* of the ecosystem components, processes and benefits/services that characterise the wetland. Hence in addition to the listed ingredients that go to make up the description of a site, the ecological character concept in Ramsar also embodies a holistic idea of what they represent in total, and how this might characterise a site in such a way as to distinguish it ecologically from other sites.
- 4.12 The Ramsar Ecological Character Description sheet accordingly requests a “summary statement” about the site, described as “two or three narrative sentences giving a statement of what is ecologically distinctive (not necessarily important) about the site”. The equivalent section in the Information Sheet for Ramsar Sites (RIS) asks for a description of “which of the ecological components described, together with the ecological processes described, are critical to determining the ecological character of the Ramsar Site”.
- 4.13 These “holistic” aspects are relevant also to notions of site “integrity” as an attribute to protect. Site integrity has not been specifically defined in Ramsar or Bern contexts, but it features in the obligations applying to Natura 2000 sites under Article 6 of the EU Habitats Directive. Under the World Heritage Convention, where sites qualify for designation according to criteria of “outstanding universal value”, such sites must also demonstrate “integrity”, which in the case of sites in the “natural” category means that they should *inter alia* be “of adequate size to ensure the complete representation of the features and processes which convey the property’s significance”, their “bio-physical processes and landform features should be relatively intact” and (in relevant cases) “the necessary elements to demonstrate the key aspects of processes that are essential for the long term conservation of the ecosystems and the biological diversity they contain” should be included<sup>7</sup>.
- 4.14 Ramsar guidance encourages the use of simple two- or three-dimensional “conceptual models” to support ecological character descriptions, accompanied by summary descriptions of key features, processes and functioning of the sites concerned. The guidance cites an early published example of such a model produced for a Ramsar Site, the authors of which describe it in this context as “effectively a hypothesis, presented as a diagram, of how a system operates”<sup>8</sup>.
- 4.15 A comparison with the data fields in the Standard Data Form for Emerald sites described in section 2 above shows that the latter focuses primarily on the “components” of a site (e.g. the flora, fauna and habitat types present) and it is not specific about covering the site’s “processes” or “services”. There could be scope in a given case for these to be touched upon in the fields for pressures and activities affecting the site, and in the free text field for “other site characteristics”, but these are not constructed in a way that would prompt consideration of these factors consistently in the sense of being aspects of ecological character. Similarly there might be potential for the field on “representativity” and the free text field for “quality and importance” to touch on the “holistic”/“combination” dimension mentioned above, but only incompletely, and compilers have not been guided to approach these in this way.

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the Convention on Wetlands - 2012 revision” at Annex 2 - see section 7.3.1 of the latter for further information on the section on ecological character).

<sup>7</sup> UNESCO (2016). Operational Guidelines for the implementation of the World Heritage Convention. Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, document WHC.16/01, October 2016.

<sup>8</sup> Davis, J and Brock, M (2008). Detecting unacceptable change in the ecological character of Ramsar wetlands. *Ecological Management & Restoration* 9(1): 26-32.

- 4.16 One key challenge is that of identifying the correct reference condition to use as the basis for a description of ecological character, given that many ecosystems are subject to long-term natural variation. When a site qualifies for designation, the evidence confirming that fact is naturally assumed to be depicting a desirable state. It is understandable that this may then come to be assumed also to be a depiction of the *most* desirable state or a *target* state, and hence to be the benchmark for deciding when there has been undesirable change. This second assumption however may often be flawed.
- 4.17 A single assessment at the moment of designation, or at some later moment when a datasheet is completed, may simply provide a static “snapshot” of the conditions and characteristics of a site at a more or less arbitrary point in time, and it risks presenting a characterisation that may not be representative of the site’s true nature, if underlying conditions fluctuate from time to time or if they are evolving in a particular direction. This may therefore not be the most valid baseline against which to evaluate future change. An obligation to “maintain the ecological character” of the site can be an overly static concept if it is applied without factoring in these realities; yet at the same time, robust (and clear) expressions of value are needed with which to defend designated sites against development threats and other unwanted change.
- 4.18 Information on natural variability, referring to sufficiently long historical timeframes where data are available, should therefore be incorporated as far as possible in all relevant data fields of the ecological description. This might include multi-annual cycles in the site’s environmental context (e.g. rainfall, temperature), or directional trends in e.g. geomorphology, evolution, succession or diversification. The “combination of ecosystem components, processes and benefits/services” could be considered to include processes of long-term cyclical change, homeostatic responses to perturbation (i.e. resilience, which is both a process and a service), and the “service” of adapting to change by switching from one stable state to a different stable state.

## 5. DEFINING CHANGE IN ECOLOGICAL CHARACTER

- 5.1 In order to implement Bern Resolution No. 5 (1998), governments need ways of knowing when they are facing instances of “change likely to affect negatively in a substantial way the ecological character of a designated ASCI”. In addition to having a definition of the ecological character of a site, therefore, there needs to be some understanding of what the particular vulnerabilities of each site are, and which kinds of influences or activities could potentially pose a threat of change to its character.
- 5.2 In the Ramsar context, the Convention Parties have agreed that “for the purposes of implementation of Article 3.2, *change in ecological character* is the human-induced adverse alteration of any ecosystem component, process, and/or ecosystem benefit/service”<sup>9</sup>. This specifies “adverse” alteration because the context relates to triggering of corrective responses. It specifies “human induced” because the scope of Article 3.2 is limited to changes resulting from “technological developments, pollution or other human interference”<sup>10</sup>.
- 5.3 The definition does not distinguish between direct and indirect human-induced change: whether or not climate change is covered by this has been cause for debate, with the general (but not fully settled) view being that climate issues are better addressed through other mechanisms of the Convention.

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<sup>9</sup> Ramsar Convention (2005). *Op cit.*

<sup>10</sup> Various aspects of this regime are discussed in more detail in the following main sources, and some are addressed in summary terms in the remaining sections of the present report:

Ramsar Convention (2008b). A Framework for processes of detecting, reporting and responding to change in wetland ecological character. Resolution X.16 adopted by the 10th meeting of the Conference of Contracting Parties, Changwon, Republic of Korea, 28 October-4 November 2008.

Ramsar Convention (2008c). Background and rationale to the Framework for processes of detecting, reporting and responding to change in wetland ecological character. Document COP10 DOC. 27 tabled at the 10th meeting of the Conference of Contracting Parties, Changwon, Republic of Korea, 28 October-4 November 2008.

Pritchard, D E (2014a). Change in ecological character of wetland sites - a review of Ramsar guidance and mechanisms. Consultant report to the Ramsar Convention. 102pp.

- 5.4 The World Heritage Convention's "List of World Heritage in Danger" is compiled according to criteria for "ascertained" and "potential" dangers, with examples listed including decline in species populations, encroachment by development and "threatening impacts of climatic, geological or other environmental factors". In the case of natural properties however the guidelines state that "most threats will be human-made and only very rarely will a natural factor (such as an epidemic disease) threaten the integrity of the property"; and the threats identified in a given case must be "amenable to correction by human action"<sup>11</sup>.
- 5.5 Although ecological character has a holistic dimension as discussed in section 4 above, discerning change ought not to depend necessarily on deciding that there has been or is likely to be a loss of the site's overall integrity. It should normally be assumed that this is part of the story; but in the Ramsar Convention context for example, the "trigger" for reporting under Article 3.2 need only concern change or likely change in any one of the ecosystem components, processes or services identified in the site's ecological character description. This does mean *inter alia*, however, that a change or likely change in the *ecosystem services* delivered by the site is sufficient reason for an Article 3.2 report, even if there has been/will be no discernible change in the ecosystem components and processes of the site. This point has probably not yet been very widely appreciated.

## 6. DISTINGUISHING SIGNIFICANT CHANGE FROM TRIVIAL CHANGE

- 6.1 In the Ramsar example discussed above, the Convention requirement is unqualified as to the magnitude or significance of the changes in ecological character to which it refers. It implies that any change or likely change, no matter how trivial, should be reported. Clearly to do so would be neither practical nor helpful, but the Convention has never spelled out a way of deciding how big a change is a "real change" for this purpose, nor how to take account of naturally fluctuating baseline states.
- 6.2 The Bern Convention Resolution No. 5 (1998) is more helpful in this regard, in that it refers to "important" changes likely to have "substantial" effects on the ecological character of a site. (It also has a different focus of attention, being based more on reporting the *cause* of an ecological character change than just reporting the actual or potential *result* of such a change).
- 6.3 In the Bern Convention's case however the question still remains as to how to decide that a change is "important" and its effects likely to be "substantial". Judgements on this will be dependent on the particular circumstances of the individual site. Relevant guidance on approaches to this has been published by the European Commission in relation to the analogous question which arises under Article 6 of the Habitats Directive<sup>12</sup>, and guidance on screening for environmental impact assessment will also often be relevant<sup>13</sup>. Methods can include checklists and matrices, but will often more simply and pragmatically involve the use of expert opinion.
- 6.4 Significance of a change or likely change may be judged in several ways, for example in terms of its absolute magnitude, in terms of departures from a defined baseline norm, by reference to specific vulnerabilities defined for a site, by reference to a defined bandwidth of "acceptable" variation, or combinations of these.
- 6.5 Detecting significant departures from a baseline norm will depend on appropriately defining the baseline (for example in terms of its temporal context), and will also need to be alive to the possibility that the baseline itself is fluctuating or shifting. The fundamental nature of ecosystems is generally dynamic, and this poses challenges for well-intentioned "protected

<sup>11</sup> UNESCO (2016). *Op cit.*

<sup>12</sup> European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Document developed by Oxford Brookes University for EC DG Environment. The Commission has also produced a wealth of guidance on managing particular habitat types and on particular land- and resource-use sectors (see [http://ec.europa.eu/environment/nature/natura2000/management/guidance\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm)), and aspects of this may be useful in individual cases which involve any of the habitats or sectors concerned.

<sup>13</sup> See for example European Commission (2001). Guidance on EIA – screening. Document produced by Environmental Resources Management for EC DG Environment.

area” regimes like the Emerald Network which are bound by necessity to “defend” important sites against unwanted change. If a more explicit way of developing ecological character descriptions for Emerald Network sites is adopted in future (see section 11 below) this should therefore include information on the known natural range of variability in the parameters that are chosen.

- 6.6 Change-detection then becomes an issue of distinguishing “signal” from “noise”, i.e. discerning actual or potential perturbations which may become superimposed on the site’s normal pattern and which may indicate an issue of concern. Not “fitting the pattern” may relate to changes in the frequency or other timing characteristics of the baseline variability, as well as changes in the quantities or sizes of the physical variables involved. (Assessing whether change is significant enough to *matter* is a different issue, covered in section 8 below).
- 6.7 If change is affecting the site at the time when its ecological character is described, this should be incorporated into the baseline description of the site. If such change is continuing to cause or to threaten changes in any aspect of the ecological character of the site thereafter, it ought to be reported under Resolution No. 5 (1998), even if strictly speaking it is not a “change to the change” recorded in the baseline character description.
- 6.8 Both the Ramsar Convention “Article 3.2 regime” and the Bern Convention “Resolution No. 5 regime” embrace “likely” change as well as actual change. The World Heritage Convention’s List of World Heritage in Danger (referred to in section 5 above) has the same philosophy, but uses the term “potential” instead of “likely”, which might be thought to be a less exacting test to meet. The World Heritage criteria however use terms such as “major”, “serious decline”, “severe deterioration”, “threatening integrity” and “deleterious effects on inherent characteristics”, so in this respect both World Heritage and Bern’s Resolution No.5 may be regarded as setting a more exacting test than Ramsar (where Article 3.2 is unqualified as to significance, as mentioned above).
- 6.9 Judging significance by reference to a defined bandwidth of “acceptable” variation invokes the idea of defining what are sometimes referred to as “Limits of Acceptable Change” for a site. This term however arises from the different context of management planning, and is linked to the objective of staying true to site management objectives. It appears mainly in the context of visitor management in North America, where it has developed as a way of framing compromises and trade-offs (including on non-ecological parameters) and for undertaking iterative steps of adaptive management of these, rather than being a way of setting tolerance thresholds. For the latter purpose in the Ramsar context it has been suggested that the term “Limits for Defining Change in Ecological Character” should be used instead<sup>14</sup>.
- 6.10 Such limits are not generic, but are specific to the circumstances of an individual site. Site management plans are an appropriate place for them to be defined. In a sense, limits can be regarded as limits of confidence. So, for example, when the values of all performance indicators for a site fall within the limits, it can be confidently considered that the site is in a favourable conservation status; when the limits are exceeded, that confidence disappears.
- 6.11 A sufficient safety margin in defining limits of this kind must always be allowed, to account for the possibility of unexpected changes, unforeseen impacts and misjudgements. Given the element of prediction and judgement involved in identifying changes that are “likely to affect” the ecological character of Emerald sites, in a more general sense it is important to take a precautionary approach (i.e. “if in doubt, report”); and approaches which draw on methods for risk assessment will often be appropriate.

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<sup>14</sup> Ramsar Convention (2012b). Limits of Acceptable Change - the definition and operation of concepts and approaches for “limits of acceptable change” which may be applicable to the Ramsar context of defining and detecting change in the ecological character of wetlands. Document COP11 DOC. 24 tabled at the 11<sup>th</sup> meeting of the Conference of Contracting Parties, Bucharest, Romania, 6-13 July 2012.

## 7. DETECTING CHANGE AND LIKELY CHANGE

- 7.1 A clear implication of the expectations defined in the preceding section of this document is that Emerald Network countries should have in place suitable arrangements for monitoring and surveillance of all their designated Emerald sites, so that they may be alerted to changes which need to be reported under Resolution No. 5 (1998).
- 7.2 Existing provisions under the Bern Convention make some reference to monitoring of sites. For example Recommendation No. 16 (1989) recommends that Contracting Parties take steps to ensure wherever possible that research is conducted with a view *inter alia* to monitoring the status of the factors giving rise to the designation of ASCIs and their conservation.
- 7.3 Resolution No. 8 (2012) further provides *inter alia* that:
- Parties will ensure that a monitoring framework forms an integral part of the management plans and/or other administrative measures taken for the designation of Emerald sites;
  - Monitoring of site management will comprise regular surveillance of the implementation of the conservation regime and of the conservation status of the species, habitats and/or other factors giving rise to the designation of the area; and
  - Regular surveillance of the conservation status of species and habitats for which a site has been designated will comprise appropriate scientific and ecological research, aiming at identifying whether the site contributes to the long term survival of the species and habitats.
- 7.4 It can be seen however that the provisions cited above focus mainly on monitoring the delivery of planned implementation activities and the resulting status of species and habitats, rather than covering vigilance for the unplanned, or unexpected, or external influences in a way that would satisfy Resolution No. 5.
- 7.5 The need for the latter kind of monitoring has been more explicitly highlighted in the “Road Map” for implementing the Emerald Network in Central and Eastern Europe and the South Caucasus which was agreed by the Bern Standing Committee in 2016<sup>15</sup>. This includes an action for “each country to make arrangements for monitoring of all of its Emerald Network sites, sufficient at least to ensure that any changes likely to have substantial negative effects on the ecological character of the site can be detected and reported to the Bern Secretariat (as agreed in Resolution No. 5 of 1998) and so that appropriate conservation responses to threats and changes can be initiated when required”. It would be useful to recommend such an action formally to all Emerald Network countries.
- 7.6 Work is in hand at the time of writing to develop, in conjunction with the European Environment Agency, an on-line tool for notification of changes in Emerald site boundaries. This could in due course make a contribution to a broader change–monitoring system, and could perhaps provide the basis of one method for recording other kinds of changes.
- 7.7 In the Ramsar Convention regime described in earlier sections above, the text of the Convention itself (Article 3.2) requires the Contracting Parties to “arrange to be informed at the earliest possible time” about any negative human-induced change or likely change affecting the ecological character of their designated Ramsar sites, and to pass information on such changes “without delay” to the Convention Secretariat. This requirement is strict and unqualified. A key part of its force is that it envisages a “real time” or “as it happens” communication system, so that responses to specific issues can be prompt and effective. The phrase “without delay” is critical to this (although it is very poorly observed by most Parties).
- 7.8 The strict requirement in Ramsar relates to the passing of information. Article 3.2 implies nothing about action which may or may not follow from the passing of such information. The

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<sup>15</sup> Bern Convention (2016). Three dimensional Road Map for achieving a fully operational Emerald Network in 7 countries of Central and Eastern Europe and the South Caucasus. Document T-PVS/PA (2016) 10 agreed by the 36th meeting of the Standing Committee, Strasbourg, November 2016.

process allows a shared appreciation of the issues at stake in a given case, and may lead to a shared appreciation about possible ways of ensuring a satisfactory outcome, with or without additional action. It is an obligation, but is a constructive and non-threatening one in this sense.

- 7.9 Part of the power of both Ramsar's Article 3.2 and the Bern Convention's Resolution No. 5 is their precautionary nature, in covering not only those ecological character changes that have happened or are happening, but also those deemed "likely" to happen. No guidance has been given in either context however on what degree of "likelihood" or confidence is sufficient to require the triggering of a report.
- 7.10 In principle, plan-making and decision-making processes may reveal a prospect or proposal for change that needs to be reported. Monitoring of proposals as well as of decisions will therefore significantly enhance the kind of "early warning" capability that will make the requirement work effectively, even if "likelihood" of change (as a prompt for actual reports) is judged to arise only at the stage of consents or commitments to proceed (e.g. with a development) rather than at the proposal stage.
- 7.11 The issue of "likelihood" has been explored to some extent in a few more or less analogous situations in case-law and in guidance in individual countries. These have perhaps served to illustrate how challenging it is, in an ecological context, to codify interpretations of the degree of "trigger sensitivity" that may be appropriate<sup>16</sup>.
- 7.12 Clearly it would defeat the aim of the provisions if unduly strict standards of evidence and substantiation were imposed. Such standards might be appropriate if what had to be submitted by the Party was an in-depth dossier on the likely change at issue; but it seems more appropriate instead to view this in terms of aiming to stimulate much more rapid and "provisional" initial alerts about problems that may or may not then need deeper investigation.
- 7.13 There should therefore be a presumption in favour of a precautionary approach, i.e. not demanding too high a degree of certainty before the elementary step of basic reporting is taken. Sometimes a small initial risk may be warning about a much bigger impending harm to the site. Non-linear or "threshold" responses to pressure are common in ecosystems, and Resolution No. 5 will act most effectively as a conservation tool when it is "tuned" to react sensitively to the earliest indications of any potential for harm.
- 7.14 All that being said, it is at the same time also possible that the system could be open to abuse (or at least ineffectiveness) if the merest suggestion or anxiety on the part of one person were enough to trigger an obligation to report. The appropriate approach will lie somewhere in a "middle ground" of informed, authoritative or expert judgement, supported by a "risk management" approach. There may be a case for developing some guidance on ways of determining and applying degrees of confidence, confidence limits, standards of proof and precaution for this purpose.
- 7.15 The Ramsar Parties have adopted a Wetland Risk Assessment Framework which gives detailed advice on "early warning indicators", which are defined in terms of measurable signals which may precede the occurrence of potentially significant effects, and which therefore provide an opportunity to determine whether intervention or further investigation is warranted<sup>17</sup>. The development of something similar could be considered in the Bern Convention context.
- 7.16 Making decision systems and the criteria for them more "risk-based" in general would involve going beyond considerations of risk assessment, to include ways of making explicit the chosen levels of risk which can or cannot be tolerated in given circumstances (the "risk appetite"); and ways of documenting a transparent audit trail of the judgments made about the management of identified risks.

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<sup>16</sup> Discussed further in Pritchard (2014a) (*op cit*).

<sup>17</sup> Ramsar Convention (1999a). Wetland Risk Assessment Framework. Resolution VII.10 adopted by the 7th meeting of the Conference of Contracting Parties, San José, Costa Rica, 10-18 May 1999.

## 8. ASSESSING THE IMPLICATIONS OF CHANGE AND LIKELY CHANGE

- 8.1 Section 7 above describes the provision in Resolution No. 5 (1998) to “inform the Secretariat” as being in the nature of an “initial alert” about problems that may or may not need deeper investigation. That deeper investigation, into the potential negative effects on the ecological character of a site, may then usefully draw on some of the methodologies and best practices that have developed worldwide over many decades in the context of Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA). These mechanisms offer systematic and repeatable ways of evaluating not merely the likelihood of change, but its significance and its implications for the conservation objectives of a site.
- 8.2 For that part of the Emerald Network which is made up of Natura 2000 sites in the European Union, the EU Habitats Directive requires that projects likely to have a significant effect on any such site should be subject to an assessment of their implications for the site. Guidance on this has been published by the European Commission<sup>18</sup>. Two other Directives govern a more general system of EIA and SEA, on which guidance is also available<sup>19, 20</sup>.
- 8.3 Two main references exist in the Bern Convention context. The first, Standing Committee Recommendation No. 25 (1991) (on the conservation of natural areas outside protected areas proper), recommends that Contracting Parties examine the possibility of taking measures including:
- submitting all projects, plans, programmes and measures with an impact on the natural and semi-natural environment to an examination of environmental compatibility, with a view to protecting nature and landscapes;
  - requiring that any request for permission to undertake a development or activity that is liable to have an adverse ecological impact on an Area of Special Conservation Interest be accompanied by an environmental impact assessment or equivalent assessment making it possible to determine the precise effects of the proposed development or activity on the ecological characteristics which warranted the inclusion of the area concerned in the list of ASCIs; and
  - advising government agencies against carrying out, authorising or subsidising developments or activities which are shown by the environmental impact assessment or equivalent assessment adversely to affect significantly the ecological characteristics mentioned above.
- 8.4 The second reference is a report on the effects of windfarms on birds, produced in 2013, which (despite the specificity of its title) includes advice of a generally-applicable nature on principles and best practice concerning impact assessment<sup>21</sup>. The Standing Committee at its 33<sup>rd</sup> meeting welcomed this advice, and invited all Parties to take it into account.
- 8.5 Other biodiversity-related Conventions have formally adopted guidance on EIA and SEA, including the Convention on Biological Diversity<sup>22</sup>, the Convention on Migratory Species<sup>23</sup>

<sup>18</sup> European Commission (2002). *Op cit.*

<sup>19</sup> European Community (1985). Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment. *Official Journal L 175*, 5.7.1985: 40–48. Subsequently amended by Directives 97/11/EC, 2003/35/EC, 2009/31/EC, 2011/92/EU and 2014/52/EU. For various related guidance documents, see <http://ec.europa.eu/environment/eia/eia-support.htm>.

<sup>20</sup> European Union (2001). **Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.** *Official Journal L 197*, 21.07.2001: 30–37. For various related guidance documents, see <http://ec.europa.eu/environment/eia/sea-support.htm>.

<sup>21</sup> Bern Convention (2013a). Wind farms and birds: an updated analysis of the effects of wind farms on birds, and best practice guidance on integrated planning and impact assessment. Document T-PVS/Inf (2013) 15, prepared by BirdLife International on behalf of the Convention and tabled at the 33<sup>rd</sup> meeting of the Standing Committee, Strasbourg, December 2013.

<sup>22</sup> Convention on Biological Diversity (2006). Impact Assessment: voluntary guidelines on biodiversity-inclusive impact assessment. Decision VIII/28 adopted by the 8<sup>th</sup> meeting of the Conference of Contracting Parties, Curitiba, Brazil, 20-31 March 2006.

<sup>23</sup> Convention on Migratory Species (2002). Impact Assessment and Migratory Species. Resolution 7.2 adopted by the 7<sup>th</sup> meeting of the Conference of Contracting Parties, Bonn, Germany, 18-24 September 2002.



and the Convention on Wetlands (Ramsar)<sup>24</sup>. These Conventions have done so in a coordinated way, so that the same principles have been agreed by each of them, thus ensuring compatibility of the global standards that apply in each context. The Bern Convention Standing Committee may wish to consider adapting aspects of this for adoption in its own context, hence avoiding duplication of work and aligning its own standards with those adopted by the other Conventions. Related advice is also available from the International Association for Impact Assessment (IAIA)<sup>25</sup>.

## 9. RESPONDING TO CHANGE AND LIKELY CHANGE

- 9.1 Bern Convention Resolution No. 5 (1998), after asking governments to report change or likely change affecting the ecological character of a designated ASCI, goes on to provide that “where any such changes come to light, the Standing Committee may advise the government concerned on steps to be taken”. Recommendation No. 157 (2011) completes the logic by expressing an objective for the necessary protection and conservation measures, namely “to maintain the ecological characteristics” (= ecological character) of the sites.
- 9.2 A familiar response option in the Bern Convention context is the practice of examining “case files” under a procedure first approved by the Standing Committee at its 3rd meeting in 1984 and specified in more detail at the 13th meeting in 1993<sup>26</sup>. Provision also exists for conducting “on the spot enquiries” or “on the spot appraisals”. Often, but not always, these responses are occasioned by threats to specific sites. They are commonly triggered by information from experts and other stakeholders (e.g. NGOs) rather than by reports under Resolution No. 5 from the Contracting Party.
- 9.3 Case files and on-the-spot appraisals can of course help with the assessment of potential impacts, (see section 8 above); but their benefit normally is in going further into drawing out and testing facts about the issue concerned, sharing perspectives on it from beyond the country concerned, mobilising political support in an international forum for resolving it, and debating, recommending and supporting potential solutions. An added ingredient in this latter aspect is the scope for the Standing Committee to adopt specific and formal recommendations for action, which in time may come to have the status of customary law.
- 9.4 Systems which are (to different degrees) analogous to this exist in other Multilateral Environmental Agreement (MEA) contexts. These include the Ramsar Convention’s “Advisory Missions”, the African-Eurasian Waterbird Agreement’s “Implementation Review Process”, the World Heritage Convention’s “List of World Heritage in Danger”, the Council of Europe’s “Diploma of Protected Areas”<sup>27</sup> and the European Union’s legal enforcement processes for protection of Natura 2000 sites<sup>28</sup>. There are increasingly frequent examples of two or more of these systems being operated together on a joint basis, where interests in the particular site or conservation issue concerned are shared. Such an approach is one important way of demonstrating efficient synergies between different MEAs.

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<sup>24</sup> Ramsar Convention (2008d). Environmental Impact Assessment and Strategic Environmental Assessment: updated scientific and technical guidance. Resolution X.17 adopted by the 10<sup>th</sup> meeting of the Conference of the Contracting Parties, Changwon, Republic of Korea, 28 October - 4 November 2008.

<sup>25</sup> See for example International Association for Impact Assessment (2005). Biodiversity in Impact Assessment. Special Publication Series No. 3. IAIA, Fargo, USA.

<sup>26</sup> Subsequently set out in Bern Convention (1999). Opening and closing of files - and follow up to recommendations. Secretariat memorandum, Document T-PVS (99) 16.

<sup>27</sup> [The Diploma is relevant to the present discussion because it is awarded for a limited period, and can be renewed or withdrawn subject to a system of review and assessment. It has thus been able to function as an instrument for responding to threats and other problems at sites, where the high-profile decision as to renewal of the Diploma may be a key spur to securing resolution of the problem concerned.](#)

<sup>28</sup> For an early comparative review of these different mechanisms, see Pritchard, D E (2000). Review of the case file system. Document T-PVS (2000) 16 rev, tabled at the meeting of the Select Committee for the Strategic Development of the Bern Convention. Strasbourg, April 2000.

More in-depth reviews of the Ramsar Advisory Missions process can be found in (i) Pritchard (2014a) (*op cit*) and (ii) Jones and Pritchard (in prep: A comprehensive review and analysis of Ramsar Advisory Missions reports. Consultancy report for the Ramsar Convention).

- 9.5 A central consideration in all these systems is the delicate political balance between incentive or assistance on the one hand, and assurance of compliance or enforcement on the other. The different regimes show a range of ways in which this balance is struck. In this, a key point is whether the consent of the country concerned is required before the relevant procedure can be progressed, or whether instead it is progressed by decision of the majority or by a supervisory body to whom this responsibility is entrusted (e.g. a Convention secretariat or committee), in the context of a shared international interest in the outcome.
- 9.6 For an enforcement procedure to be effective, some kind of meaningful sanction must at least in principle be available. For an incentive/assistance procedure to be effective, it must be capable of meeting the need of the country concerned, for example by offering the right expertise within a sufficiently short timescale to solve urgent problems. The systems with the most effective incentives are those which can draw on funds dedicated to the purpose.
- 9.7 Consideration might usefully be given to expanding the Bern Convention mechanisms to include a “rapid response consultation” or “advisory service” function, which could operate more flexibly and speedily alongside the full case file or appraisal functions, in circumstances where the latter are not necessarily warranted or where they would only follow later.
- 9.8 With any of these systems there may be scope, and every effort should be made, to help governments ultimately to present the solutions that are arrived at as examples of pioneering field-leadership, so they can reap political kudos at home and on the international stage. This in itself is a form of incentive.
- 9.9 No comparative evaluation of the effectiveness or rates of success of the different MEAs’ procedures for solving or averting harm to ecological interests appears to have been conducted. This would be a challenging question, but one worth investigating nevertheless, especially if it can be related to design features which the Bern Convention might seek to emulate or reinforce in its own processes.
- 9.10 More readily achievable, but also not yet attempted, would be a review of experiences and lessons learnt from operating the Bern case file system in cases involving sites identified for the Emerald Network, based on an analysis of the relevant case file reports. Exactly such a review of Ramsar’s Advisory Missions system is under way at the time of writing, and its approach might potentially offer a template to follow or adapt<sup>29</sup>.
- 9.11 Usually the ultimate purpose of all of these steps (for investigating problems, providing advice and adopting recommendations) will be to facilitate informed and wise decision-making on a chosen course of action regarding (for example) a land-use change or a development project. In the context of the present document, the objective to be achieved by this is the *maintenance of the ecological character* of the site concerned.
- 9.12 As mentioned earlier, Bern Recommendation No. 16 (1989) asks States to ensure that activities adjacent to or in the vicinity of Emerald sites do not adversely affect them. The EU Habitats Directive requires that projects likely to have a significant effect on a Natura 2000 site should generally only be permitted when the assessment of their implications shows that there will not be an adverse effect on the site’s integrity.
- 9.13 Normally the appropriate approach for Parties to take to this will be a hierarchical one, whereby they would, as the first priority, be expected 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. The Ramsar Convention provides one example of detailed guidance on how to apply such a hierarchical approach<sup>30</sup>.

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<sup>29</sup> See the reference noted earlier to Jones and Pritchard (in prep).

<sup>30</sup> Ramsar Convention (2012c). An Integrated Framework and guidelines for avoiding, mitigating and compensating for wetland losses. Resolution XI.9 adopted by the 11th Meeting of the Conference of the Parties, Bucharest, Romania, 6-13 July 2012.

- 9.14 In the light of the discussion in section 4 above about challenges concerning definition of appropriate baselines, there may be occasions when “maintaining ecological character” (in the sense of retaining or restoring historical conditions) is no longer possible, or at least is no longer feasible by “anything short of heroic action and intensive manipulation and management”<sup>31</sup>. Response options (other than continuing to try to prevent change) in such circumstances might include partitioning safeguard/restoration efforts according to which aspects of the site are amenable to this and which are not; managing for a different new stable character; and managing for a broader envelope of continuing future fluctuations/directional changes.
- 9.15 Acknowledging these possible scenarios raises an additional risk. It is not easy to design workable “checks and balances” in policy that will distinguish (a) genuinely irreversible (and/or even desirable) shifts in an ecosystem’s conditions from (b) claims by vested interests that something has irreversibly shifted when it has not. This would be worth further attention in future; and meanwhile precaution must be the underlying principle.
- 9.16 Advice on mitigation in relevant circumstances may be drawn from guidance adopted by the Bern Convention on specific topics, such as wind farms and recreational fishing. Advice on habitat compensation in a generic sense has not been adopted under the Convention, but sources in other fora, including the European Union and the Ramsar Convention, offer considerable body of relevant guidance<sup>32</sup>.
- 9.17 One key issue associated with compensation is its inherent uncertainty: most compensatory measures are essentially experimental, and hence they demand a large margin of precaution (for example by providing areas that are much larger than the areas to be lost). Another issue is timing: compensation should generally be delivered in advance of negative impacts, so that the desired ecological functioning can be verified and any necessary recolonisation/translocation etc. can take place. In interpreting the EU guidance on this, IUCN’s Environmental Law Centre concluded that compensation must therefore “be a proactive policy rather than one designed only to react to proposals”<sup>33</sup>, thus linking to later expansions of thinking (by others) on approaches to so-called “mitigation banking”<sup>34</sup>.
- 9.18 There is a need with all of the above for a wise mix of (a) systematically-applied safeguards and (b) case-specific judgements. In the multivariate and uncertain situations which typically characterise threats to the ecological character of Emerald sites, responses based on formulaic, criteria-based decision-making are not always possible or appropriate. Approaches need to be developed therefore that are based at least as much on risk management, precaution, and a graduated spectrum of response options. In terms of guidance, diagrammatic flow-charts and “decision-trees” may have an important role to play alongside narrative descriptions and protocols<sup>35</sup>.

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<sup>31</sup> Hobbs, R J, Higgs, E S and Harris, J A (2009). Novel ecosystems: implications for conservation and restoration. *Trends in Ecology and Evolution* 24(11): 599-605.

<sup>32</sup> See in particular:

European Commission (2000). Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. EC DG Environment, Brussels.

European Commission (2007). Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC. EC DG Environment, Brussels.

Ramsar Convention (2012c). *Op cit*.

Pritchard (2014a). *Op cit*.

<sup>33</sup> di Leva, C and Tymowski, W (2000). The Ramsar Convention on Wetlands: the role of “urgent national interests” and “compensation” in wetland protection. IUCN Environmental Law Centre. Document SC25-8 tabled at the 25th Meeting of the Ramsar Standing Committee, Gland, October 2000.

<sup>34</sup> See for example US Environmental Protection Authority (2013). Mitigation banking factsheet. Available at <https://www.epa.gov/cwa-404/mitigation-banking-factsheet>.

<sup>35</sup> For examples in the Ramsar context, see Ramsar Convention (2008b) *op cit* and Ramsar Convention (2008c) *op cit*.

## 10. ADDRESSING THESE ISSUES AT THE NETWORK LEVEL

- 10.1 As discussed above, maintenance of ecological character is the conservation objective for individual Emerald Network sites. There is however also a conservation objective to be achieved by the Network as a whole.
- 10.2 This is normally described in Emerald documents in three main ways: (i) in terms of “ensuring the long-term survival of the species and habitats” concerned, or (ii) by reference to Article 4 of the Convention which seeks the “conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I and II, and the conservation of endangered natural habitats”, or (iii) in terms of achieving the “favourable conservation status” of the species or habitats concerned. (Some rationalisation of these different statements may be worth considering at some point).
- 10.3 These network-level objectives are the basis for those parts of the process adopted for the establishment of the Emerald Network which provide for an evaluation of the “sufficiency” (numbers, extent, quality, distribution, diversity, representativity, functional coherence, species population viability etc.) of the total list of sites at a biogeographic scale, so that any gaps or shortfalls in this can be addressed<sup>36</sup>. Analogous concepts (often expressed in terms of overall network “coherence”) have been developed in the context of other site networks, notably in Natura 2000 and under the Ramsar, OSPAR and HELCOM Conventions<sup>37</sup>.
- 10.4 The reason for mentioning this here is that alongside the objective of maintaining site ecological character, the additional objectives expressed at network level should play an important part in determining appropriate responses to change or likely change in this character. Loss of ecological value from an individual site may have implications for the continuing attainment of overall network “sufficiency” as defined during the original evaluation process, and this may provide the benchmark for determining the particular measures that are necessary in a given case to avoid, mitigate or compensate for such loss.
- 10.5 This is made more explicit in some of the other systems referred to above. The EU Habitats Directive provides in Article 6.4 that “if, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest [...], the Member State shall take all compensatory measures necessary *to ensure that the overall coherence of Natura 2000 is protected*” (emphasis added).
- 10.6 The Ramsar Convention COP has encouraged its Parties to take measures to compensate for any loss of wetland functions, attributes and values<sup>38, 39</sup>, and Article 4.2 of the Convention requires compensation to be provided in the specific case of the site reductions which are exceptionally allowed under Article 2.5. Adopted guidance on the latter suggests a need, when providing such compensation, to take into account “the *maintenance of the overall value of the Contracting Party’s wetland area included in the Ramsar List at the national and global level*”<sup>40</sup> (emphasis added).
- 10.7 Network-level considerations of this kind (in the context of responses to ecological character change) might be considered to be a gap in the current guidance available for the Emerald Network.

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<sup>36</sup> Bern Convention (2013b). Revised criteria for assessing the national lists of proposed Areas of Special Conservation Interest (ASCIs) at biogeographical level and procedure for examining and approving Emerald candidate sites. Document T-PVS/PA (2013) 13 agreed by the 33rd meeting of the Standing Committee, Strasbourg, December 2013.

<sup>37</sup> For a full comparative review, including source references, see Pritchard (2014b). Ecological networks - a strategic review of aspects relating to migratory species. Report for the Convention on Migratory Species, tabled as Document UNEP/CMS/COP11/Doc.23.4.1.2 for the 11<sup>th</sup> meeting of the Conference of Contracting Parties, Quito, Ecuador, 4-9 November 2014.

<sup>38</sup> Ramsar Convention (1999b). Compensation for lost wetland habitats and other functions. Resolution VII.24 adopted by the 7th meeting of the Conference of Contracting Parties, San José, Costa Rica, 10-18 May 1999.

<sup>39</sup> Ramsar Convention (2012c). *Op cit.*

<sup>40</sup> Ramsar Convention (2002). General guidance for interpreting “urgent national interests” under Article 2.5 of the Convention and considering compensation under Article 4.2. Resolution VIII.20 adopted by the 8th meeting of the Conference of Contracting Parties, Valencia, Spain, 18-26 November 2002.

## **11. TOWARDS THE ADOPTION OF PRINCIPLES AND GUIDANCE ON THESE ISSUES IN THE BERN CONVENTION CONTEXT**

- 11.1 The present report provides a review of ecological character issues in the Bern Convention/Emerald Network context as a basis for considering possible future action, but it does not attempt at this stage to propose the specifics of such action. Doing so would be a next stage to consider, probably involving a process of wide consultation within the Bern Convention community and beyond, and guided by the Convention's Group of Experts on Protected Areas and Ecological Networks.
- 11.2 As a conclusion to the present review therefore, three key recommendations are made as follows:

### ***RECOMMENDATION 1***

The Secretariat, with the support of the Group of Experts on Protected Areas and Ecological Networks, should undertake a broad consultation among Contracting Party representatives, suitably qualified international organisations and others, to invite comments on the present report, suggestions for feasible and appropriate measures for acting on its findings and offers of support for further work on the issues it covers.

### ***RECOMMENDATION 2***

The Standing Committee should be invited to mandate the development during 2018 of a framework of guidance for possible adoption under the Convention on describing the ecological character of Emerald Network sites, and on detecting, reporting, assessing and responding to changes and likely changes in such character; as an aid to Parties for their implementation of Resolution No. 5 (1998) and Article 4 of the Convention, and in support of the Convention's contribution to the achievement of the Target 11 in the Strategic Plan for Biodiversity 2011-2020.

Such guidance could include, but need not necessarily be limited to, the following possible items:

- A definition for Bern Convention purposes of the "ecological character" of sites and of "change in ecological character", indicating links where appropriate with relevant data fields in the Standard Data Form for Areas of Special Conservation Interest, and being accompanied by advice on defining appropriate baseline/reference conditions (in relation for example to underlying natural change or variability).
- Ensuring compatibility with the concepts and approaches in operation on this subject in other relevant international environmental conservation contexts.
- Advice on the use of appropriate conceptual models for describing the ecological character of individual sites.
- A framework for monitoring and surveillance of Emerald sites, linked to established good practice for site management planning, supporting implementation of the action agreed in 2016 for Emerald monitoring in the Central/Eastern Europe and South Caucasus countries (T-PVS/PA (2016) 10) and adapting/broadening its application to all Emerald countries.
- Advice on the application in this context of methods for risk assessment, early warning indicators and a precautionary approach.
- Guidance on the use of Environmental Impact Assessment and Strategic Environmental Assessment in the Bern Convention context (as a whole, not only in relation to the Emerald Network), including advice on assessment of the significance of risk and the significance of change in the ecological character of sites, drawing *inter alia* on existing advice in the report on windfarms & birds in 2013 (T-PVS/Inf (2013) 15) and having regard to existing guidance on EIA/SEA in other relevant international environmental conservation contexts.

- Advice on following an “avoid-mitigate-compensate” sequence for decision-making on response options, possibly including diagrammatic flow-charts or equivalent decision support tools.
- Specific guidance on principles and approaches for providing compensation for lost ecological values.
- Advice on considering the implications at the network level of changes in the ecological character of sites, particularly in relation to the consideration of habitat compensation as a response option in appropriate circumstances.

***RECOMMENDATION 3***

The Standing Committee should be invited to mandate the compilation of a review of those Bern Convention case file reports that relate to Emerald Network sites, with a view to distilling lessons learnt concerning the operation of the case file system in this context, successful responses to issues of ecological character change facing Emerald sites, and other matters.