

Ecological networks and coherence according to article 10 of the Habitats Directive

Introduction

Within the scientific community ecological coherence next to habitat quality has long been acknowledged as essential precondition to allow for long-term survival of many species and habitats. This principle has been accepted by policy and law makers and accordingly been incorporated into international and national legal and policy frameworks. In order to implement these measures there needs to be an understanding as to the legal and ecological requirements.

In Germany this need was recognized during the development of a concept for the implementation of a national ecological network, which is required under the provisions of the Federal Nature Conservation Act (2002). It became clear that its implementation required a measure of harmonisation with other international and national frameworks. Overlaps and differences in the frameworks are to be identified, together with their strengths and weaknesses. The aim must be to secure an effective and efficient meeting of the principles of ecological coherence, in the context of the various legal and policy frameworks, and thus to enhance maximum mutual profit and cost efficiency in their implementation.

National ecological networks also exist in other EU member states. Therefore the harmonization in the implementation of these legal and policy frameworks is a task of wider relevance. In addition the ecological coherence of the Natura 2000 network is a requirement under the EU Habitats Directive (92/43/EEC). One of the means by which this can be achieved is by the implementation of the provisions contained in Article 10 of the Directive to which so far only little attention was paid.

These considerations led to the organisation of a workshop entitled “Ecological networks and coherence according to article 10 of the Habitats Directive” which took place from May 9th-13th 2005 at the International Nature Conservation Academy on the Isle of Vilm. This workshop was attended by representatives from the EU Commission, Member State delegates from the Scientific Working Group of the EU Habitats Committee, representatives of the nature conservation authorities of the German States, representatives of Non Government Organizations and selected experts for different groups of species.

This workshop consisted of introductory sessions with presentations which served to provide information on:

- the scientific background with regard to ecological coherence;
- the potential of different legal instruments or policies to maintain or restore coherent ecological networks;
- the experiences of national ecological networks, their state of implementation and their relevance and relationship with Natura 2000, and

- the consideration and application of ecological coherence for Natura 2000 in different member states.

There followed three parallel workshops considering

- definitions and objects of coherence (addressed species and habitats)
- spatial and functional aspects of coherence
- implementation of coherence

These focussed on the requirements for ecological coherence under the EU Habitats Directive in meeting the overarching aim of the Directive to secure favourable conservation status for those habitats and species listed in Directive and in contributing towards ensuring biodiversity. The main question was on how the Article 10 measures can and should be implemented in this context. Each of the workshops provided feedback and following discussions at a plenary session, the following conclusions were reached:

Conclusions of the workshop

Background

The ecological coherence of protected areas is a key element to securing the target to maintain or restore biodiversity and will be a major step towards reaching the target to halt the decline of biodiversity by 2010 as agreed by EU Heads of States in Göteborg, June 2001. These targets were also included in the Ministerial Declaration that was agreed upon at the fifth Ministerial Conference "Environment for Europe" in 2003 in Kiev and later incorporated in the Programme of Work on protected areas adopted by 7th meeting of the conference of the parties to the CBD in 2004, Kuala Lumpur. The Stakeholder conference held under Irish presidency in Malahide, Ireland in June 2004 presented priority objectives and detailed targets to meet the 2010 goal. Based on the outcome of this conference named the Message from Malahide, EU Environmental Council agreed on Conclusions on halting the loss of biodiversity by 2010. The European Commission is now working on a programme document - the Commission Communication on Biodiversity.

Other international conventions and agreements that require coherent networks are the Ramsar Convention, the Convention on Migratory Species (e.g. also African Eurasian Migratory Waterbirds Agreement, AEWA), the Pan European Biological and Landscape Diversity Strategy (PEBLDS/PEEN) and the Bern Convention (Emerald Network).

Legal instruments on EU-level to implement coherent ecological networks are the EU Habitats Directive (92/43/EEC) and the Bird Directive (79/409/EEC). References to ecological coherence occur in a number of Articles in the Habitats Directive and in different contexts.

Given that:

- Natura 2000 areas only cover a selection of the on a European scale important habitats and species;

- besides these in the member states other non-listed habitats and species occur, that are of great national or European value for nature and landscape;
- Article 10 explicitly provides the means by which Member States may improve the ecological coherence of Natura 2000. This is no binding obligation for Member States;
- the basic situation and structure of the landscape varies greatly between Member States;
- different methods were applied for site selection and delimitation in each Member State;

for achieving or maintaining a Favourable Conservation Status of habitat types and species it is essential in many cases to enhance ecological coherence.

Article 10 is one important instrument to improve, where necessary the ecological coherence, within the context of the Habitats Directive and as a part of the national and regional ecological networks.

Ecological coherence is of particular relevance when considering the impacts of climate change as well as other non-anthropogenic changes on species and habitats.

Definitions

Ecological coherence: sufficient representation (patch quality, total patch area, patch configuration, landscape permeability) of habitats / species to ensure favourable conservation status of habitats and species across their whole natural range

Relevant references in the EU Habitats Directive are:

- **Overall coherence** is only used in Article 6 (4) with regard to compensatory measures. (The Use of this term is mentioned in the Commission guidelines “Managing Natura 2000 sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC”, European Commission (2000, p.46). This document concluded that the word “ecological” is used both in Article 3 and Article 10 to explain the character of the coherence. And it states that “It is obvious that the expression ‘overall coherence’ in Article 6(4) is used in the same meaning.” As this guideline is currently under revision an adaptation or clarification may be necessary in future).

Application of the Directive has demonstrated that in order to achieve the objective of the Directive it would be advisable to make distinction between those terms.

- **“Coherent ecological network”** according to Article 3.1 appears to be synonymous with the completed Natura 2000 network.

However this is not identical with the global aim of the Directive to achieve ecological coherence as defined above.

- **Natura 2000 network** is the sum of all SCI/ SACs and SPA (Article 3.1)
- In the explanations of **features of the landscape** the functional aspects of coherence (essential for the migration, dispersal and genetic exchange of wild species) are the key considerations. Features of linear and continuous structure or stepping stones provide only examples by which ecological coherence can be improved.

Legal aspects

References to **(ecological) coherence** appear in the preamble (paragraph 10); Articles 3, 4 and 10 and in Annex III, Stage 2 of the **EU-Habitats Directive**, and in the preamble (paragraph 9) and Article 4 paragraph 3 of the **Bird Directive** as well as in **Ornis Committee decisions** (1989) among the „Ornithological criteria to guide the selection of Special Protected Areas“ under “Breeding sites” point 4.

For the full list of references see annex I.

The term **coherent ecological network** is used in different contexts within the Directive, which can be confusing. To avoid misunderstanding the use of the terms Natura 2000 network and ecological coherence (going beyond the designated sites) is recommended.

Addressed species and habitats

Habitats Directive

- Annex I habitats including their “typical species”
- Annex II species
- Annex IV and Annex V species that do not occur in annex II may benefit from Art. 10 measures ¹
- “Wild fauna and flora” i.e. species diversity as a whole: no specific measures required, but Art. 10 measures taken may have positive effects ¹

Bird Directive

- Bird species of Annex I
- Migratory bird species (s. Art. 4.2)
- Other wild bird species: no specific measures required, but Art. 10 measures taken may have positive effects ¹

Methods and basic requirements

General considerations

Favourable conservation status underpins all measures in the Habitats Directive. Where Article 10 measures are identified as the only means by which this can be achieved they must be implemented.

Ecological coherence should in the first instance be considered in relation to functional rather than physical connectivity. This allows implementation through a range of different strategies, rather than just through physical linkage, e.g. enlargement of core areas, improvement to the quality of individual habitat patches, increased permeability of the landscape context (e.g.

¹ Addressed species were discussed controversially, concerning Annex IV and V species, wild fauna and flora in general for the EU Habitats-Directive and other wild bird species concerning the EU Bird Directive: There is a necessity to clarify this point both from scientific as well as from the legal interpretation.

extensification of land use), restoration, corridors, stepping stones etc. Information on which strategy to use for different species will also depend on the specific circumstances.

It should be recognised that requirements for coherence can include a range of biotic and abiotic conditions that are necessary to secure favourable conservation status.

Judgements on ecological coherence must be based on the best available scientific information. Areas of particular utility in judgements may include minimum viable population size (MVP), minimum area, metapopulation theory, dispersal capacity.

Species

A species by species approach is necessary. If this is not practicable, similar ecological groups should be considered together. Annex II species of the Habitats Directive and typical species of Annex I habitats need to be considered.

Presence and accessibility of all essential habitats for species during their life cycle should be ensured by sufficient habitat continuity or connectivity.

If metapopulations are not of favourable conservation status, habitat patches that lie outside Natura 2000 sites must be regarded as essential landscape features to achieve or maintain the favourable conservation status regardless of the fact that the species may temporarily not be present there.

Migration, dispersal and genetic exchange are essential key processes for species acknowledged in Article 10 in order to obtain or maintain the favourable conservation status:

- a) The necessary minimum of genetic exchange between populations needs to be assessed for each species.
- b) Endemic species or isolated populations with specific genetic characteristics may have a special conservation value. A connection to other populations could be detrimental and should in such cases be avoided.
- c) Habitat continuity needs to be sufficient to allow dispersal, migration and commuting of species.
- d) Dispersal includes colonisation and re-colonisation of suitable habitats especially for metapopulations.
- e) Other situations where connectivity can be detrimental should be avoided (e.g. disease spread, invasive species).

The concept of native species will need to be reassessed in context of changes in the natural range of species e.g. due to climate change.

Habitats

A habitat by habitat approach is necessary. If this is not practicable, similar habitats should be considered together.

In order to obtain and/or maintain the favourable conservation status for habitat types the following major functional aspects, covered by Article 10, need to be considered:

- Functional integrity and comprehensiveness (completeness) of habitat types (e.g. whether all habitats belonging to a habitat complex, all typical features of a habitat, functional relationships between Annex I habitats and with non-listed habitats are included e.g. catchment areas)
- Comprehensiveness (completeness) of habitat diversity (all subtypes, variants in a geographical context, development phases to be sufficiently represented)
- Habitat continuity (permanent and long term stock of all necessary habitat requirements including dynamic spatial mosaics) needs to be sufficient to provide ecological coherence for the typical species of habitats (Annex I). Often this means providing the spatial and structural means for active dispersal. In some cases this can also require that dispersal media can function between habitat patches for typical species, e.g. grazing animals can move between habitats (traditional land-use, mixed grazing systems with wild or semi-domesticated animals).
- Natural dynamics are necessary to maintain naturally dynamic habitats or their species.

Implementation

It is recommended that there should be a greater harmonisation between the different ecological networks, such as e.g. Natura 2000, PEEN or national ecological networks, in order to achieve maximum synergies.

The use of a common terminology for its components would be of advantage:

- **Core areas** are areas of high quality or conservation interest. They can be inside or outside Natura 2000 and can be of European, Community (EU-level), national, regional or local importance.
Core Areas should be protected as far as possible.
- **Nature restoration/creation areas** are areas with a high potential to develop into valuable habitats. If they are situated inside Natura 2000 sites it is recommended that these areas be included in the management planning for these sites.
- **Connecting structures** (landscape features = linear structures and stepping stones) are connecting areas for specific species or habitats (ref. Art. 10). Landscape mosaics may provide these functions.
- **Buffer zones**²

A long-term target for the implementation of Article 10 should be to identify the relationship between Favourable Conservation Status and connectivity. In this context species and habitats occurring outside Natura 2000 sites also need to be considered.

² No specific recommendation to use this category is given as there is no direct need for implementation of Natura 2000.

For practical implementation it is recommended to build a toolkit. The following are a starting point:

- All relevant information on habitats and species, e.g. on dispersal distance, minimum viable population size and minimum area, should be collected, analysed and be made available.
- A list should be produced, prioritising species and habitats on the basis of the importance of coherence for achieving Favourable Conservation Status including aspects of their life cycle. The list should differentiate between disparate requirements for coherence e.g. large scale coherence and small scale coherence and should make use of all available relevant information.
- Simple communication materials on the subject should be developed for different stakeholders (government authorities at national, regional and local levels, NGOs, the public etc.) to clearly demonstrate and explain the use of considering coherence in terms of reaching Favourable Conservation Status, thus showing the functional aspects of the raised attention for Article 10.
- Criteria for identifying gaps i.e. insufficiencies in coherence/connectivity might be set up.
- Methods and best practice should be gathered on mitigation and restoration of existing or planned obstacles to coherence as e.g. manmade barriers. These should be listed and evaluated in terms of efficiency and possible improvement.
- Recommendations should be developed on the use of other legal and policy instruments, that could or do support ecological coherence, financial instruments, planning instruments and specific programmes (e.g. Water Framework Directive, Agricultural Policy (CAP), Fisheries Policy (CFP), Cohesion Policy and Structural Funds, spatial planning, wildlife conservation programmes).

The gathering of information and development of tools should be coordinated. The Internet could serve as a suitable information platform (e.g. EU-COM "Circa"- platform on the web: <http://forum.europa.eu.int/Public/irc/env/Home/main>).

It is recommended that a selection of cases demonstrating best practice on the application and implementation of Article 10 implementation, for design and management of ecological coherence and positive examples of socio-economic development be gathered and disseminated.

A short-term target for the implementation of Article 10 could be to look for transboundary / cross-border coherence. The EU Commission is encouraged to take action in checking the transboundary coherence of the Natura 2000 network.

As another short-term target the Member States should consider the effect of existing or planned manmade barriers within and outside Natura 2000 sites (including those that were in place before the implementation of the Habitats Directive, and thus have not undergone an Art. 6-assessment), especially if they lead to a high mortality of species. Their effects should be mitigated if necessary.

The conclusions will be reported to the EU Habitats Directive Scientific Working Group. It is recommended that a working group be established to adequately help the implementation of Article 10 to support achieving Favourable Conservation status.

A further workshop is considered desirable to take forward the conclusion of the Vilm workshop.

Annexes

- Annex 1: Legal references to coherence/ networks in the Habitats Directive and in the Bird Directive incl. decisions from Habitat/ Ornis-Committee