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TransEcoNet, action 3.2: Biodiversity in Networks

— Final Report —

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TransEcoNet

EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND

CENTRAL
EUROPE
COOPERATING FOR SUCCESS.

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List of Abbreviations

AT	Austria
BBI-Matra	"International Policy Programme Biodiversity" (BBI) – Fund of the Netherlands Ministry of Agriculture, Nature and Food Quality and the Ministry of Foreign Affairs
Bern Convention	Bern Convention on the Conservation of European Wildlife and Natural Habitats, done at Bern on 19.09.1979
BfN	German Federal Agency for Nature Conservation
BG	Bulgaria
BiH	Bosnia-Herzegovina
Birds Directive	Council Directive of 2 April 1979 on the conservation of wild birds
CEE	Central and Eastern Europe
CERI	Carpathian Eco-Region Initiative
CH	Switzerland
CMS	Convention on the Conservation of Migratory Species of Wild Animals, done at Bonn on 23 June 1979
CZ	Czech Republic
DAE	Dinaric Arc Eco-Region Project
DAI	Dinaric Arc Initiative
DBU	German Federal Foundation for the Environment
ECNC	European Centre for Nature Conservation, based in Tilburg (The Netherlands)
ESDP	European Spatial Development Perspective
FR	France
GBF	Green and Blue Framework in France *("trame verte et bleue")*
GE	Germany
Habitats Directive	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
HU	Hungary
HR	Croatia
INTERREG	(A European funding scheme for cross-border, transnational and interregional cooperation; since 2007: "Objective 3")

IT	Italy
IUCN	World Conservation Union
LI	Liechtenstein
LIFE	(A European funding scheme for environmental protection and nature conservation)
MAVA	MAVA – Foundation for Nature Protection
MC	Monaco
MNE	Montenegro
NGO	Nongovernmental organization
NEN	National Ecological Network
PEBLDS	Pan-European Biological and Landscape Diversity Strategy, submitted by the Council of Europe at the Ministerial Conference 'Environment for Europe' in Sofia, Bulgaria, on 23-25.10.1995
PEEN	Pan-European Ecological Network
REN	“Réseau écologique national”, the Suisse national ecological network
RO	Romania
PIN-Matra	“International Nature Management Central and Eastern Europe” – Fund of the Netherlands Ministry of Agriculture, Nature and Food Quality and the Ministry of Foreign Affairs (run time 2001 -2004, integrated into BBI-Matra)
PL	Poland
SK	Slovakia
SLO	Slovenia
SRB	Serbia
TAEU	Territorial Agenda of the European Union
TSES	Territorial System of Ecological Stability in the Czech Republic
UKR	Ukraine
UNDP	United Nations Development Programme
UNESCO-BRESCE	United Nations Educational, Scientific and Cultural Organisation – Regional Bureau for Science and Culture in Europe
WFD	Water Framework Directive, or more precisely: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 framework for Community action in the field of water policy

WWF	Worldwide Fund for Nature

1 Introduction

1.1 Background and objectives

Ecological networks and corridors represent one of the most widely applied concepts in contemporary approaches to nature conservation. The basic idea is to link ecosystems of one type into a spatially coherent system through flows of organisms, and to consider also the interactions with the matrix in which they are embedded (cf. Opdam et al. 2006, 324).

The notion of ecological networks is gaining increasing attention against the backdrop of climate change: When average temperatures are rising globally, many species and communities will have to shift their distribution ranges towards the poles or higher altitudes. It is assumed that this requires a certain permeability of landscapes. Therefore hardly any recent strategy document dealing with adaptation to climate change or with challenges for nature conservation does without the proposal to enhance ecological networks.

In central Europe with its many sovereign states and its high proportion of terrestrial borders, ecological networks will be of limited efficacy if conceived and implemented only at national level. Thus the cause for transboundary and transnational cooperation is self-evident in this part of the world. However, up to now there is no comprehensive survey of transnational cooperation initiatives aiming at establishing ecological networks in central Europe.

Having this in mind, action 3.2 is based on four guiding questions (see fig. 1). The first one is "Under which European and national institutional contexts is cooperation on ecological networks taking place in central Europe?" To this we analyse current European and national approaches to ecological networks and the related legislation.

1. Under which European and national institutional contexts is cooperation on ecological net-works taking place in central Europe?
2. Where could or should transnational ecological networks be established practically?
3. Which transboundary, supra-local cooperation initiatives related to ecological networks did exist in the study area between 2000 and 2009?
4. What can be done to improve the current practice?

Figure 1: Guiding questions for action 3.2

The second guiding question is "Where could or should transnational ecological networks be established practically?" The objective is to identify species which do presently occur or which could potentially occur in the Central European space and which can serve as target species for transboundary, supra-local ecological networks.

"Which transboundary, supra-local cooperation initiatives did exist in the study area between 2000 and 2009?" This third and main guiding question implies the objective of giving a comprehensive overview of respective cooperation initiatives which shall be further characterized with regard to a number of criteria. The outcome is an inventory (or synopsis) of transboundary, supra-local cooperation initiatives in the Central Europe programme area.

The fourth question is: "What can be done to improve the current practice?" In answering this question we want to try to identify options for future transboundary, supra-local cooperation related to ecological networks.

1.2 ‘Ecological network’, ‘transboundary’ and other key terms

There are many straightforward, though overlapping and in some cases even divergent definitions of ‘ecological networks’. In the context of action 3.2, the term generally denotes a transboundary, supra-local system of territories or sites, which have been recognized by actors in the field as being structurally or functionally related to each other in an ecological sense. The phrase ‘...which have been recognized by actors in the field as being ...’ is important because we do not intend to carry out ecological and spatial analyses of our own to identify ecological networks.

Ecological networks can rely on structural connectivity (‘connectedness’), functional connectivity or a combination of both. Structural linkages within an ecological network consist of

- immediate adjacency of sites or a spatially coherent system of sites as e.g. in the case of the floodplains of a river basin,
- stepping stones and linking corridors which establish physical connections between core areas, or
- similarities in habitat structure, even if sites are not physically connected.

Functional linkages refer to ecological functions such as

- daily or seasonal migration of populations or individuals, e.g. in the case of bats,
- genetic exchange between otherwise isolated (sub-)populations or communities, which then become part of a metapopulation or metacommunity, and
- enabling the dispersal of species and the shift of distribution ranges as a reaction to climate change.

It is important to note that ecological networks usually are not devoted to one function only but have a multifunctional character. Thus, it is no contradiction if an ecological network is designed to include structural and functional linkages and also to serve other purposes such as agriculture and recreation.

Ecological networks have the objectives of maintaining, restoring or enhancing nature conservation and biodiversity within a coherent system.

The attributes ‘transboundary, supra-local’ mean that the networks shall transcend the borders of at least two countries of the study area. Furthermore they shall be of transnational, trans-European relevance, which presupposes a certain size in terms of area. Therefore only ecological networks with an extension more than 100 km shall be considered.

A potential target species for transboundary, supra-local ecological networks is one that which depends particularly on re-establishing large-scale spatial or functional linkages in fragmented landscapes.

With ‘cooperation initiative’ we mean cooperation projects or activities, but not actors, organizations or international institutions such as the Bonn Convention. However, the distinction between activities and projects on the one hand and cooperation platforms and organisations on the other hand may be blurred in some cases. Or put differently: There are projects or activities that function as ‘umbrellas’ or ‘platforms’ for other projects and activities.

1.3 Methodology

The findings of this report are chiefly based on four methods:

- Review of scholarly publications, policy documents and other print material.
- Systematic internet search for each aspect of the analysis.
- E-mail inquiries of experts from governmental bodies, non-governmental organizations and science to obtain additional information on national legislation, ecological network concepts etc.
- Semi-structured, open-ended interviews with selected experts and stakeholders in the field, especially in the frame of the case studies.

The interviewees are listed in annex 1.

2 Study area

2.1 Geographic scope and main natural characteristics

The study area comprises primarily the Central European space. However, the area has been modified and extended to accommodate the main bioregions in central Europe. The predominant natural geographic units are the Alpine and Carpathian Mountain Ranges, the Dinaric Alps, the Pannonian Plain and the Bohemian Massif, which represents the low mountain ranges between the Alpine and Carpathian Mountains. The catchment area of the river Danube connects all these macro regions (see fig. 2). These geographic macro units form the basic structures of our study area.

Figure 2: Main natural geographical units and existing transnational cooperation institutions in the study area
(Source: Own draft of the authors)

The northern border ranges from the northern fringe of the Alps over the low lands and the Bohemian Massif to the Carpathians which also form the Eastern border. The southern border crosses the Balkans, the Northern parts of Italy to the south-western extension of the Alps. In addition, the French Alps mark the western border of our study area.

The study area is located in the temperate climate zone including parts of the transitional (e.g. Germany, Czech Republic, Poland or parts of Austria) and intermediate regions (parts of Austria, Hungary, Slovakia and parts of the Balkan). With the Western and Southern parts of the Alps being part of the study space, maritime warm climate is influential for parts of France as well as for the southern fringe of the project area (e.g. the coast along the Balkan/Dinaric Mare; and Italy). Accordingly the EEA identifies six bioregions in our study area: (EEA 2006; EEA without year, 5):

- Alpine (Austria; Bosnia-Herzegovina; France; Germany; Italy; Lichtenstein; Luxembourg; Poland; Romania; Switzerland; Slovenia; Ukraine),
- Continental (Austria; Bosnia-Herzegovina; Czech Republic; Croatia; Germany; Italy; Romania; Serbia; Slovenia),
- Pannonian (Croatia; Czech Republic; Hungary; Slovakia; Ukraine; Serbia),
- Mediterranean (Bosnia-Herzegovina; Croatia; Slovenia; France)
- Steppic (Romania) and
- Black Sea (Romania).

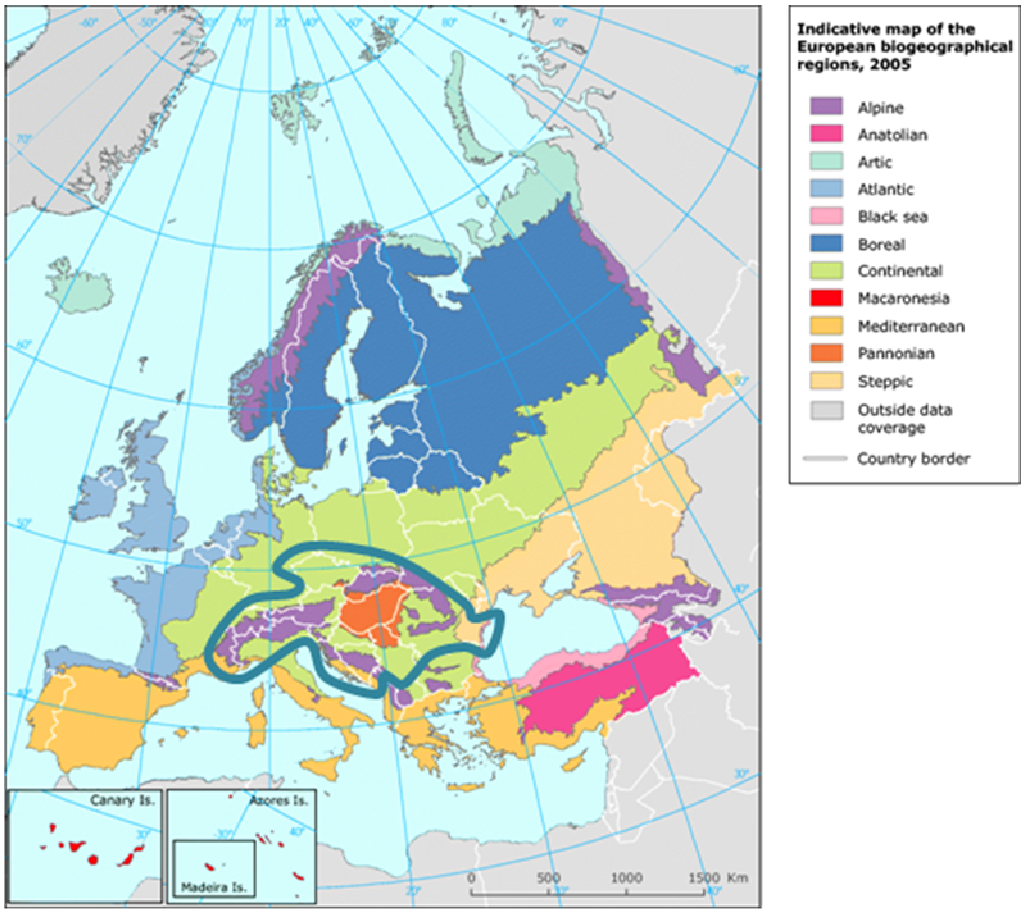

Figure 3: European biogeographical regions (Source: EEA 2006)

2.2 Population and administrative structures

The study area includes an area of approximately 1.2 million square kilometres with roughly 145 million inhabitants. It gives in many ways a diverse picture, covering the territory of 17 European countries with diverse structural, cultural and historic backgrounds.

The study area covers (at least partly) the territory of three founding members of the European Union (France, Germany, Italy), as well as the new member states of Austria (1995), Poland, Czech Republic, Slovakia, Hungary, Slovenia (2004) and Romania (2007). Furthermore it includes non EU Member States such as Switzerland, Liechtenstein, Croatia, Bosnia-

Herzegovina, Serbia, Montenegro and parts of the Ukraine. The most densely populated country is Switzerland (185 inhabitants per km^2), the most sparsely populated one is Montenegro (50 inhabitants per km^2) (EuroStat 2009).

Also economically the study area gives a very heterogeneous picture, underlining the divide between the Western and Eastern parts of the study area. On the one hand the region includes some of the countries with the highest GDP rates (per capita in Purchasing Power Standards) like Switzerland, Germany and Austria. These countries dominate also other structural indicators, such as patent applications per head (> 160 per 1mio inhabitants) and Gross domestic expenditure on R&D and have as well the highest employment rates in Europe. On the other end of these scales, we find countries like Romania, Macedonia and Croatia, with the lowest ratio of the European average, also included in our study area. Nevertheless, these Eastern European countries showed some of the highest economic growth rates in Europe for 2007 (EuroStat 2009).

3 European and National legislation and policies on ecological networks

3.1 European legislation and policies on ecological networks

The idea of ecological networks is embedded in several political strategies and legislative documents at European and international levels. The most important are – in chronological order:

- the Council Directive of 2 April 1979 on the conservation of wild birds (Birds Directive),
- the Convention on the Conservation of Migratory Species of Wild Animals, done at Bonn on 23 June 1979 (CMS),
- the Bern Convention on the Conservation of European Wildlife and Natural Habitats, done at Bern on 19 September 1979 (Bern Convention),
- the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive),
- Pan-European Biological and Landscape Diversity Strategy, submitted by the Council of Europe at the Ministerial Conference 'Environment for Europe' in Sofia, Bulgaria, on 23-25 October 1995 (PEBLDS),
- the European Spatial Development Perspective (ESDP) (EU-COM 1999),
- the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive, WFD), and finally
- the Territorial Agenda of the European Union (TAEU) from 2007.

The Birds Directive has to be considered in combination with the Habitats Directive. Both directives form the basis of the “coherent European ecological network of special areas of conservation [...] under the title Natura 2000” (Habitats Directive, art. 3, no. 1). However, the terms “ecological network” and “coherent” can be misleading in this context, because the Habitats Directive does not include provisions for an ecological network in the sense of spatially or functionally connected territories or sites. The issue of ecological coherence, linear and continuous structures, stepping stones, migration, dispersal and genetic exchange are only touched upon in article 10 of the Habitats Directive – an article that is not binding for the Member States.

The CMS stipulates that “Parties that are Range States of a migratory species listed in Appendix I shall endeavour: (a) to conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction; (b) to prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species” (CMS, art. III, no. 4).

Under the heading “Protection of Habitats” the Bern Convention states that “1. Each Contracting Party shall [...] ensure the conservation of the habitats of the wild flora and fauna species [...] and the conservation of endangered natural habitats. [...] 3. The Contracting Parties undertake to give special attention to the protection of areas that are of importance for [...] migratory species [...]. 4. The Contracting Parties undertake to co-ordinate as appropriate their efforts for the protection of the natural habitats referred to in this article when these are situated in frontier areas” (Bern Convention, art. 4). These protection requirements resulted

in the Emerald network of protected areas: “Set up under the Bern Convention but also open to ‘observer countries’ to this Convention, the Emerald Network – envisaged as early as 1989 – was given practical form in 1996 by the Standing Committee to the Bern Convention with a view to supplementing the Natura 2000 Network, on a similar basis, in non-Community countries, based on the highest possible methodological synergy. As well as helping to identify and conserve core areas of the Pan-European Ecological Network, the Emerald Network, which is in the process of being developed, also facilitates the establishment of national networks of protected areas” (CoE 2010, without page numbers).

With PEBLDS, the idea of a Pan-European Ecological Network was officially introduced, because the strategy includes the following objective: “Conservation, enhancement and restoration of key ecosystems, habitats, species and features of the landscape through the creation and effective management of the Pan-European Ecological Network” (PEBLDS, 10). The related “Action Plan on Biological and Landscape Diversity 1996-2000” includes the Action Theme “Establishing the Pan-European Ecological Network” (PEBLDS, 11).

The authors of the ESDP argue in favour of an ecological network at European level. They endorse the idea of connecting Natura 2000 sites and other protected areas by links and corridors “which can assist migration and the genetic exchange of plants and wild animals” (EU-COM 1999, 31). Furthermore they advocate identifying buffer zones around otherwise isolated protected areas (cf. EU-COM 1999, 31 f.).

The WFD does not include any direct provisions for ecological networks. Yet one key quality element for the classification of ecological status of rivers is “river continuity” (WFD, annex V, no. 1.1.1.). This implies the removal of barriers that hamper e.g. the migration of fish species such as salmon. It requires also the re-establishment of continuous river banks. This makes the WFD one of the most important legislative drivers of ecological networks or ecological continuity in the European Union today.

The TAEU is the successor of the ESDP. Its authors “advocate further developing networks of valuable nature areas and cultural landscapes n order to create an integrated and sustainable trans-European green structure with adequate corridors and zones linking protected sites and other areas of European and national importance” (TAEU, 8 [no. 26]).

In recent years “green infrastructure” has become synonymous of “ecological networks” and a buzzword in European biodiversity policies. This is epitomized by the following statement of the European Commission: “Green Infrastructure is an essential tool for climate change mitigation and adaptation. Investing in and building up Green Infrastructure needs smart and integrated approaches to spatial planning, to ensure that Europe's limited land is turned into areas capable of providing multiple functions for nature and society. It is an important element of the EU's biodiversity and nature policy, and developing green infrastructure will support achieving the agreed EU biodiversity targets. The Commission is promoting and supporting exchanges of best practice as a basis for an EU strategy on green infrastructure to be developed after 2010” (DG-ENV 2010, without page numbers). There also is an in-depth study which explores the concept of “green infrastructure” (ATECMA et al. 2010).

3.2 Transnational cooperation institutions at macro-regional level which are relevant for environmental networks

Before national legislations will be analysed in the following chapter, this part will deal with institutions and agreements on a macro regional scale that are also relevant for the analysis of ecological networks in our study area.

In our study space we can find 4 institutions and initiatives, which serve as important regional focal points for a range of activities, including issues of environmental protection and biodiversity. These structures combine different projects in their geographical regions. These institutions are:

- The Alpine Convention
- the Carpathian Convention
- the Dinaric Arc Initiative (DAI)
- the Greenbelt Europe initiative (see above-mentioned fig. 2)

Both the Alpine and Carpathian Conventions are legally binding intergovernmental agreements. The Alpine Convention was established in 1991. A similar agreement followed in 2003 for the Carpathian Mountains. Both Conventions aim at a sustainable development and nature protection in their regions.

In the Alpine case the concept of ecological networks is embodied by the Platform for "Ecological Networks of the Alpine Convention", which was founded in 2007. Supporting the implementation of the Convention's protocol on "Conservation of Nature and Countryside", the platform facilitates discussion between administrative and scientific bodies from all signatory countries on issues of ecological connectivity in the Alpine space. Its standing committee meets regularly and has been actively involved in ecological network projects in the Alps (see profiles no. 14 and 15 in annex 3).

The Carpathian Eco Region Initiative (CERI), founded in 2004, supports the coordination of biodiversity conservation and sustainable development under the Carpathians Convention. Its work is supported by various NGOs and has so far coordinated two projects on biodiversity and ecological network connections in the Carpathians (see profiles no. 2 and 3 in annex 3).

Similar to these two institutionalised frameworks, although in a much earlier stage, is the Dinaric Alps Initiative (DAI). Established in 2005 as a partnership of WWF, UNESCO-BRESCE, UNDP, IUCN, the Council of Europe and others, the group aims at securing the long-term conservation and sustainable development of this part of Europe. In 2007 the Dinaric Arc Ecoregion project (DAE) was established. The project aims at capacity building towards the establishment of a representative network of protected areas in the region. This plan received political backing in 2008 when representatives from 6 south-eastern European countries signed an agreement for joint cooperation on conservation and sustainable development of the Dinaric Arc Ecoregion.

The European Green Belt Initiative combines efforts to preserve memory of the former "Iron Curtain" with ecological networking projects and regional development. The initiative started in 2004 and the focus area spans right across Europe, from the Barents Sea to the Black Sea and the Mediterranean. The project is coordinated by the IUCN and receives widespread support from NGOs and state agencies – notably the German Federal Agency for Nature Conservation (BfN). The initiative has incorporated various projects of different scope and thematic direction.

In addition to these 4 spatially fixed initiatives or organisations, the EECONET Action Fund (EAF) is a tool on the European scale. Founded in 1995 the EAF operates as an independent fund for urgent conservation actions in Europe. It finances third parties (semi-state governmental organisations such as national parks and non-governmental organisations) to buy or lease important natural sites, or purchase concessions, as a means of securing biodiversity and landscape protection in order to contribute to the Pan European Ecological Network.

Since the establishment of the fund it has helped to acquire 158,870 hectares of land in 15 countries.

3.3 National legislation and policies on ecological networks

As a last step of highlighting the organisational structures in Europe concerning ecological networks, this chapter provides an overview of existing national legislation and policies on ecological networks. The chapter engages with examples of existing technical standards and guidance documents as well as proposals of trans-boundary interfaces/linkages. The chapter concentrates on the countries of the study area (cf. chapter 1.3), namely: Austria, Bosnia-Herzegovina, Croatia, Czech Republic, France, Germany, Hungary, Italy, Lichtenstein, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Switzerland and Ukraine. A table with more detailed information on national legislations and policies on ecological networks for each country can be found in annex 2.

3.3.1 Legislative status

Most of the countries included in our study area have, in one way or another, been concerned with a "National Ecological Network" since the 1990s. In several countries the enhancing and preserving of ecological connectivity or the creation of ecological networks has been codified through legislation and law (cf. Bennett & Wit 2001; Bonnin et al. 2007a). Most of this legislation is to be found in nature conservation laws. The first law in this respect was the Czech Act on Protection of Nature and Landscape from 1992. Other countries implemented legal regulations for the introduction of ecological network during the 1990s (e.g. Ukraine 1992; Slovakia 1994; Hungary 1996). Liechtenstein and Slovenia both incorporated the notion of 'ecological network' into their national legislation in 1996 and 1999 respectively. The German Federal Nature Conservation Act from 2002 also includes an article on ecological networks, while Croatia adopted binding national legislation first in 2003. However, the realization of ecological network concepts in a legislative context does not have to be linked to nature conservation legislation. Across the countries of the study area three other *modi operandi* can be observed:

- First, in some countries concepts were introduced into other regulative frameworks or binding directives such as spatial or landscape planning. Examples are the German *Federal Spatial Planning Act* (Raumordnungsgesetz), the French *Sustainable Spatial Planning Act* (1999) or the Austrian *Guidelines on wild animal protection* (Richtlinie Wildschutz, 1997) in Austria

- Second, the commitment to ecological networks in strategic whitepapers, visions or policy documents with mostly non-binding character. Examples are the Hungarian National Biodiversity Strategies (Ministry of Environment and Water Hungary 2004) or the agenda "Nationales ökologisches Netzwerk" for Switzerland (REN 2004)

- A third type is found in related policies, acts and directives such as agri-environmental measures or landscape management schemes (Czech Territorial System of Ecological Stability (TSES)) (Jongman & Kristiansen 2001, 20; Mackovčin 2000, 212)

3.3.2 Implementations and technical requirements

Where the term “ecological network” has been integrated into legislation, the requirements for the implementation and connected technical standards vary considerably. While some countries have started the implementation of national ecological networks on the ground (e.g. Czech Republic, Hungary), other countries are still in the preparation stages (e.g. Germany, Italy and France). Ukraine is the only country in the study area with a fixed time frame for the realization (until 2015) (Kravtsiv 2008, 496).

If formulated at all, technical requirements (such as structures of ecological networks or site selection criteria) show the same heterogeneous picture as the law making process. For example the German Federal Nature Conservation Act contains the stipulation to establish a ecological network on at least 10% of the area of the Bundesländer, mentions components of the ecological networks and demands legal protection of ecological network sites (Bundesnaturschutzgesetz 2002). In comparison, the Czech law demands a hierarchical system of local, regional and supranational ecological networks. For the TSES in the Czech Republic supraregional biocentres have a minimum required area of 1 000 ha, while a regional biocentre has to have at least 30 to 80 ha, connected by corridors (Sklenicka & Charvatova 2003): 289). Furthermore, the act mentions the simultaneous evaluation by the Czech Agency for Nature Conservation and Landscape Protection (AOPK) regarding the stabilising function of the ecological network (Mackovčin 2000, 212-214). The criteria to select suitable sites are often connected to landscape characters and species-oriented requirements. In Slovakia the creation of the TSES depends on three criteria – selection criteria (e.g. representativeness), location criteria (e.g. spatial arrangement of geo-ecosystems) and realization criteria to address the realization possibility (Jongman et al 2004: 310). In contrast, no criteria and binding technical standards for the design of ecological network exist for Italy (Pungetti & Romano 2004, 113).

3.3.3 Policy development

NGOs play an important role in providing policy instruments for shaping ecological network implementation at the national level, often through maps and/or data gathering. Good examples are the IUCN-led initiatives, which elaborated maps on the national ecological networks like of Hungary and Poland (IUCN 1995). Additionally, in the frame of PEEN, maps were developed for the Czech Republic to cover the supraregional (= national) and regional biocentres and corridors or to indicate the core areas with partly combined buffer zones and ecological corridors on the more recent map for the National Ecological Networks of Hungary and Croatia (SEENET 2009). Furthermore, for Germany a map with sites of national importance for ecological networks and of areas of elevated ecological network quality was developed (Fuchs et al. 2007). Other examples include a new draft for Poland indicating ecological corridors mainly for large mammals (Jedrzejewski et al. 2005) or the “NABU Federal Wildlife Infrastructure Plan” by a German NGO (NABU 2007) focusing on five key species. For Italy (Boitani et al. 2003) mapped a national ecological network for vertebrates through combing habitat suitably models and data on species distribution.

3.3.4 Transnationality

Generally speaking national network concepts concentrate on ecological connectivity within national territories. Nevertheless some points of reference can be traced: One interesting approach was based on a workshop hold under the auspice of the German Federal Agency for Nature Conservation concerning “International linkages of ecological corridors in Germany”, where 33 thinkable sites were identified in our study area (Finck et al. 2005). Another more technical perspective can be found for Austria, where the main connecting axes in adjacent countries were mapped (Köhler 2005). Probably the most coherent approach to create

transnational interlinks are the plans for the ECONET in Poland and the TSES in Slovakia, which both suggest the introduction of international linkages and core areas of superregional (= European) importance into proposals according to their territorial significance (IUCN Foundation Slovakia without year; Liro et al. 1995)).

Table 1: National approaches to ecological networks (Source: Own compilation by the authors)

Country	Name of the Ecological Network Concept	Codification within nature conservation legislation	Codification in other legal documents	Year of the establishment	Legal provisions for transboundary coordination of ecological networks
Austria	—	—	—	—	—
Bosnia-Herzegovina	—	—	—	—	—
Croatia	National Ecological Network (CRO—NEN)	X	—	2002	—
Czech Republic	Territorial System of Ecological Stability (TSES)	X	—	1992	—
France	Green and Blue Framework (GBF)	—	X[1]	1999	X
Germany	—	X	X	2002	X
Hungary	National Ecological Network (NEN)	X	—	1996	—
Italia	NEN	X[2]	—	1999	—
Lichtenstein	—	X	—	1996	—
Montenegro	—	—	—	—	—
Poland	National Ecological Network (ECONETPoland)	—	—	1997	X
Romania	—	—	—	—	—
Serbia	—	-	—	-	—
Slovakia	Territorial System of Ecological Stability (TSES)	X	—	1992	X
Slovenia	—	X	—	2007	—
Switzerland	NEN	—	—	2004	—
Ukraine	NEN	X	—	2000	—

[1] Planning Act paves the way to the preparation of the GBF

[2] Law indicates requirements for the establishment of a NEN

4 Identification of potential target species for ecological networks in Central Europe

Ecological networks can be based on structural connectivity (connectedness), functional connectivity, or both. Functional connectivity is usually related to the needs of certain target species or focal species.

Target species are species that help identify core areas and connecting corridors which can or should become part of an ecological network (cf. Burkhardt et al. 2003, 420; Reck et al. 2007, 4). Target species are also a prerequisite for monitoring the success of functionally conceived ecological networks (cf. Amici & Battisti 2009). Furthermore they can be useful in the following regards:

- "To identify and promote awareness of the most important species [...] for species conservation; [...]

- To help direct conservation activity and available funding towards these species and their sites;

- To provide a tool for planning and management, at practical and political levels, through the presentation of key information on species, sites, land uses, threats, legal protection and conservation status" (Ozinga et al. 2005, 14).

There are many possible criteria for selecting target species, e.g.:

- sensitivity against fragmentation; species' needs concerning migration and dispersal ranges (cf. Amici & Battisti 2009; Battisti 2003, 244; Bouwma et al. 2004, 102),

- legal protection, threat and geographical distribution or endemism respectively (cf. Ozinga et al. 2005, 13 f.), and

- their needs in terms of area size (cf. Bouwma et al. 2004, 102; Reck et al. 2007, 6).

The study of Ozinga et al. (2005) includes quite exhausting lists of species. These lists represent but the starting point of a refined selection of target species.

Bouwma et al. (2004) have reviewed 420 vertebrate species (including some subspecies) for their suitability as target species for ecological corridors on a European scale. They "estimated that, of the species reviewed, 104 could benefit from European corridors. Of these 104 species 69 are birds, 23 are mammals (mostly large herbivores and carnivores) and 12 are fish. Mammals require most of all dispersal corridors, fish need migration corrdiors, and birds require both dispersal and migration corridors" (Bouwma et al. 2004, 102). The authors do not provide lists of the individual species they have identified. However, a list "of species proposed for identification of PEEN in CEE" can be found in Bouwma et al. (2002b, 120 ff.). It includes 33 mammals, 140 birds, 13 amphibians and reptiles, 30 fishes, 102 invertebrates, and 131 plants.

Besides, there are national lists of priority species for ecological networks such as the one in Burkhardt et al. (2004, 61) for Germany. It includes just 17 mammals, 19 birds, 5 reptiles, 6 amphibians, 15 fishes, and 16 invertebrates.

There is no "objective" method to judge which species ought to be selected as target species for ecological networks in Central Europe. Such decisions depend – among other factors – on

- the spatial scale of analysis and planning,

- the conditions on site,
- political decisions,
- personal interest of the actors involved such as representatives of NGOs or scientists, or
- the degree to which certain species can be conveyed as target species to a broader public.

Some authors claim to have followed an "expert-based approach" (Amici & Battisti 2009) in selecting focal species in ecological network planning. However, the feasibility and appropriateness of such approaches can be questioned for many reasons – especially if the respective ecological network is supposed to cover a large territory:

- The matter is intricate. Huge amounts of data have to be analyzed. This could be one reason why for instance the expert group Burkhardt et al. did not manage to come up with a final official list of target species for ecological networks in Germany (cf. Burkhardt et al. 2004, 36).
- Environmental conditions and species distributions are changing constantly (cf. e.g. Opdam & Wascher 2004). Therefore a comprehensive list of target species would have to be under permanent revision.
- The implementation of ecological networks in the functional sense is not required by law – neither at European nor at national levels. Nobody can be forced to establish such an ecological network. Thus, comprehensive lists of target species can always have but indicative, informative functions. The selection of target species in a concrete case will usually not be guided by technical criteria alone, but also by aspects such as the communicability of species (see above).

Having this in mind, some examples of potential target species for ecological networks in Central Europe are listed below (see tab. 2). The species are taken from Bouwma et al. (2002b, 120 ff.) and Burkhardt et al. (2004, 61).

Table 2: Informative, indicative list of exemplary vertebrate species that might function as target species for ecological networks in Central Europe (based on: Bouwma et al. 2002b, 120 ff.; Burkhardt et al. 2004, 61)

Group	Species
Mammals	*Barbastella barbastellus (*Barbastelle) *Bison bonasus* (Wisent*)* *Canis lupus* (Wolf*)* *Castor fiber* (European Beaver) *Lutra lutra* (European Otter) *Lynx lynx* (Eurasian Lynx) *Miniopterus schreibersi* (Common Bent-wing Bat) *Myotis emarginatus* (Geoffroy's Bat) *Rhinolophus ferrumequinum* (Greater Horseshoe Bat) *Ursus arctos* (Brown Bear)
Birds	*Aquila chrysaetos* (Golden Eagle) *Aquila pomarina* (Lesser Spotted Eagle) *Botaurus stellaris* (Eurasian Bittern) *Ciconia nigra* (Black Stork) *Circaetus gallicus* (Short-toed Eagle) *Circus cyaneus* (Hen Harrier) *Circus pygargus* (Montagu's Harrier) *Grus grus* (Common Crane) *Haliaeetus albicilla* (Sea Eagle) *Milvus milvus* (Red Kite) *Numenius arquata* (Eurasian Curlew) *Otis tarda* (Great Bustard) *Pandion haliaetus* (Osprey [or: Fish Eagle]) *Strix uralensis* (Ural Owl) *Tetrao tetrix* (Black Grouse)
Reptiles	*Elaphe longissima* (Aesculapian Snake) *Emys orbicularis* (European pond turtle)
Amphibians	*Bombina bombina* (European Fire-bellied Toad) *Bombina variegata* Yellow-Bellied Toad) *Rana dalmatina* (Agile Frog) *Triturus montandoni* (Carpathian Newt)
Fishes	*Acipenser ruthenus* (Sterlet) *Eudontomyzon mariae* (Ukrainian brook lamprey) *Lampetra fluviatilis* (European river lamprey) *Salmo salar* (Atlantic salmon)

5 Transboundary, supra-local cooperation initiatives in Central Europe related to ecological networks

5.1 Introduction

As chapter 2 has shown, a wide range of countries in our project space currently adopt or plan to introduce ecological network concepts into their legislation or policy making. These network strategies mainly focus on national territories and pay lesser attention to transboundary ecological habitats, thus ignoring the cross-border connections existing between many important natural sites and habitats. Against this background and as a third step of the analysis, this chapter will focus on ecological network concepts and initiatives with a clear transboundary character.

The following chapter gives an overview about all initiatives in our study area dealing with transnational ecological networks in the frame of the applied methodology. However it cannot be stated that this is the complete list of all activities in the study region. Although extensive research efforts have been made, including internet and document research, as well as expert interviews, it might be that the research has missed an initiative or has misinterpreted the data available. Also it should be taken into account that not all information about projects that might have matched our criteria was necessarily available in English. Yet this was a precondition to identify an initiative, given the limited amount of time and resources available for this project.

5.2 Overview on relevant initiatives

In a first step, many different concepts, projects and initiatives were identified, which refer in one way or another to measures of ecological network building and transboundary cooperation. However, not all of those initiatives met the criteria set out in chapter 1. In the end 24 initiatives remained (see tab. 3 and fig. 4).

The survey considered the aims of the initiatives, by asking if they are *conceptual*, *practical* or focused on *tourism and rural development*. By *conceptual*, it is meant that the cooperations focus on concepts as their main output. Their final results often consist of a map or an action plan for species or landscape units, but do not implement practical re-cultivation or protection measures on the ground. This is the case of the second type of initiative identified: These *practical* initiatives focus mainly on measures for the protection of species or re-cultivation of landscapes etc. As a last category such initiatives were highlighted, which do not only focus on environmental aspects of transboundary ecological networks, but additionally give important weight to issues such as *tourism or rural development*. The table also indicates if the initiatives in focus are following a *functional* or a *structural* approach in the implementation of their transboundary projects. Functional approaches put single target/focal species at the centre of their ecological network concept, while structural approaches aim to provide connectivity for entire communities instead of individual species. Given the diverse sample of initiatives these categorizations cannot be applied strictly for all the cases in focus. Some initiatives combine for example conceptual and practical measures in their work, while others have both structural and functional components.

Table 3: Transboundary, supra-local cooperation initiatives in Central Europe related to ecological networks (C = Concept, P = Practical measures, TRD = Tourism and Rural Dev.) (Source: Own compilation of the authors)

Profile no.	Name of initiative	Main focus of the initiative	Underlying concept of connectivity	Funding	Participating countries	Macro-Region
1	Green Belt -Protection and valorisation of the longest habitat system in Europe	P, TRD	Structural	EU (INTERREG)	AT, CZ, GE, HU, SK, SLO, HR	Pan-European
2	Western Carpathian Ecological Network	C	Both	Foundation (DBU)	CZ, SLK, PL, HU	Carpathians
3	Development of a Carpathian Ecological Network	C	Both	National Government (BBI-Matra)	UKR, RO, SRB, MNE	Carpathians
4	Realising transboundary connectivity Ukraine	C	Both (Brown bear, wild cat, bison, lynx)	National Government (BBI-Matra)	UKR, RO, PL	Carpathians
5	Lower Danube Green Corridor (LDGC)	P	Structural	NGO (WWF)	UKR, RO, BG, MD	Carpathians
6	Trans-European Wildlife-Networks (TEWN)	P	Structural	NGO (EuroNatur)	PL, HR, SK, RO, BG	Carpathians
7	Cross-border Protection of the Great Bustard	P	Functional (Great Bustard)	EU (INTERREG)	AT, SLO, HU	Pannonian Plain
8	Lafnitz - Habitat cross-linking on an Alpine pannonian river	P	Both (Fishes)	EU (LIFE)	AT, HU	Pannonian Plain
9	Ecological Network along the Sava River	C	Both (Amphibians, birds)	National Government (PIN-Matra)	SLO, SRB, HR, BiH	Dinaric Alps
10	Lifeline Drava-Mura 2009-2020	P	Both (Fishes, birds, reptiles)	NGO (WWF, EuroNatur)	AT, HR, SLO, HU, SRB	Dinaric Alps

Profile no.	Name of initiative	Main focus of the initiative	Underlying concept of connectivity	Funding	Participating countries	Macro-Region
11	Protection of Biodiversity of the Sava River Basin Floodplains	P, TRD	Structural	EU (LIFE)	BiH, HR, SRB, SLO	Dinaric Alps
12	Alpine-Carpathian-Corridor- Feasibil-ity study	C	Both (Wolf, bear, red deer, lynx)	NGO (WWF)	AT, SK, CZ, HU	Alps - Carpathian
13	'Ecological transboundary network' (in the Alps)	C	Structural	NGO (ALPARC)	AT, GE, IT, SLO, CH, LI, FR, MC	Alps
14	Ecological Continuum Project	P	Both	Foundation (MAVA)	AT, GE, IT, SLO, CH, LI, FR, MC	Alps
15	ECONNECT	P	Both	EU (Alpine Space)	AT, GE, IT, SLO, CH, LI, FR, MC	Alps
16	“Bat conservation in the Alpine and Adriatic Region”	P	Functional (Bats)	EU (INTERREG)	AT, IT, SLO	Alps
17	Principles for the Establishment of an Alpine brown bear population	C	Functional (Brown bear)	EU (LIFE)	AT, IT, SLO	Alps
18	Protection of Amphibians in the Al-pine-Adriatic space	P	Functional (Amphibi-ans/reptiles)	EU (INTERREG)	AT, IT, SLO	Alps
19	Living Space Network	P, TRD	Both (Bats)	EU (INTERREG)	AT, GE, IT, CH	Alps
20	Wetlands and stork habitats between Alpenrhein and Donau	P, TRD	Both (Stork)	EU (INTERREG)	AT, CH, GE, LI	Alps
21	Regional Ecological Network Mapping in Visegrád 4 + 2	C	Structural	National Govern-ment (Ministry of Environment, HU)	CZ, HU, SK, PL + UKR, HR	Pan-European
22	Indicative Map of the Pan-European Ecological Network for Central and Eastern Europe	C	Structural	Foundation (ECNC)	CZ, HU, PL, SK, UKR, RO, (+MD, BY, RUS, LV, LT, EST)	Pan-European

Profile no.	Name of initiative	Main focus of the initiative	Underlying concept of connectivity	Funding	Participating countries	Macro-Region
23	Indicative Map of the Pan-European Ecological Network in South Eastern Europe	C	Structural	National Government (BBI-Matra)	BiH, HR, SRB, MNE, SLO (+ AL, BG, CYR, GR, FYR MK, TR)	Pan-European
24	Indicative Map of the Pan-European Ecological Network in Western Europe	C	Structural	National Government (Ministry of Agriculture, NL)	Western Europe	Pan-European

Figure 4: Transboundary, supra-local cooperation initiatives in Central Europe related to ecological networks
(Source: Own draft of the authors)

5.3 Analysis and comparison

Practical and conceptual initiatives

- As stated above, some transnational ecological network initiatives focus on conceptual work. This leads to the preparation of strategy papers and policy documents, maps or scientific research papers on migrating species or landscape structures/gaps in a transboundary context. These aim at the prioritization of desirable conservation benefits. In total 11 initiatives match this characterisation. Good examples for such initiatives are the regionalised PEEN maps for Europe (profile no. 22-24) or development studies for ecological networks in regional contexts, e.g. Sava river (profile no. 9). Most of the concepts are focused on the European scale or larger landscape units (e.g. the Alpine mountain range, profile no. 13)

- 13 initiatives have their focus on practical implementation measures to ensure, create or enhance transboundary ecological network structures on the ground, often by establishing and facilitating wildlife movement. Such measures can include reclamations of landscapes (i.e. the “Lower Danube Corridor”-project, profile no. 5) or measures to improve habitats for certain species (i.e. the “Great Bustard”-project, profile no. 7).

- 4 initiatives have, in addition to their ecological component, also a strong focus on tourism and rural development. They are combining cross-border ecological networking with integrated approaches towards tourism activities or the improvement of rural economies (i.e. the “Lech river project”, profile no. 4).

Additionally the research asked for the initiative's conceptual focus: Do they have *functional* approaches by focusing their efforts on certain target species or do they follow a *structural* approach, i.e. linking of spatially coherent sites, like river basins etc.? As a result 4 initiatives were identified, which clearly have a functional approach, targeting species such as bats, brown bears and others. 9 initiatives follow a structural approach, mainly concentrating on similar habitat systems like rivers or cross-border landscapes (i.e. "Sava River Floodplains", profile no. 11). A further 11 cooperations combine such features, making reference to target species, as well as certain habitat systems. The range of species targeted by the identified cooperation initiatives is diverse: Larger carnivores are especially well represented (brown bear (3 initiatives), lynx (2), wolf (1)), also amphibians/reptiles (3), birds (3), fishes (2) and bats (2) are mentioned.

Funding

Considering the main *funding sources* of the initiatives, the overall picture varies: The biggest donor of funds is the European Union (10 initiatives) through its regional cooperation and environmental programmes (INTERREG (7) and LIFE (3)). The EU funding has been mainly granted to initiatives that the research has characterised as practical (9 out of 13). National governments not only played an important role in co-financing the European projects, but also funded 6 initiatives as the leading contributor. NGOs (like the WWF, EuroNatur and others) have substantially contributed to 5 initiatives, while 3 of the initiatives were mainly financed by environmental foundations (MAVA, DBU, ECNC). These results point to the importance of state funding, especially in case of dealing with the often costly practical implementation of restoration measures.

Geographic location / distribution

In the map in figure 4, the main natural geographic units of the study area have been overlaid with the initiatives which have been identified. The map reveals an unequal geographical distribution of the initiatives in focus: 8 projects are located in the Alps, 5 in the Carpathian Mountains, 3 in the Dinaric Alps region, and 2 in the Pannonian Plain. These results point at the one hand to the importance of EU funding (the Alpine region benefitted considerably from the EU's "Alpine Space programme"), but also indicates the special importance of mountain regions as a focus of transboundary ecological cooperation. An additional conclusion can be made, when drawing on the analysis provided by chapter 2.2., which focused on the grade of macro-regional level organisation. The Alps are the macro-region with the highest number of single initiatives and are also the area with the oldest and most highly integrated organisational structures on macro-regional level (in form of the Alpine Convention). Accordingly the regions which lack such structures, as the Bohemian Massif or the Pannonian Plain have none or only a few ecological network initiatives of transboundary character. This finding points to the importance of pre-existing transboundary institutions as facilitators to prepare funding proposals for projects dealing with ecological (network) issues.

Actors

As far as information is available, it can be said that most cooperation initiatives were launched by NGOs and a few also by research institutions. Regarding the partners involved in such initiatives, manifold actors can be found, including public agencies, national and regional governments, municipalities, and private consultants. But again, only few cooperation initiatives do without NGOs and/or research institutions. By contrast, the protected area administrations are only participating in very few such initiatives. Hence NGOs and researchers are the key actors in this field.

5.4 Conclusion

This chapter provided an overview of transboundary ecological network cooperation initiatives. The analysis shows the broad variety of the initiatives using in one way or another ecological network concepts in their work. Such initiatives have sometimes very regional scopes, dealing with river basins or certain landscape units; while others develop concepts and measures for whole macro-regions, such as the Alps or the Carpathians mountain ranges. Also the focus of the initiatives is diverse, some follow a functional, some a structural approach and some mix both approaches.

From the analysis it becomes obvious that there is no such thing as “the” transboundary ecological network initiative. There is a wide range of conceptions, strategies and practical measures all linked to regional or local problems and opportunities, focussing on different scales. Very interesting in this context is the formation of “umbrella” initiatives for certain macro regions, providing an organisational basis for ecological network initiatives. These umbrella initiatives are trying to develop long-term concepts for their regions, often developing or integrating practical projects under their agenda. These initiatives can be regarded as an important step towards a coherent establishment of ecological networks in such regions. Their perspective is long-term, binding together various actors towards the achievement of common goals.

6 Summary, conclusion and recommendations

6.1 Summary and general conclusion

The establishment of ecological networks is an entirely voluntary activity. It would hardly be possible in Europe to file a suit against a government or a conservation agency for not implementing ecological networks in the sense of structurally or functionally related sites as defined in chapter 1.2.

The notion of ecological network plays an important in European and national legislation as well as in non-binding political strategy documents – both in the fields of nature conservation and spatial planning.

There is no “objective” method to judge which species ought to be selected as target species for ecological networks in Central Europe or to decide where such networks ought to be established. Several authors have already attempted to identify respective target species. Anyone who contemplates conceiving an ecological network in Central Europe can draw upon these works.

With a total of 24, a large number of transboundary, supra-local cooperation initiatives related to ecological networks could be identified in the study area for the time period 2000-2009. Eleven initiatives focus on conceptual work. 13 initiatives concentrate on practical implementation measures, four of which are also addressing issues such as tourism and rural development.

Most cooperation initiatives are funded through EU financing schemes, whereas national governments, NGOs and foundations are equally important donors of ecological network initiatives.

Only a minority of initiatives (4) is targeted exclusively on functional objectives such as the protection of certain target species. Most initiatives are either based on structural approaches or combine structural and functional aspects.

NGOs and research institutions are the key actors in this field. Most cooperation initiatives were launched by NGOs or scientists. Regarding the partners involved in such initiatives, again only few cooperation initiatives do without NGOs and/or research institutions. By contrast, the protected area administrations are only participating in very few such initiatives.

6.2 Recommendations

Depending on the perspective, a number of different recommendations can be given. From a conservation point of view, efforts should be intensified reduce habitat fragmentation and the loss of ecosystems, to safeguard existing migration and dispersal corridors and to re-establish corridors. In addition, more large, natural, undisturbed potential core areas – whether transboundary and located within national areas – should be created. Furthermore, regional, national and European concepts and activities should be better coordinated and integrated with each other.

From the viewpoint of a a biologist or a policy analyst, the notion of ecological networks represents mainly a communication tool and less a sound scientific concept. The issues of fragmentation and ecological networks are easily to convey, even to a lay audience. However, it is important to prevent ecological networks from becoming a defensive approach which reduces nature conservation to just a few core areas, buffer zones and connecting corridors. Instead, it is crucial to improve the permeability and habitat quality of the entire

landscape matrix, to reduce harmful effects of land-uses such as agriculture, housing and transport, and to increase the number of large, undisturbed natural areas.

Annex 1: List of interviewees

Semi-structured interviewed were held by phone with the following persons.

Name	Institution	Date
Jacques Baudry	Directeur de Recherche, INRA National Institute for Agronomic Research, Rennes/France	09.06.2009
Prof. Luigi Boitani	Head of the Department of Animal and Human Biology, University Rome/Italy	10.06.2009
Pieter De Pous	Policy Officer, Biodiversity, Soil Protection, Agriculture and Water at European Environmental Bureau (EEB), Brussels/Belgium	25.06.2009
Floris Deodatus	Expert - Ecology & Biology at Altenburg & Wymenga Ecological Consultants, Veenwouden/Netherlands	08.07.2009
Michel Deshayes	Cemagref – UMR TETIS – Territoires, Environnement, Télédétection et Information Spatiale, Montpellier/France	06.07.2009
Dr. Lawrence Jones-Walters	Senior Programme Officer ECNC, Tilburg/Netherlands	09.06.2009
Prof. Ivan Kruhlov	Chair of Physical Geography; Ivan Franko National University, Lviv/Ukraine	18.06.2009
Magdalena Makles-Mierzejewska	Coordination Center for Environmental Projects (CCEP), Warsaw/Poland	16.06.2009
Dr Axel Paulsch	Institute for Biodiversity (IBN), Regensburg/Germany	25.06.2009
Dr. Jan Plesnik	Deputy Director of the Agency for Nature Conservation and Landscape Protection, Prague/Czech Republic	08.06.2009
Rainer Raab	Central European Great Bustard co-ordinator, Deutsch-Wagram/Austria	22.06.2009
Dr. Jörg Rauer	Research Institute of Wildlife Ecology, brown bear management, Vienna/Austria	29.06.2009
Aurelia Ullrich	CIPRA International, Work field: Ecological networks – Continuum Project and ECONNECT, Schaan/Liechtenstein	11.11.2009
Christoph Walder	WWF-Project Manager „Brown bears“, Vienna/Austria	30.06.2009

Annex 2: Overview of national legislations and policies on ecological networks

(Sources: Barthod & Deshayes 2009; Bennett & Wit 2001; Berthoud et al. 2004; Boitani et al. 2003; Sources: Bonnin et al. 2007b; CEEWEB no year; Hedden-Dunkhorst et al. 2007; Jedrzejewski et al. 2005; Jongman & Kristiansen 2001; Kravtsiv 2008; Leibenath 2008; Liro et al. 1995; Mackovčin 2000; Mauerhofer 2006; Miklós 1996; Mirea & Aredleanu 2008)

Country	**Legislation on ecological networks in place? Reference to transnational aspects?**	**Technical standards**	**Other relevant policies**
Austria	No legislation on federal level, reference to issues of ecological connectivity in game law ("Wildschutz") on state level.	—	—
Bosnia-Herzegovina	—	—	—
Croatia	Nature protection Bill (Official Gazette No.162/03): • Article 7- definitions of ecological networks, ecological corridor and ecologically significant area; • Articles 56, 57, 58, 59 and 60- Preservation of ecological network	In compliance with EU mechanism Habitat Directive, parts of the ecological network can be protected by some protected area category, or by developing special management plans and mechanisms of nature acceptability assessment for each threatening intervention	—
Czech Republic	Czech National Council Act No 114/1992, Gazette on Protection of Nature and the Landscape	The TSES aims at network of ecologically significant segments of the landscape, efficiently distributed on the basis of functional and spatial criteria. Main implementation has to be carried out on local level. Implementation can take place through: • Designation of specially protected areas • Landscape management schemes and programmes carried out by the Ministry of Environment	—
France	Sustainable Spatial Planning (General Principles) Act (loi d'orientation) in 1999 legally recognizes the concept of ecological networks	—	Currently a law being prepared that will regulate the creation of the "Green and Blue Framework (GBF)" ecological network until 2012

Country	Legislation on ecological networks in place? Reference to transnational aspects?	Technical standards	Other relevant policies
Germany	Federal Nature Conservation Act (*Bundesnaturschutzgesetz, BNatSchG*) 2002 includes provision for ecological networks at different levels	Federal Conservation Act (BNAtschG) § 3: • contains the stipulation to establish a cross-border ecological network on at least 10% of the area of the Länder (-> the main ruling competence rests at the Länder) • function of safeguarding endogenous animal and plant species including their habitats as well as protection and (re)establishment of ecological interrelations • Composition of core areas, connecting areas and connecting elements • No further general technical standards for the design of ecological networks are cited	• National Biodiversity Strategy: ecological networks are a key element of the national biodiversity strategy of the German federal government (BMU 2007a): • Working Group "Cross-border ecological network" (*Arbeitskreis "Länderübergreifender Biotopverbund"*) • R & D project "Sites of national importance for habitat networks" ("*National bedeutsame Flächen für den Biotopverbund*")
Hungary	The legal basis of the National Ecological Network is the 1996 Nature Conservation Act, No. LIII	This act singles out implementation of a national ecological network as an important objective in the National Programme for the Environment. It also defines the ecological network as a network of protected areas, buffer zones and peripheral areas. The core areas in the network must be fully protected by the end of 2008	—
Italia	1999 Approval of a document outlining the design parameter of the Italian ecological network through the Ministry of Environment (Nature Conservation Directorate)	Generally speaking, the Italian planning legislation does not yet consider environmental connections. Only a few regional urban planning laws (e.g. in Basilicata and Emilia Romagna) refer to ecological networks and corridors	—
Liechtenstein	1996 National Law on "Gesetz zum Schutz von Natur und Landschaft", Art.7	The law stipulates the responsibility of state and communities to take appropriate measures to connect ecologically important habitats • Intensively used areas have to be ecologically compensated by state and communities • A landscape planning concept should give clear indications over core areas, natural development zones, buffer zones and corridors. The aim is the establishment of an interlinked habitat system	—

Country	Legislation on ecological networks in place? Reference to transnational aspects?	Technical standards	Other relevant policies
Montenegro	—	—	• UNDP funded project “Montenegro: Strengthening the sustainability of the protected areas system of the Republic of Montenegro” • National Ecological Network [NEN] for Montenegro and its implementation plan is designed.
Poland	—	—	• In 1995 a first survey map was developed by IUCN. Division between „core areas“ and „ecological corridors“ of national and international importance as well as “biocentres and buffer zones” • 2005 a new map concerning ecological corridors was created via SEENET
Romania	—	—	—
Serbia	—	-	—

Country	Legislation on ecological networks in place? Reference to transnational aspects?	Technical standards	Other relevant policies
Slovakia	• Resolution of the Slovak Government No 319/92 which approved Supraregional TSES of SR and prepared regional level • Basis are the legally binding Territorial Planning Act (no. 50/1976) and the Nature and Landscape Protection Act (no 287/1994)	The creation of "Territorial System of Ecological Stability" (TSES) based on three criteria: • Selection criteria looking on representativity, ecological significance, internal ecological stability, size and shape; • Location criteria focus on position and spatial arrangement of geo-ecosystems, requirements of soil and water protection, anti-erosion measures, filtration, micro-climate, hygienic, aesthetic functions and ecostabilising functions; • Realisation criteria with determination of the possibility of TSES realisation in an area, especially evaluating if the current structure of the landscape provides existing elements for TSES as well as the ecological quality of the current landscape structure and existing legal protection of the elements of TSES. The main realisation criteria are ecological quality of the current landscape structure, existing legal protection of the elements of TSES	—
Slovenia	Nature Conservation Act (1999) defines ecological network; lays down diversity conservation measures and a system for the protection of valuable natural features with the purpose of contributing to nature conservation.	Elements of the ecological network according to the Nature Conservation Act: • Protected area (core zone) • Natura 2000 (core zone) • Ecologically Important areas (transitional zone)	—
Switzerland	The paper on the National Ecological Network ("Réseau écologique national" – REN) is integrated into the *Landschaftskonzept Schweiz* which was ratified by the Swiss legislative (LKS, 1997)	The REN for Switzerland is a non-binding national strategy paper, which evaluates natural habitats and linkages between them. The paper aims to highlight the connections between different Swiss natural habitats.	—

Country	Legislation on ecological networks in place? Reference to transnational aspects?	Technical standards	Other relevant policies
Ukraine	The legal foundation for creating a network of nature conservation areas is based on the Ukrainian law of nature conservation inventory (1992) and the national program of creating a national ecological network in Ukraine during a period from 2000 to 2015	Yes, in article 4 paragraphs mention connectivity with ecological networks of neighbouring countries	—

Annex 3: Profiles of transboundary, supra-local cooperation initiatives in Central Europe related to ecological networks

Profile no.: 1 **Green Belt – Protection and valorisation of the longest habitat system in Europe (Project)**	
General information	
Information sources/web site	www.cadses.net/en/projects/apprpro.html (last access: 17.11.2009)
Geographic location and extent of the network	• AT, CZ, GE, HU, SK, SLO, HR • Border areas along the former "Iron Curtain"
Strategic and specific objectives of the cooperation initiative	• Long term protection of the unique natural heritage • Implementing pilot studies with solution oriented approaches in the fields of traffic, tourism, regional marketing and education. • Protecting the trans-national habitat-system through an analysis of gaps in the ecological network and evaluation and promotion of measures to close these gaps
Run time	2006 – 2008
Results	• Conducting feasibility studies on "Gap analysis of the Green Belt", "Sensitive traffic development" and "Involvement of the local population into Green Belt tourism" • Introducing new corporate design of the Green Belt initiative, including a website (www.greenbelteurope.eu) • Developing transnational tourism marketing strategies, guidelines for local branding and efforts in establishing a network of providers of eco-tourism services.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Gap analysis via CORINE land cover data (b) • Feasibility studies (c) • PR and tourism
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Structural; Connectivity of habitats along the Green Belt
Actors and institutions	
Predecessors or this initiative	-
Initiators	European Green Belt initiative
Institutional and legal framework	• NATURA 2000 • European Spatial Development Protocol (ESDP)
Funding sources	EU: INTERREG III - B CADSES
Involved organisations or key individual actors	Lead partner: • Association for Rural Development in Thuringia (GE) Other partners: • BUND - Friends of the Earth Germany (GE) • University of Applied Science Erfurt (GE) • Academy of Sciences Czech Republic (CZ) • Oziveni-Bohemian Greenways (CZ) • Hnuti Duha, Friends of the Earth Czech Republic (CZ)

	• Institute for Nature Conservation Austria, Graz (AT) • Association for Nature Conservation Burgenland (AT) • Slovak Environmental Agency (SK) • Regional Environmental Centre for Central and Eastern Europe (SK) • Hungarian Cyclist Club (HU) • Castanea Society for Environmental Protection (HU) • Javni Zavod Krajinski Park (SLO) • ETP Foundation (BG) • State Institute for Nature Protection (HR)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 2 **Western Carpathian Ecological Network**	
General information	
Information source/web site	• www.carpates.org/ongoing.html • www.carpates.org/dbu_index.html (last access: 08.10.2009)
Geographic location and extent of the network	• CZ, HU, PL, SK • Major ecosystem are the Western Carpathian mountain ranges

Strategic and specific objectives of the cooperation initiative	Strategic aim is to design the Western Carpathian Ecological Network on a regional scale, as a complement to the ecological network, which is under preparation in Ukrainian, Romanian and Serbian part of the Carpathians (see Profile No. 3)
	• Specific aims:
	  • building of a Carpathian Biodiversity Information System
	  • elaborating a strategic action plan outlining the future process of its implementation
	  • designing an ecological network in the Western Carpathian

Run time	2008 – 2010
Results	Regular project reports are available at the web site. Following the last Progress-Report (No. 4, period October – December 2008) work on activity 5 has started.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection and processing, through mobilization of the experts to gather missing data (on species, biotopes) and through processing of the gathered and already existing data into the common Biodiversity Information System of the Western Carpathians • Data collection and establishment of the CBIS (Carpathian Biodiversity Information System) (b) • Select key species and habitats and set a target for conservation for each of them and identify elements of ecological network • Discuss the design of ecological network and elaborate a strategic action plan for an ecological
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. • Only the units representing Carpathian mountains will be included (lowlands and plains will be excluded) Data collection in the project countries provides a lists of plant and animal species and habitats (according to Habitat Directive)
Actors and organisation	
Predecessors of this initiative	IBN – Institute for Biodiversity (GE) and Daphne - Institute of Applied Ecology (SK) already had a small project funded by the Deutsche Bundesstiftung Umwelt (DBU) in the Carpathians
Initiators	CERI – see connections to BBI-MATRA project (Profile No.3)
Institutional and legal framework	CERI and the Carpathian Convention (Article 4.5)
Funding sources	Foundation: Deutsche Bundesstiftung Umwelt (DBU)
Involved organisations or key individual actors	• Institute for Nature Conservation, Polish Academy of Sciences, Kraków (PL) • Daphne – Institute of Applied Ecology (CZ) • Institute of Botany, Slovak Academy of Sciences, Bratislava (SK) • E-misszió – Environmental and Nature Conservation Association (HU)

	• IBN – Institute for Biodiversity (GE)
Internal structure such as secretariat, advisory board etc.?	Project takes places under guidance of the CERI initiative

Profile no.: 3 **Development of a Carpathian Ecological Network -Strengthening the Capacities of the Carpathian Eco-Region Initiative (CERI) in Supporting the Implementation of the Carpathian Convention**	
General information	
Information sources/web site	• www.carpates.org/ongoing.html • www.carpates.org/matra_index.html (last access: 10.08.09)
Geographic location and extent of the network	• UKR, RO, SER, MNE • Major ecosystem in the focus is the Eastern Carpathian Mountain range
Strategic and specific objectives of the cooperation initiative	• Supporting the implementation of the Carpathian Convention through the development and realization of a coherent transboundary ecological network as part of sustainable development in the Carpathians • Strengthening the capacities of the CERI and design of a coherent transboundary ecological network. • Building of a "Carpathian Biodiversity Information System" (CBIS)
Run time	2006 –2009
Results	• Lists of alliances and species • System for a design of Carpathian Ecological Network • Carpathian Biodiversity Information System • Map of an ecological network. Map: "The best ecological network for the eastern Carpathians (composed of "conserved " and "additional areas")"
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) Data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection, selection of key species and habitats (b) • Identifying flagship species to evaluate the connectivity of the provisional ecological network • Design of a ecological network in the Eastern Carpathians
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both; Concept is based on an analysis of existing protected areas linked through a network of ecological corridors for a number of flagship species
Actors and institutions	
Predecessors or this initiative	Project takes places under guidance of the CERI initiative
Initiators	CERI – see connections to DBU project (Profile No.2)
Institutional and legal framework	• Birds and Habitats Directives, PEEN • CERI and the Carpathian Convention (Article 4.5)
Funding sources	National Government: BBI-MATRA (NL)
Involved organisations or key individual actors	Implemented by: • Wageningen International (NL) Project partners: • CERI – Carpathian Ecoregion Initiative • WWF Danube-Carpathian Program • Daphne – Institute of Applied Ecology (SK) • Orbicon Consultants (DK) • European Centre for Nature Conservation (ECNC) • Interim Secretariat of the Carpathian Convention
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 4 **Realising trans-boundary ecological connectivity in the Ukrainian Carpathians**	
General information	
Information sources/web site	• www.altwym.nl/pages/175 (last access: 18.10.09) • Additional information by Prof. Ivan Kruhlov (18.06.09) and Floris Deodatus (08.07.09)

Geographic location and extent of the network	• UKR, RO, PL
	• Two local field sites/areas:
	  • Northern Ukrainian Carpathians on the Polish border between national parks
	  • Southern Ukrainian Carpathians on the Romanian border

Strategic and specific objectives of the cooperation initiative	• Planning and establishing corridors between selected protected areas in Ukraine, Romania and Poland, as a pilot exercise to investigate best practices and policies for corridor development. • Transferring results into the planning and policy process at national and regional level through the Ministry of Environmental Protection of Ukraine and the international network of the Carpathian Convention.
Run time	2008 - 2010
Results	-
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc (b) planning, conceptual work (c) practical implementation	(a) Create profiles for the species (b) • Analyse requirements of the target species to define the optimal corridors • GIS model (c) • Implementation of results into the planning law
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural connectivity in the Carpathian mountains; Focal species: Brown bear, wild cat, European bison, lynx
Actors and institutions	
Predecessors of this initiative	Precursor was a project for Romania “Safeguarding the Romanian Carpathian ecological network” (project from 2001-2005)
Initiators	-
Institutional and legal framework	PEEN
Funding sources	National Government: BBI –MATRA (NL)
Involved organisations or key individual actors	Project coordinator: • Altenburg & Wymenga Consultants (NL) Partners: • Ukraine Ministry of Environmental Protection (UKR) • Skolivs’ki Beskydy National Park (UKR) • Vyzhnyts'kyi National Park (UKR) • Ivan Frank University (UKR) • Universities of Lviv and Chernivtse (UKR) • Vanatori Neamt National Park (RO) • Stacja Badawcza Fauny Karpat (PL) • Lublin university/National Museum (PL)

	• Dutch Service for Rural Development (NL) • Institute of Ecology of the Carpathians (IEC) • Large Herbivore Foundation (LHF)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 5 **Lower Danube Green Corridor (LDGC)**	
General information	
Information sources/web site	• www.panda.org/what_we_do/where_we_work/black_sea_basin/danube_carpa-thian/our_solutions/freshwater/floodplains/lower_danube_and_danube_delta/ • www.wwf.de/regionen/donau (last access: 10.10.09)
Geographic location and extent of the network	• UKR, RO, BG, MD • Floodplain areas of the River Danube East of the Iron Gate
Strategic and specific objectives of the cooperation initiative	• Implementing of the Lower Danube Green Corridor through coordination and policy work with governments and other authorities • Working with local stakeholders in particular to promote sustainable local development.
Run time	Since 2000
Results	• By early 2008, the protection target has been reached with over 1 million ha of wetlands protected; restoration projects have restored over 50,000 ha
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(b) • Elaborating progressive policies for integrated river basin management (IRBM) • Capacity building with key national authorities and other selected partners in the Lower Danube (c) • Implementation of river restoration measures
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Structural; Rivers and wetlands along the lower Danube river basin
Actors and institutions	
Predecessors of this initiative	Single projects in the area before the signing of the LDGC agreement
Initiators	WWF - Danube-Carpathian Program
Institutional and legal framework	In 2000 the Bulgarian, Romanian, Moldavian and Ukrainian Ministers of Environment signed the Lower Danube Green Corridor Declaration
Funding sources	Mainly NGOs: WWF, DBU, others
Involved organisations or key individual actors	Mainly NGOs
Internal structure such as secretariat, advisory board etc.?	Lower Danube Green Corridor includes many projects by different partners (NGO and national government agencies) under the LDGC Declaration. The WWF - Danube-Carpathian Program has a established the position of a LDGC Coordinator

Profile no.: 6 **Trans-European Wildlife Networks (TEWN)**	
General information	
Information sources/web site	• www.euronatur.org/Europaeische-Wildtiernetzwerke.881.0.html • www.zgf.de/?id=65&projectId=92&language=de • www.polishwolf.org.pl/news,541 (last access: 17.11.2009)
Geographic location and extent of the network	• PL, HR, SK, RO, BG • Project along transport infrastructures in Central and Eastern Europe
Strategic and specific objectives of the cooperation initiative	• Restoring and protecting habitat connectivity in central Europe and the Balkans, especially along roads and highways
Run time	Since 2008
Results	-
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection of killed animals and migration routes (remote sensing) (b) • Workshops and exchange of knowledge (c) • Promotion of animal path ways/Implementation
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Mainly structural; Habitat connectivity. Some focal species are mentioned (wolves, bears, lynx)
Actors and institutions	
Predecessors of this initiative	-
Initiators	-
Institutional and legal framework	-
Funding sources	• NGO: EuroNatur (GE), Frankfurt Zoological Society (GE) • Foundation: Deutsche Bundesstiftung Umwelt (DBU) (GE)
Involved organisations or key individual actors	Coordinator: • EuroNatur (GE) Project partner • Frankfurt Zoological Society (GE) • Institute for Landscape Management of the Albert-Ludwig University (GE) • Association for Bird and Nature Protection “Milvus” (RO), • Association for Nature “Wolf” (PL) • Balkani Wildlife Society (BG) • Biology Department, Veterinary Faculty, University of Zagreb (HR), • Carpathian Wildlife Society (SK) • Mammal Research Institute, Polish Academy of Science (PL)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 7 **Cross-border protection of the Great Bustard**	
General information	
Information sources/web site	• www.grosstrappe.at/index.html • www.dropy.sk/ • www.tuzok.hu/ (last access: 10.10.09) Additional information by Mr. Rainer Raab (Austrian project coordinator)
Geographic location and extent of the network	• AT, HU, SK • Along the Pannonian grassland border area
Strategic and specific objectives of the cooperation initiative	• Protecting the Great Bustard and its habitat along the HU/AT/SK border area
Run time	• INTERREG IIIA: 2002-2006

Results	• INTERREG was successfully implemented
	  • Optimization of 1.200ha of land as bustard habitat
	  • Awareness raising
	• 3 LIFE follow-up projects were created, where the Austrian site coordinated all 3 projects
	  • LIFE Hungary: 2004 - 2008
	  • LIFE Slovakia: 2005 - 2009
	  • LIFE Austria: 2005 - 2010

Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Basic research (GIS inventory), observation (b) • Planning of a Central European migration corridor (c) • Habitat Management (purchasing key nesting and winter locations, site management • Burying, marking and/or isolating power lines • Awareness raising/PR
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Functional; Focal species: Great Bustard
Actors and institutions	
Predecessors of this initiative	-
Initiators	Action Group European Wildlife Reserve Parndorfer Platte - Heideboden"
Institutional and legal framework	• Bern Convention (Annex II) • CITES (Annex 1) • Habitat Directive/Natura 2000
Funding sources	EU: INTERREG III - A (+ LIFE)
Involved organisations or key individual actors	• Burgenland State Government – Department Environment • Burgenland Hunting Association • 6 local municipalities
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 8 **Lafnitz - Habitat cross-linking on an Alpine pannonical river**	
General information	
Information sources/web sites	• http://umwelt.lebensministerium.at/article/articleview/43799/1/8009# • http://ec.europa.eu/environment/life/publications/otherpub/documents/lifenataustria.pdf • http://ec.europa.eu/environment (last access: 10.10.09)
Geographic location and extent of the network	• AT, HU • Lafnitz river basin, starting upstream in the Styrian mountains of Austria and continuing to the lowlands in Hungary
Strategic and specific objectives of the cooperation initiative	• Holistic approach to river management over an entire catchment area • Removing obstacles to the migration of fish over the whole river course, reconnecting the meanders and to regenerate the dried-out alluvial forests, providing spawning grounds for fish and amphibians and foraging areas for birds • Enabling the floodplain area to redevelop its characteristic mosaic of flowing and standing waters, muddy banks, pioneer vegetation and forests.
Run time	2003 – 2007
Results	The project succeeded in restoring habitat types like alluvial forests and rivers with muddy banks with typical vegetation. This has helped preserve many species listed in Annex II of Directive 92/43EEC such as Zingel zingel, Misgurnus fossilis and Gobio kessleri.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(c) • Measures to improve fish migration • Improvement of overall river connectivity • Monitoring programme • Scientific workshop • PR work
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural: Lafnitz river basin; Focal species: fish population (improvement of diversity)
Actors and institutions	
Predecessors or this initiative	There have been various initiatives around the Lafnitz river basin (incl. LEADER), but none of them had cross-border character
Initiators	-
Institutional and legal framework)	• Habitat Directive • Water Framework Directive
Funding sources	EU: LIFE
Involved organisations or key individual actors	Lead partner: • Weideverein Ramsar area Lafnitztal (AT) Other partners: • Burgenland State Government, Department Environment (AT) • Styrian State Government, Department Environment (AT) • Power stations Maierhofer and Neudau (AT) • Municipalities Fürstenfeld and Loipersdorf-Kitzladen (AT) • WWF - HU • BirdLife (HU)

Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 9 **Ecological network and spatial data infrastructure for the Sava River**	
General information	
Information sources/web site	• http://tmp.wdi.wur.nl/UK/thematicareas/Central+and+Eastern+Europe/CEE/ • http://rectivitysrv.rec.org/fmi/xsl/Rerep_projects/browserecord.xsl?-lay=Input&-recid=129&-find=-find • www.ocs.polito.it/biblioteca/ecorete/1195.pdf (last access: 15.10.09)
Geographic location and extent of the network	• SLO, SRB, HR, BiH • Wet grasslands; wetland areas; River floodplains along the Sava river
Strategic and specific objectives of the cooperation initiative	• Supporting the drafting of an ecological network along the Sava • Supporting the establishment of a basin wide GIS of the Sava River
Run time	2005 - 2006

Results	• Project Report on:
	  • Assessment of geographical and ecological information
	  • Assessment and design of a possible ecological network

Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • data base creation on species and habitats (b) • joint selection of priority ecosystems and focal species • workshop analysis of existing land cover/ habitat maps and spatial data • design of ecological network (workshop)
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural: Sava river basin; Focal species**:** Amphibians/ reptiles and birds, e.g. *Hyla arborea*, *Luscinia svecica*; *Botaurus Stellaris*; *Lutra lutra*; *Ciconia nigra*; *Bufo viridis*; *Lycaena dispar*; *Bombina variegata*; *Meles meles*; *Tito alba*.
Actors and institutions	
Predecessors of this initiative	Report is one result of the project “Integrated River Basin Management of the Sava”
Initiators	-
Institutional and legal framework	• Habitats and Birds directives • Ramsar • Natura 2000
Funding sources	National Government: PIN/MATRA Program (NL)
Involved organisations or key individual actors	• Wageningen International (NL) • IUCN • Institute of the Republic of Slovenia for Nature Conservation (SLO) • State Institute for Nature Protection of Croatia (HR) • Ministry of physiscal Planning, Republika Srpska (BiH) • Faculty of Science –University of Sarajevo (BiH) • Agriculture Institute in Banja Luka (BiH) • Institute for Nature Conservation of Serbia (SRB) • Institute for Biological Research of Serbia& Montenegro (SRB/MNE) • Nature Park Lonjsko Polje (BiH)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 10 **Lifeline Drava-Mura 2009-2020**	
General information	
Information sources/web site	www.sterna-albifrons.net/xoops/files/Drava-Vision-2009-2020.pdf (last access: 17.10.09)
Geographic location and extent of the network	• AT, HR, SLO, HU, SRB • River basins of the Lower Drava and Mura Rivers
Strategic and specific objectives of the cooperation initiative	• Establishing of a Trans-Boundary UNESCO Biosphere Reserve "Danube-Drava-Mura" • Halting any further degradation of the river landscape • Improving natural river dynamics • Banning further river regulation and sediment extraction activities • Ensuring a variety of river dynamics, natural habitats and species while also producing greater benefits in natural goods and services for local people.
Time of preparation?	2009- 2020
Results	Handbook, description of Ecological values of Drava and Mura Rivers; Historical state, pressures and impacts on the Drava-Mura rivers; Future perspectives; Action Plan.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a), • Species inventory (b) • Creation of a UNESCO biosphere reserve (c) • River restoration programme
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural: Drava-Mura river basin; Focal species: *Merops apiaster*; *Sterna albifrons*; *Sterna hirundo*; *Actitis hypoleucos*; *Charadrius dubius*; *Ciconia nigra*; *Aythia nyrocia*; *Lutra lutra*; *Myricaria germanica*
Actors and institutions	
Predecessors of this initiative	-
Initiators	WWF-AT; EuroNatur, others
Institutional and legal framework	EU Water Framework Directive; Flood Directive; Habitats and Birds Directives; Ramsar; Bern Convention; Bonn Convention.
Funding sources	NGO: WWF, EuroNatur
Involved organisations or key individual actors	• EuroNatur (GE) • WWF-AT • DOPPS-Birdlife (SLO) • Croatian Society for the Protection of Birds and Nature (HR) • Green Osijek (HR) • ZEO Nobilis (HR) • Drava League • Drava Federation
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 11 **Protection of Biodiversity of the Sava River Basin Floodplains**	
General information	
Information sources/web site	www.savariver.com (last access: 21.07.09)
Geographic location and extent of the network	• BIH, HR, SRB, SLO • Alluvial floodplain wetland of the river Sava
Strategic and specific objectives of the cooperation initiative	• Supporting transboundary co-operation and agreement between the Sava countries to designate and manage an ecological network of protected areas, buffer zones and corridors for habitat types and species of European importance • Supporting rural development through stimulating sustainable land use practises and rural tourism.
Run time	2007 - 2009
Results	• Press releases sent on regular basis to local, regional and national media • Poster production and dissemination to schools, public institutions, kindergartens. • Workshops
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Inventory of biodiversity along the Sava based on the Natura 2000 and the existing system of protected areas (b) • Analysis of threats and definition of existing conservation status of Natura 2000 habitats and species along the Sava • Proposal for and evaluation of an ecological network of sites along the Sava • Identifying pilot sites with the need for small scale pilot restoration and prepared project plans • Action plan and recommendations for establishing and maintaining the proposed ecological network and for securing FCS for Natura 2000 habitat types and species • Training and workshops for stakeholders on the action plan and Natura 2000
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Structural; Sava river basin
Actors and institutions	
Predecessors of this initiative	-
Initiators	-
Institutional and legal framework	• Birds and Habitat Directives • PEBLDS
Funding sources	• EU: LIFE • National government: Swiss Agency for Development and Cooperation
Involved organisations or key individual actors	Project management: IUCN and Wageningen International (NL) Other partners: • Centre for Ecology and Natural Resources of the Faculty of Science in Sarajevo (BiH) • Orbicon Consultants (DK)

	• Agricultural Institute of Republic of Srpska (BiH) • State Institute for Nature Protection of Croatia (HR) • Institute for Nature Conservation of Serbia (SRB) • Institute for Nature Conservation of the Republic of Slovenia (SLO)
Internal structure such as secretariat, advisory board etc.?	

Profile no.: 12 **Alpine-Carpathian-Corridor**	
General information	
Information sources/web site	www.wwf.at/de/akk/ (last access: 10.10.2009)
Geographic location and extent of the network	• AT, SK, HU, CZ • Eastern runner of the Alps, range of Rosaliengebirge across the Leithagebirge, Maria Ellender Wald, floodplains of the Danube and Marchauen across the western Slovakian lowland to the Small Carpathian
Strategic and specific objectives of the cooperation initiative	• Proving that all possible barriers in the corridor area can be addressed within a comprehensive implementation project • Proving that connectivity can be permanently secured • Identification of sectors in terms of feasible activities • Testing of implementation tools. • Approaching authorities to identify specific instruments
Run time	2007

Results	Feasibility study is published:
	• Strohmaier, B; Egger, G.; Janak, M. (2007): Feasibility Study for a transnational Alpine-Carpathian-Corridor Project, WWF Wien
	Preparation of a follow-up project (2009 - 2012)
	• Aims:
	  • To make the Alpine-Carpathian-Corridor continuous for wildlife and hence, re-establish a ecologically functional landscape
	  • The connection of both ranges through the corridor contributes to the long-term preservation of species with large-scale spatial requirements
	• Lead Partner:
	  • Research Institute for Wildlife and Ecology - Veterinary University Vienna (AT)

Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(b) • planning and conceptual work as aim of the feasibility study, including: Literature review on existing studies focusing on ecological corridors, proposed wildlife passages in the area and expert consultation
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural: Habitat connectivity. Focal species: Wolf, Brown bear, Red deer, Lynx
Actors and institutions	
Predecessors or this initiative	Building on existing region concepts, e.g.: Joint Regional Development Strategy, Centrope
Initiators	WWF-AT, Daphne - Institute of Applied Ecology (SK)
Institutional and legal framework	• Natura 2000 • PEEN • Memorandum of Understanding for the cooperation between the Alpine Convention and the Carpathian Convention
Funding sources	NGO: WWF-AT
Involved organisations or key individual actors	• WWF Austria • Distelverein (AT)

	• Stadtland (AT) • Daphne - Institute of Applied Ecology (SK) • Sprava CHKO Zahorie (SK) • Carpathian Wildlife Society • SPECTRA Centre (Slovak Technical University) (SK) • Institute of Wildlife Biology and Game Management (University of Natural Resources and Applied Life Sciences) (AT) • Institute of Surveying, Remote Sensing and Land Information (University of Natural Resources and Applied Life Science) (AT) • University of Applied Sciences Wiener Neustadt for Business and Engineering Ltd., Austria (AT)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 13 **'Ecological transboundary network' (in the Alps)**	
General information	
Information sources/web site	www.alparc.org/resources/our-publications/dossiers/study-ecological-transboundary-network-alpensignal-3 (last access: 17.11.2009)
Geographic location and extent of the network	• Alps as defined under the Alpine Convention: AT, GE, IT, SLO, CH, LI, FR, MC
Strategic and specific objectives of the cooperation initiative	• Presenting possible territorial connections as well as political, national and regional development measures. Recommending strategies • Framework for the creation and implementation of an alpine ecological territorial network
Run time	2004

Results	• Publication:
	  • "Grenzübergreifender ökologischer Verbund" (Netzwerk Alpiner Schutzgebiete 2004)
	• Practical implementation:
	  • Ecological Continuum Project (see profile no. 14)
	  • ECONNECT (see profile no.15)

Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Inventory of protected areas in the Alps (transnational and national) (b) • Connectivity and gap analysis • Recommendations and strategy building
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Mainly structural; Habitat connectivity in the Alpine mountain range
Actors and institutions	
Predecessors or this initiative	-
Initiators	• ALPARC - Alpine Network of Protected Areas • Permanent Secretary of the Alpine Convention
Institutional and legal framework	Alpine Convention
Funding sources	NGO: • ALPARC - Alpine Network of Protected Areas • Permanent Secretary of the Alpine Convention
Involved organisations or key individual actors	• ALPARC - Alpine Network of Protected Areas • Permanent Secretary of the Alpine Convention
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 14 **Ecological Continuum Project**	
General information	
Information source/web site	www.alpine-ecological-network.org/index.php/the-ecological-continuum-project (last access: 08.10.09)

Geographic location and extent of the network	• Alps as defined under the Alpine Convention:
	AT, GE, IT, SLO, CH, LI, FR, MC
	• 4 pilot regions:
	  • The transboundary area Berchtesgaden-Salzburg
	  • The French Département Isère
	  • The Northern limestone Alps region
	  • The Rhaethian Triangel (Engadin/Southtyrol/Trentino/Tyrol)

Strategic and specific objectives of the cooperation initiative	• Laying the foundations for the long-term implementation of a coherent ecological network in the Alps
Run time	Since 2007
Results	• A joint alpine set of methodologies for connecting important areas and a catalogue of possible measures to enhance connectivity have been developed • Four pilot regions were chosen across the Alpine arc to carry out first concrete implementation actions.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(b) • Planning work through compilation of information to establish ecological networks in the Alps (incl. evaluation of existing approaches in the Alps, identification of pilot regions; development of a catalogue of measures) (c) • First concrete implementation actions. Activities will include zoning measures, protected area enlargement based on the needs of ecological systems, creation of ecological corridors and sustainable use agreements with farmers, foresters, hunters or tourism operators. • Informing decision makers at the local, regional, national and international level on the importance of the ecological continuum.
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural connectivity in the Alpine region; Reference to target species in some pilot projects(i.e. brown bear)
Actors and institutions	
Predecessors or this initiative	Pre-Study by ALPARC in 2004 (see profile no. 13)
Initiators	• CIPRA - “Commission Internationale pour la Protection des Alpes • ALPARC - Alpine Network of Protected Areas • WWF – Alpine Programme • ISCAR - International Scientific Committee on Research in the Alps
Institutional and legal framework	Article 12, Alpine Convention
Funding sources	Fundation: MAVA - Stiftung für Natur (CH)
Involved organisations or key individual actors	ALPARC, CIPRA, ISCAR and WWF
Internal structure such as secretariat, advisory board etc.?	Close interlinks with the ECCONET projects (profile no. 15)

Profile no.: 15 **ECONNECT "Restoring the Web of Life"**	
General information	
Information sources/web site	www.econnectproject.eu/index.htm (last access: 08.10.2009)

Geographic location and extent of the network	• Alps as defined under the Alpine Convention:
	AT, GE, IT, SLO, CH, LI, FR, MC
	• 7 pilot regions:
	  • The transboundary area Berchtesgaden – Salzburg
	  • The French Département Isère
	  • The Northern limestone Alps region
	  • The Rhaethian Triangel (Engadin/Southtyrol/Trentino/Tyrol)
	  • The Hohen Tauern region
	  • The south-east Alps - Mercantour/Alpi Marittime
	  • The Monte Rosa region

Strategic and specific objectives of the cooperation initiative	• Enhancing ecological connectivity in the Alpine space
Run time	2008 - 2011
Results	-
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Harmonising geographical data (b) • Analysing existing physical and legal barriers with a common terminology and methodology • Identifying obstacles to ecological connectivity (c) • Carrying out the first actions to improve or create ecological connectivity and implementing effective strategies for multi-stakeholder community involvement.
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Structural connectivity in the Alpine region; Reference to target species in some pilot projects(i.e. brown bear)
Actors and institutions	
Predecessors or this initiative	Ecological Continuum Project (see profile no. 14)
Initiators	CIPRA International
Institutional and legal framework	Alpine Convention (Art. 12 Nature Conservation Protocol)
Funding sources	EU: Alpine Space - European Territorial Cooperation (Objective 3 of the Regional Policy 2007-2013) (INTERREG IV)
Involved organisations or key individual actors	Lead Partner: • University of Veterinary Medicine Vienna (Research Institute of Wildlife Ecology) (AT) Partners: • Hohe Tauern National Park (AT) • Federal Environment Agency (AT) • Gesäuse National Park (AT) • University of Innsbruck (Institute for Ecology) (AT) • Berchtesgaden National Park (GE) • CEMAGREF (FR)

	• Council of Department of Isère (FR) • Task Force Protected Areas (Permanent Secretariat of the Alpine Convention) (FR) • Alpi Marittime Nature Park (IT) • Autonomous Region of Valle d'Aosta (IT) • European Academy of Bozen (IT) • Ministry for the Environment (IT) • WWF Italy (IT) • International Commission for the Protection of the Alps (CIPRA) (LI) • Swiss National Park (CH) • Observers: • Federal Agency for Nature Conservation (BfN) (GE) • Logarska Dolina Nature Park (SLO) • Biosfera Val Müstair (CH) • International Scientific Committee for Alpine Research (ISCAR) (CH)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 16 **Bat conservation in the Alpine and Adriatic region**	
General information	
Information sources/web site	www.fledermausschutz.at/INTERREG/index.htm (last access: 10.10.09)
Geographic location and extent of the network	• AT, IT, SLO • Eastern Alpine mountains
Strategic and specific objectives of the cooperation initiative	• conservation of roosts and foraging habitats of endangered bat species
Run time	2003-2006
Results	• Research of roost utilisation and habitat preferences as basic knowledge for long-term conservation strategies (incl. Master thesis on bat populations) • Establishment of new monitoring methods
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a), • Data gathering on bat populations (b) • preparation and realisation of a standardised monitoring program for bat populations (c) • Construction of nesting places (AT, IT, SLO) • PR work
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Functional; Focal species: Bats
Actors and institutions	
Predecessors or this initiative	Predecessor project between 1999 und 2002
Initiators	-
Institutional and legal framework	Habitat Directive
Funding sources	EU: INTERREG III - A
Involved organisations or key individual actors	Project leader: • Work Group NATURSCHUTZ, Klagenfurt (AT) Project partners: • Centre for Cartography of Fauna and Flora (SLO) • Slovenian Association for Bat Research and Conservation (SLO) • Slovenian Museum of Natural history – Vertebrate Department (SLO) • State Museum of Carinthia (AT) • Alpine Zoo Innsbruck (AT) • University of Salzburg, AG Ecology and diversity of animals (AT) • Museum for Natural Science South Tyrol (IT) • Natural Parc Prealpi Giulie, Resia (Udine) Italia (IT) • Natural reserve Orientata (IT) • Museum of Natural Science Onferno (IT)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 17 **Principles for the Establishment of an Alpine brown bear population**	
General information	
Information sources/web site	http://ec.europa.eu/environment/life/ www.lcie.org/Docs/ (last access: 10.10.09)
Geographic location and extent of the network	• AT, IT, SLO • (Eastern) Alps
Strategic and specific objectives of the cooperation initiative	• Developing and implementing a dynamic model to assess the presence of areas suitable for bears and to stimulate future dynamics of occupation of the same areas.
Run time	2004 - 2005
Results	• The project succeeded in developing an ad hoc dynamic model of the current and potential distribution of brown bears in the eastern Alps and surrounding areas. • The map of potential distribution produced shows that suitable areas in which the species could be present are widely extended. • The analysis also indicates that a future brown bear meta population in southern Europe is a distinct possibility, but that brown bear conservation in southern Europe must be considered in a supranational context.
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection/Modelling • Mapping potential distribution area (b) • Cooperation between a governmental body, a protected area, a university research institute and an NGO • Public relations
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Functional; Focal species: Brown bear
Actors and institutions	
Predecessors of this initiative	-
Initiators	WWF - AT
Institutional and legal framework	• Habitat Directive • Bern-Convention
Funding sources	EU: LIFE
Involved organisations or key individual actors	Co-ordinator: • Natural Park Adamello Brenta (IT) Project Partner: • Slovenian Forestal Services, Slovenia (SLO) • WWF Austria (AT) • University of Udine, Italy (IT)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 18 **Protection of Amphibians in the Alpine-Adriatic space**	
General information	
Information sources/web site	www.amphibienschutz.at/de_startseite/index.html (last access: 10.10.09)
Geographic location and extent of the network	• AT, SLO, IT • Alpine-Adriatic region
Strategic and specific objectives of the cooperation initiative	• Improving the migration networks and habitat structures of amphibians, by securing connectivity of habitats by protective measures along roads
Run time	• INTERREG III – A: AT/SLO: 2002 – 2007 • INTERREG III – A: AT/IT: 2003 – 2007
Results	• Monitoring programme • Mapping migrations path-ways/highlighting gaps in the network • Prioritisation of protection measures • trilingual brochure on “conservation of amphibians”
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection on target species and migration routes. (b) • Professional exchange of information; common support in planning and implementation of conservation projects • Evaluation of measures (c) • Sharing knowledge/PR (in particular trilingual brochure on “conservation of amphibians” • Pilot initiatives to improve connectivity and habitat creation
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Functional; Focal species: Amphibians
Actors and institutions	
Predecessors of this initiative	-
Initiators	Work group “Naturschutz” (AT)
Institutional and legal framework	Habitat Directive
Funding sources	EU: INTERREG III - A
Involved organisations or key individual actors	Austrian partners: • State Museum of Carinthia (AT) • Museum for Natural Science Wien (AT) • State Museum Upper Austria (AT) • Teaching Centre Kloster Stift (AT) • Centre for Cartography of Fauna and Flora (SLO) • Region of Friuli, Venezia, Giulia (IT) • Museo Friulano di Storia Naturale/Udine (IT) • Museum for Natural Science Trieste (IT) • National Park Prealpi Giulie (IT)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 19 **Project Living Space Network**	
General information	
Information sources/web site	www.alpinespace.org/livingspacenetwork.html?&L=19565 (last access: 17.11.2009)
Geographic location and extent of the network	• AT, GE, IT, CH • Alpine region

Strategic and specific objectives of the cooperation initiative	• Safeguarding and developing sufficiently large habitats in a cross-border alliance is imperative if the biological diversity of the Alps' ecological system. In addition to this, quite apart from the preservation of the genetic resources in the Alpine region, "diversity of species and habitats" is a factor contributing to the quality of attractions for tourists.
	• Two pilot projects:
	  • "Cross-frontier running waters in the Alps"
	  • "Protection of cross-frontier populations of bats in the Alps"

Run time	2003 - 2005

Results	• Establishment of new forms of cross-border collaboration at administrative level and between scientific institutions, associations and private individuals through the pilot projects.
	• Living Space Network Results "Running waters":
	  • Project Handbook on management of cross frontier running waters: the example of the Lech river
	• Living Space Network Results "Bats protection":
	  • Project Handbook for a coordinated management and protection of bats in the Alpine Space

Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Identification and planning of specific measures and follow-up projects (flood area management, enhanced connectivity for fishes and amphibians along the Lech) • Collection of »guidelines for construction done in bats' roosts" in the Alpine space«. (b) • Establishment of landscape management plans (Lech region) • Methodology test for a bat habitat monitoring programme (c) • Lechfloß (timber float) project & poster • Concept for protecting the gravel nesting birds on the Lech, with information campaign - boards and posters • Pilot project »Bats« different strategies for preserving their hunting grounds and their breeding places • communicating results to interested circles (from the entire Alpine region and from countries acceding to the EU)
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. • Structural: Lech river basin • Functional; Focal species: Bats
Actors and institutions	
Predecessors or this initiative	• Bavarian project: „Lebensraum Lechtal" • LIFE project: "Wildflusslandschaft Tiroler Lech"
Initiators	Alps Adriatic Working Group (ARGE Alpen-Adria)
Institutional and legal framework	• Habitat and Birds Directive, Natura 2004

	• The European Spatial Development Perspectives (ESDP) • Alpine Convention (Nature Conservation Protocol Art. 11 and 12).
Funding sources	EU: INTERREG III – B (Alpine Space)
Involved organisations or key individual actors	Lead Partner: • Bavarian Ministry for Spatial Development and Environment (GE) EU Project Partners • State Government of Salzburg (AT) • State Government of Tyrol (AT) • State Government of Vorarlberg (AT) • Region of Bolzano – South Tyrol (IT) • Ministry of Natural Parks (IT) • Region of Trento (IT) Non-EU Project Partners • Canton Grisons (CH) • Canton St. Gallen (CH) • Canton Ticino (CH) Project coordinator • CIPRA - “Commission Internationale pour la Protection des Alpes
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 20 **Wet lands and stork habitats between Alpenrhein and Donau**	
General information	
Information sources/web site	www.feuchtwiesen-stoerche-bodensee.de (last access: 10.10.2009)
Geographic location and extent of the network	• AT, GE, CH, LI • Greater area around the Lake of Constance, Upper Rhine valley to Liechtenstein
Strategic and specific objectives of the cooperation initiative	• Creating and improving habitats for storks and other bird species, as well as endangered flora
Run time	2005 - 2008
Results	Implementation of 17 regional projects
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(c) Habitat management • Change in land-uses, restoration of flood plains and wet lands • Awareness raising for stork habitats/PR • Cooperation between different actors from different national contexts.
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Both. Focal species (stork); Structural connectivity of wet land systems
Actors and institutions	
Predecessors of this initiative	-
Initiators	Deutsche Umwelthilfe (DUH)
Institutional and legal framework	-
Funding sources	EU: INTERREG III - A
Involved organisations or key individual actors	Project coordinator: • District Bodenseekreis (GE) Project partner: • For each of the 17 projects various regional institutions (NGOs and Government agencies) were involved
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 21 **Regional Ecological Network Mapping in Visegrád 4+2**	
General information	
Information sources/web site	• www.cro-nen.hr/content.php?id=54 • www.eeconet.org/eeconet/peen/factsheet8.pdf (last access: 15.07.09)
Geographic location and extent of the network	CZ, HU, SK, PL + UKR, HR
Strategic and specific objectives of the cooperation initiative	• Developing a regional ecological network map indicating the potential location of the PEEN through the compilation of their national network maps
Run time	2001 - 2003
Results	Two thematic maps: • Protected areas in "Visegrád 4+2" countries • Regional ecological network map "Visegrád 4+2"
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Development of a data base and a GIS map • Data collection (b) • Planning and conceptual work (e.g. identification of core areas and search areas for corridors)
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Structural; Habitat connectivity and identification of gaps
Actors and institutions	
Predecessors of this initiative	-
Initiators	Agreement of the environment ministers of the Visegrád countries in 2001 to develop a regional ecological network map indicating the potential location of PEEN. Later Croatia and Ukraine joined to the project.
Institutional and legal framework	PEEN
Funding sources	National Government: Ministry of Environment (HU)
Involved organisations or key individual actors (including their roles)	• Ministry of Environment (HU) • Ministry of Environmental Protection and Physical Planning (HR) • Oikon – Institute for Applied Ecology (HR) Scientific advisor: • ECNC
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 22 **Indicative Map of the Pan-European Ecological Network for Central and Eastern Europe**	
General information	
Information sources/web site	• www.eea.europa.eu/data-and-maps/figures/indicative-map-of-the-pan-european-ecological-network-for-central-and-eastern-europe • http://www.cipra.org/de/alpmedia/publikationen/3076 (last access 17.11.2009)
Geographic location and extent of the network	CZ, HU, PL, SK, UKR, RO, (+MD, BY, RUS, LV, LT, EST)

Strategic and specific objectives of the cooperation initiative	• The main objective of the project was to produce an indicative ecological network map for Central and Eastern Europe
	• Scientific goals were:
	  • developing a common approach to defining the PEEN using the available data
	  • facilitating discussions on the location of the elements of the net work

Run time	2000 – 2002
Results	Publication: • "The Indicative map of the Pan-European Ecological Network for Central and Eastern Europe" (Bouwma et al. 2002a)
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection on distribution information, trends on species, ecosystems and landscapes of Pan-European importance; knowledge regarding requirements of species; connectivity needs of species (b) • Development of the maps
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Mainly structural; Focus on habitat connectivity. Some focal species are mentioned (large birds and mammals)
Actors and institutions	
Predecessors of this initiative	-
Initiators	ECNC
Institutional and legal framework	PEEN
Funding sources	National Government: • Dutch Ministry of Foreign Affairs (MATRA Fund – Programme International Nature Management) (NL) • Dutch DWK fund (NL) • Swiss Agency for Environment, Forests and Landscape (CH) • Ministry of the Walloon region (B) • Council of Europe
Involved organisations or key individual actors	Project Coordination: • ECNC
Internal structure such as secretariat, advisory board etc.?	Consultation process with policy makers, research institutions and nature conservation organizations involved in the establishment of the PEEN

Profile no.: 23 **Indicative Map of the Pan-European Ecological Network in South-Eastern Europe**	
General information	
Information sources/web site	• www.ecnc.org/file_handler/documents/original/view/69/indicative-map-peen-seepdf.pdf • www.ecnc.org/file_handler/documents/original/view/70/reverse-indicative-map-peen-seepdf.pdf?PHPSESSID=0ff2dd9a5b23be4427c108bf7c5f8d06 (last access: 10.10.09)
Geographic location and extent of the network	BiH, HR, SRB, MNE, SLO (+ AL, BG, CYR, GR, FYR MK, TR)
Strategic and specific objectives of the cooperation initiative	• Linking the different international and national protected areas and ecological networks with the goal to secure the favourable conservation status of Europe's key ecosystems, habitats, species and landscapes • Indicating possibilities to reinforce the safe and long-term existence and possible return of internationally important species following the strategy of a coherent and robust network • Identifying the core nature areas of European importance, existing corridors between these areas, and where new corridors could and should be established to meet the connectivity requirements of key species
Run time	2003 - 2006
Results	The map was officially presented during a meeting of the Committee of Experts for the establishment of PEEN (October 2006) and during the 'Environment for Europe' Ministerial Conference in Belgrade (2007).
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	(a) • Data collection on distribution information, trends on species, ecosystems and landscapes of Pan-European importance; knowledge regarding requirements of species; connectivity needs of species (b) • Development of maps
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	• Mainly structural; Focus on habitat connectivity. Some focal species are mentioned
Actors and institutions	
Predecessors of this initiative	-
Initiators	-
Institutional and legal framework	• Bern Convention • Convention on Biological Diversity (CBD) • Natura 2000
Funding sources	• Foreign Affairs (BBI-MATRA fund) (NL) • Council of Europe • Swiss Federal Office of the Environment (CH)
Involved organisations or key individual actors	Coordination: • ECNC–European Centre for Nature Conservation • Wageningen International (NL) • Ministry of Environment - Nature Resources Management and Biodiversity (AL) • Agricultural Institute - Department for Agrochemistry and Agroecology, Banja Luka (BiH) • Wilderness Fund, Sofia (BG)

	• Department of Botany, Division of Biology, Faculty of Science, University of Zagreb (HR) • Greek Biotope/Wetland Centre - The Goulandris Natural History Museum, Thessaloniki (GR) • Agency of Environment - Ministry of Environment and Physical Planning (MK) • Centre for Cartography of Fauna and Flora (SLO) • Natural History Museum, Belgrade (SRB)
Internal structure such as secretariat, advisory board etc.?	-

Profile no.: 24 **Indicative Map of the Pan-European Ecological Network in Western Europe**	
General information	
Information sources/web site	http://www.onderzoekinformatie.nl/en/oi/nod/onderzoek/OND1311463/ (last access: 17.11.2009)
Geographic location and extent of the network	AT, FR, GE, IT, CH, LI (+the rest of Western Europe)
Strategic and specific objectives of the cooperation initiative	• producing an easily readable indicative map according to a consistent and transparent methodology • showing the indicative location of core areas in several different habitat types and corridors along forested areas and along rivers (p. 34)
Run time	2005 - 2006
Results	Publication: • "Indicative map of the Pan-European Ecological Network in Western Europe" (Jongman et al. 2006)
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc (b) planning, conceptual work (c) practical implementation	(a) • Data collection (e.g. for identification of core areas) (b) • Planning and conceptual work (e.g. identification of core areas and search areas for corridors)
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	Mainly structural; Focus on habitat connectivity. Some focal species are mentioned
Actors and institutions	
Predecessors or this initiative	Existence of two earlier indicative maps of the PEEN (see profiles no.22 and 23)
Initiators	Dutch Ministry of Agriculture, Nature management and Food Quality and its representatives in the Committee of Experts of PEEN
Institutional and legal framework	PEEN
Funding sources	National Government: Dutch Ministry of Agriculture
Involved organisations or key individual actors	• Wageningen International (NL) • ECNC
Internal structure such as secretariat, advisory board etc.?	Under the auspice of the Committee of Experts for the development of the PEEN

Annex 4: Fertö Neusiedler See as an example of transboundary cooperation

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General information	
Information sources/web site	http://www.nationalpark-neusiedlersee-seewinkel.at/index.html http://www.ferto-hansag.hu/ http://www.burgenland.at/natur-umwelt/naturschutz/nationalpark
Geographic location and extent of the network	• AT, HU • Water body of the Lake Fertő-Neusiedler See with its extensive reed belt, east of the lake the so called "Seewinkel" with its specific salty lakes and habitats and in the southeast the Hanság with wetland meadows and forests (partly Alder swamp forests).
Strategic and specific objectives of the cooperation initiative	• Protection of the natural heritage within a common national park • Developing a national park region as part of the regional development (Region Neusiedler See-Seewinkel) • Enhancing eco and soft tourism (cycling, bird watching, guided tours, day trips etc.)
Run time	• Since 1992 (Burgenland), on April 24th 1994 the cross-border national park was officially opened by Hungary and Austria
Results	• Implementation of nature areas (lake and reed belt) and conservation zones (cultural landscape) • Recognition of the national park as a category II park by IUCN (1993) • On November 12th 2009 the Fertő-Neusiedler See region has been declared as a bilateral Ramsar site ("Neusiedler See-Seewinkel-Waasen")
Technical characteristics of the network	
Character or phase of the cooperation initiative: (a) data collection, species inventory etc. (b) planning, conceptual work (c) practical implementation	• Research and monitoring are carried out by the Biological Station of the Burgenland, which is part of the conservation department of the regional government. • Planning and practical measures are done by the National Park Society; it is a public corporation financed by state and federal governments (Article 15 a B.-VG. agreement). • In Hungary the Fertő-Hanság National Park Directorate in Sarród (Great Egret Cottage - Kócsagvár) is responsible for research and the administration of the national park. It manages also all protected areas of national importance in the county of Győr-Moson-Sopron (e. g. Pannonhalma and Szigetköz Landscape Protection Areas).
Type of proposed ecological network – focus on structural or functional connectivity (or both)?	It is so far a more structural connectivity focussing on protected areas; functional aspects like restoration ecology or species protection are tasks of the national administration units of both parks.
Actors and institutions	
Predecessors or this initiative	Attempts for establishing a national park have a long history (see websites above) with a beginning in the fifties of the 20th century.
Initiators	WWF Austria, Österreichischer Naturschutzbund
Institutional and legal framework	The National Parks Act was decided unanimously by the Burgenland government in November 1992 An amendment of the Act is only possible with

	2/3-majority. It forms the legal basis of all relevant activities and decisions.
Funding sources	State and federal governments
Involved organisations or key individual actors	• National Park Society Neusiedler See in Austria • Fertő-Hanság National Park Directorate in Hungary
Internal structure such as secretariat, advisory board etc.?	• Several administration units and an Information center in Illmitz (Austria) • National Park administration in Kócsagvár and Csapody István Nature School and Visitor Center in Fertőújlak (Hungary)

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