



Progress report on the establishment of the National Ecological Network in Hungary

NATIONAL ECOLOGICAL NETWORK No.2





Foreword

In November 1993, the Congress Palace of Maastricht, the Netherlands (the time and venue of the event seem to be very purposefully chosen) saw the birth of the European Ecological Network (ECONET): prepared by the state nature conservation body of the Netherlands (and, at an honouring invitation, Hungary). This new programme was discussed and endorsed by the leading officials of 43 European countries and numerous technical, social and economic global organisations, as well as internationally renowned conservation experts. It was a long-matured but revolutionary idea to announce the plan of a transboundary ecological network that knows no political frontiers in the spirit of the Maastricht monetary union of a 'New Europe'. The project later roused many debates but eventually fulfilled the hopes of its creators: after a number of modifications, practically all European countries undertook to implement it. The debates occurred between government bodies and supportive NGOs concerned about and ready to act for nature, and on the other side the great economic lobbies, primarily on the elements and total area of the network as well as the possibilities of further extension. Naturally, those who are – more and more rightly – concerned about the last refuge areas of Europe that still preserve near-natural conditions aim to warrant significantly more efficient protection to areas as large as possible. The scientific and professional objective is that protected and non-protected areas should not be distinguished within the network, i.e. habitats should be assessed for inclusion on the basis of their true conservation value (thus the network should consist of a combination of protected and non-protected elements), whereas advocates of unrestricted industrial and agricultural development aim to banish ecological restrictions entirely from their future prospects and can tolerate nature conservation exclusively in areas protected by law. At the same time, they try to obstruct designations in all possible ways, employing a whole arsenal of refined influence. This grave conceptual debate complicates and to a degree slows down the implementation of the

network varying country by country, although concurrently it has become professionally well-founded and methodologically mature. The legislative background has been formulated in Hungary as well as in the other European countries, compelling governments to implement the network. The necessary technical conditions have also been created in Hungary: edited by the Authority for Nature Conservation, Ministry of Environment, a series of thematic maps has been produced and is still continued, built on a vast database and several years of work. It is ready for being discussed with other ministries, and deserves endorsement. It will be decided in the near future for all of us whether nature conservation can contribute further support to Hungary's accession to the European Union by establishing the Hungarian National Ecological Network.

The Pan-European Ecological Network is a system of national ecological networks. The European Centre for Nature Conservation considers it a top priority to harmonise the national networks of Central and Eastern



Photo 1: Tumuli, such as this one, preserve remnants of the natural vegetation



Photo 2: Riparian zone of Danube

European countries and, as a first step, prepared a 'tentative network' of the region at the 1:5,000,000 scale. Hungary has undertaken to co-ordinate the national ecological networks of the 'Visegrád countries' (Czech Republic, Poland, Slovakia and Hungary), Croatia and the Ukraine. The seemingly simple task of editing is in fact extraordinarily complex, with many questions still awaiting solution, from the standardisation or at least harmonised interpretation of nomenclature, through the projection, scale as well as content of the maps, to the methodology and descriptive techniques. Nevertheless, our most important task today is the establishment of our own ecological network.

The programme also prioritises the issue of transboundary protected areas. The Hungarian state nature conservation has also given this concept top priority since the early 90s. It does not require too much explanation or any particular geographical or ecological training to recognise that both sides of the Dráva River provide similar ecological conditions. The Aggtelek Karst used to be called Gömör-Tornai Karst just like the Slovak Karst on the other side of the border, since it is a single geological,

hydrological and ecological unit. Moreover, it would be very unwise if the conservation management of the various parts of the Upper Tisza region varied depending on to which state history has rendered them, since life along the Tisza River depends much more on the condition and proper functioning of natural factors than on the political status. Obviously, the situation is similar around Lake Fertő as well as along the two sides of Ipoly River. The only difference lies in the fact that in some places these inescapable, natural relations have been recognised and accepted, while in others there is uncertainty about this type of co-operation. We are convinced that nature conservation has a permanent obligation (and opportunity) to support diplomatic efforts between countries but must avoid the pitfall of getting entangled with daily political issues. It has been recognised across Europe and the whole world that nature conservation, being respected in every civilised country, can give active support to diplomacy in relieving the tension between neighbouring countries in critical periods. This obvious opportunity is worth exploiting, and especially in the biogeographically and geopolitically complex Carpathian Basin there is an abundance of possibilities. Since 1990, our transboundary or near-boundary co-operations have been well-founded and promising, and include the following countries: Austria (Fertő-Hanság National Park – Neusiedler See-Seewinckel National Park; Kőszegi Nature Park), Slovenia (Órség–Raab–Goričko Nature Park; River Mura Landscape Protection Area), Croatia (protected areas along the River Dráva; Béda-Karapanca – Kopácski meadow), Serbia (Körös-éri Forest LPA), Romania (protected areas along the river Maros; Biharugra fish ponds – Cséffa fish ponds), Slovakia (Zemplén LPA; Aggtelek Karst – Slovak Karst, Ipoly River, etc.) and quadrilaterally with Romania, the Ukraine and Slovakia (Upper Tisza region). It is with this transboundary spirit of nature conservation that I bring this brochure to the Reader's attention.

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Hungary and the developing European ecological network

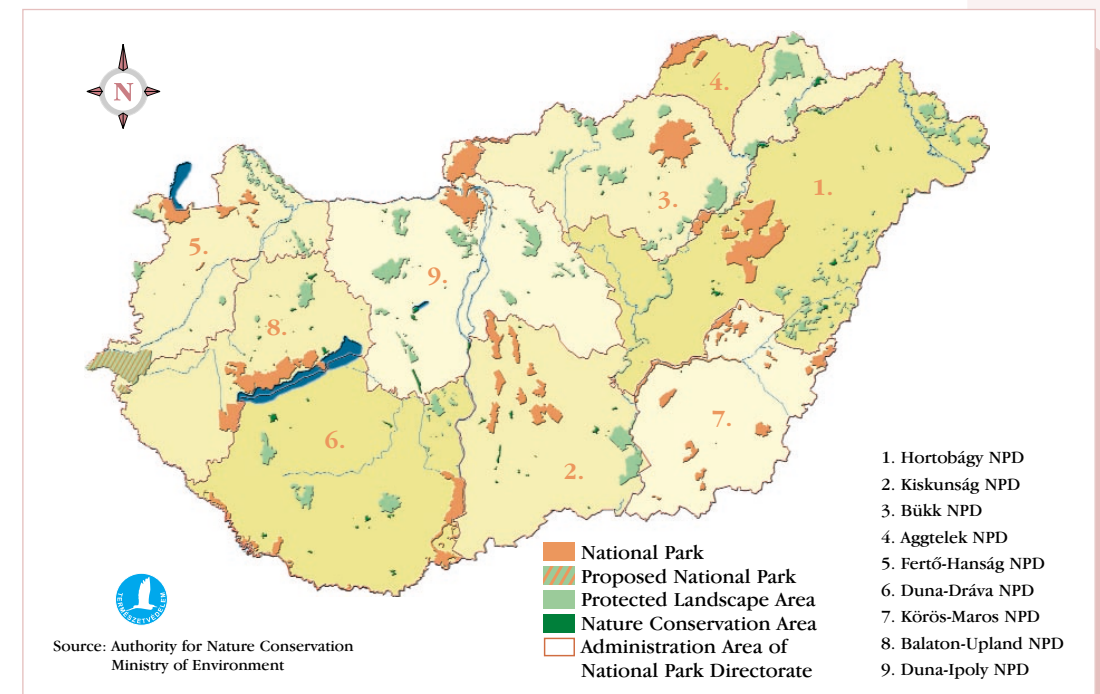
The wealth of natural assets in Hungary is expressed in a line of a poem: 'Famous Pannonia used to be a garden of flowers'. Though the state of nature has slightly changed, the Carpathian Basin is still an area with numerous habitat types, which are home to a surprisingly high number of native species. Beside species diversity, a diversity of geological, geomorphological and other values is also typical for this area.

The richness of living organisms can be explained by the biogeographical state of the Carpathian Basin and that different floral and faunal regions converge here. According to our current knowledge, nearly 800 species of moss, 2800 species of vascular plants, and 42,000 animal species can be found in Hungary. An estimated 20–25% of the species are considered to be threatened. Obviously, all species cannot be protected, hence when protected species lists

are compiled, special attention is primarily paid to endemic species (Carpathian and Carpathian basin endemisms), relict species, and moreover, those species whose world population or part of it is hosted by Hungary.

During the 1990s, not only political transition took place in Hungary but also nature conservation was completely transformed, similar to the changes at the international level. The most remarkable step in this process was the drafting and approval of a modern act (Act No. LIII. of 1996 on Nature Conservation) based on conservation of biological diversity. This act focuses not only on protected areas but also provides a framework to conserve unprotected areas as well as the landscape. To implement this act, government and ministerial decrees have also been issued, and as many as five new national parks have been established. In total, there are nine national parks in Hungary and two more are planned to be designated. The extent of protected areas has reached nearly 10% of the country with the ex lege protected areas.

The number of protected species has increased considerably. The conservation of



Protected areas of Hungary

Protected sites of Hungary

Categories of protection	Number		Total area (ha)		Strictly protected (ha)	
	1990	2001	1990	2001	1990	2001
National Parks ¹	4	9	146,596	440,839	25,331	76,717
Landscape Protection Areas	44	38	413,442	349,242	57,691	31,544
Nature Conservation Areas	138	142	35,006	25,927	781	1,317
Nature Monuments	0	1	0	0	0	0
Total: nationally protected areas	186	190	595,044	816,008	83,803	109,578
Ex lege protected mires	-	-	-	44,359	-	-
Ex lege protected sodic lakes	-	-	-	20,160	-	-
Locally protected areas	880	1225	34720	36,700	0	0
Total	1,066	1415	629,764	917,227	83,803	109,578
Area of Hungary (ha)			9,303,000		100%	
% of protected land vs. total area			629,764	917,227	6.8	9.9

Source: Authority for Nature Conservation, Ministry of Environment

species has commenced not only at the individual but also at the population level. Hungary first granted protected status to ecological and taxonomical units that are indispensable components of ecosystems.

The new orientation in nature conservation focuses increasingly on the conservation of biological diversity in that it helps to strengthen the environmental strategy that had been previously neglected. This strategy aims at a coherent system of conserving ecosystem diversity, species diversity, and associations, while supplementing and maintaining former conservation priorities. Similarly, where focus was extended from species towards larger ecological units, common associations,



Photo 3: Pannonian landscape

1. The Órség National Park, covering 43 933 ha is expected to be designated in March, 2002 (incorporating two landscape protection areas of 39 810 ha).

Protected species in Hungary

Taxonomical groups	Protected	Strictly protected	Total
Mosses	78	0	78
Ferns	42	1	43
Gymnosperms	0	1	1
Angiosperms	512	61	573
Plants	632	63	695
Shell-fishes	2	0	2
Snails	41	1	42
Centipedes	1	0	1
Cray-fishes	1	0	1
Spiders	15	0	15
Insects	390	31	421
Invertebrates	450	32	482
Lampreys	0	2	2
Fishes	27	5	32
Amphibians	18	0	18
Reptiles	12	3	15
Birds	280	81	361
Mammals	41	14	55
Vertebrates	378	105	483
Animals	828	137	965
Protected species (total)	1460	200	1660

Source: Authority for Nature Conservation, Ministry of Environment

Other species that are listed in Annex IV (and partly V) of the Habitats Directive or protected by the Wild Birds Directive:

- plants: 498 species
- animals: 568 species, including
 - molluscs (22)
 - arthropods (24)
 - echinoderms (1)
 - fishes (7)
 - amphibians (38)
 - reptiles (70)
 - birds (330)
 - mammals (76)



Photo 4: The otter is one of our strictly protected species

agricultural and silvicultural areas, and cultivated areas should also be taken into account if the goal is a comprehensive conservation of biological diversity. Although conservation measures and initiatives have a long history in Hungary, and the ongoing establishment of a network of the most important protected areas can be considered good progress, conservation of biological diversity cannot be solved solely by these measures. A strong influence on our nature conservation policy is the fact that separate, different habitats can form a unified system, i.e., an 'ecological network'. Conservation of these areas can be a positive step towards conserving the diversity of natural systems.

Conditions of establishment of the National Ecological Network

Legal background

The Act on Nature Conservation and related sectoral laws are directly or indirectly linked to the ecological network or its conservation.



Photo 5: Mosaic landscape

Among the legislation, the most important is the Act No. LIII of 1996 on Nature Conservation, which provides a framework for the long-term protection of nature. It forms a strong basis for the administrative and legislative work. According to section (1) of Article 53 of this act, in order to define the tasks and policies of the state connected with the conservation of nature and biodiversity, to ensure the surveying, assessment, conservation and restoration of natural values and landscape assets, natural habitats, wild plant and animal species and other parts of the 9 natural heritage, and to co-ordinate the related tasks, a National Nature Conservation Master Plan shall be developed in the framework of the National Environmental Protection Programme (Act No. LIII of 1995 on the General Regulations Concerning Environmental Protection, Section 40.). The National Environmental Protection Programme was approved by decision No. 83/1997. (IX. 26.) decision of the Parliament. According to paragraph 2 of Article 53 the Master Plan shall contain: the long-term and medium-term aspects of the establishment and maintenance of an ecological network and ecological (green) corridors. The Article 53 of



Photo 6: Salt steppe habitats are characteristic of the Carpathian basin

the Act on Nature Conservation also provides an exact definition of ecological network and ecological corridors that envisages and defines the content of a ministerial decree to be issued later:

- a) a general description of the country's natural areas, the definition of processes and activities which are important from the aspect of the conservation of biodiversity;
- b) the general requirements as well as the sectoral and inter-sectoral tasks for the conservation of natural areas and values.

Paragraph 5 of Article 53 of the Act on Nature Conservation states that the Minister, in order to execute the Master Plan, shall by Decree provide for the rules pertaining to the establishment of ecological corridors and ecological networks. The rules pertaining to Environmentally Sensitive Areas has regulated by a Joint Decree of the Minister's of the Environment and Agriculture (2/2002 I. 23). These provisions were later used as a fundamental basis for the work done in creating the ecological network.

International background

It was imperative to launch a national programme on the establishment of the National Ecological Network. The international commitments, aims and objectives (e.g. Convention on Biological Diversity, Pan-European Biological and Landscape Diversity Strategy, declaration of the establishment of the European Ecological Network EECONET), moreover preparations for the accession to the European Union, all have had significant influence on the Hungarian administration procedure. Originally the preparation of an ecological network was initiated by IUCN and funded by the Dutch Government, developing the hypothetical background of the network in the mid-nineties. Later the work in this field was enhanced and undertaken by governmental agencies. Regarding international commitments, relevant global, Pan-European, European, or related EU agreements and conventions and other legal instruments are taken into account

that have any direct or indirect influence on the establishment of the ecological network. Among these, two have significant influence on the ecological network. Firstly, the Natura 2000 network of the European Union and secondly, the PEEN (Pan-European Ecological Network) programme of the Pan-European Biological and Landscape Diversity Strategy. The Hungarian national programme has been dealing equally with these two interconnected programmes, and the slight differences in sub-projects are the result of different tasks in the programmes. It should be stressed that during the integration of our nature conservation system into both the Natura 2000 network and PEEN ecological networks, priority is given to the maintenance of natural or near-natural habitats in Hungary, moreover to sites hosting any species or populations of national, European or Pan-European importance that are valuable in terms of nature conservation. Thus the same habitat type or a site may fall into different categories, e.g. designation at the national level, or important at the international level, based on land use type or scientific criteria. This approved system has the advantage that it may allow overlapping and therefore the site or habitat type should fulfil different criteria and, therefore, the guarantee for conservation is strengthened.

Planning and designation of the Hungarian National Ecological Network

Phase I. General planning (1998–1999)

Before approval of the Pan-European guidelines (1999), national legislative instruments were already under consultation (e.g. drafts to develop the National Physical Plan or the National Agro-Environmental Programme) in which the ecological network was proposed to be present from the very beginning of the planning process. At that time the National Physical Plan was the meeting point of different ministries where the different sectoral interests had to take into consideration, for the first time, the database of biological values and the

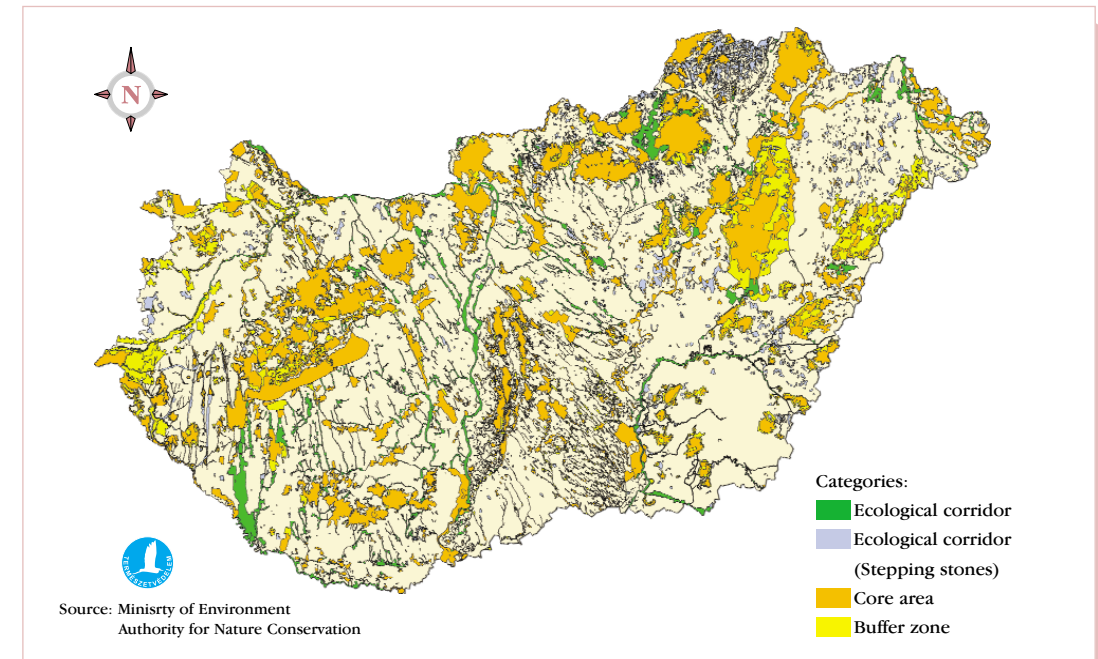
conservation of habitats depicted on maps illustrating the spatial structure.

The planning phase of the National Ecological Network, moreover its integration into the National Development Plan, was based on assorted versions of draft maps. The digital and printed versions of various databases of national parks or nature reserves were also taken into account. The experience and expertise of national park directorates and non-governmental organisations was a very important source of information. It was an interesting feature during this phase that at both the national and local levels, permanent and constructive means of co-operation were built between the directorates and the civil society. The first draft plan (with a scale 1: 500,000) was prepared on schedule. The aim was not to have a completely precise map, but to include the ecological network into the administrative planning system from the onset of the planning process. In addition, it was repeated several times, as depicting an ecological network on map entails a flexible system depending on the results of baseline assessment and the evaluation of near-natural areas. The classification of this initial version contained the following categories: continuous natural habitat complexes, mosaic-like natural and near-natural habitat complexes, distinct natural habitats, urban and cultivated complexes, artificial surfaces, small sites with outstanding values (loess patches, alkaline ponds, bogs, etc.), and ecological corridors.

Phase 2. Planning according to the categories of the Pan-European level (1999–2001)

As mentioned above, guidelines were approved in April 1999 concerning the establishment of the Pan-European Ecological Network (PEEN). PEEN was defined as a coherent, structural system of natural and near-natural ecosystems, habitats, species and landscape elements. Components of PEEN, moreover criteria for their identification were also determined (the well-known core areas, ecological corridors, buffer zones, restoration areas).

According to the guidelines, there is no limitation in space and size of the above-



Proposed National Ecological Network by the Pan-European Ecological Network categories

mentioned categories. It is also obvious from the interpretation of the categories that, in the process of establishing the ecological network, both the natural environment and land-use patterns are very important, and establishment of rehabilitation zones would mean more than just depicting these categories (core areas, ecological corridor) on a map. The guidelines provide the general approach to the national implementation of PEEN, hence it was necessary to compile a general methodological summary that is capable of involving a system of criteria which takes into account the evaluation of nationally designated areas. This allows standardised data collection by various specialists. As it was later confirmed, this common language was indispensable since there were many sources of error in spite of numerous consultations with local experts and staff of national park directorates. The designation of the network was based on the following consensus process by the guidelines, adapted appropriately to the national situation and having more precise definitions: The ecological network is a unified definition for the biological connections of natural or near-natural sites,

moreover the protected zones and their buffer zones provided by ecological corridors. Core areas are those sites of various sizes that support a maximum number of populations and the ecosystems consisting of these populations. Obviously, the core areas are habitats and genetic reserves of populations. Links between core areas are the ecological corridors that are strip-like, continuous habitats or a chain or mosaic of smaller or larger habitat patches. Ecological corridors and buffer zones should be designated around core areas, where the ratio of natural areas is relatively high and the land-use or utilisation of the landscape does not pose a threat to the core areas. Rehabilitation sites can be situated in core areas, ecological corridors, or buffer zones and primarily characterise those areas that are inclusions in the three elements, or are ecologically damaged and their rehabilitation concerning their size is feasible.

Based on the international and national aspects, and the regional assessments of nature conservation, 9 regional networks have been drafted by the staff of national park directorates. The digital database (scale 1 : 50,000) of the national network has also been prepared in

these drafts. During the compilation, all maps, documentation, databases, research results and field experience was effectively utilised.

Designation of parts of the Pan-European Ecological Network is insufficient for conservation, and the international provisions denote only the main directions. Operation of the network can be maintained by conserving, saving and sustainably using the core areas, moreover establishing and managing the connections between them (ecological corridors). According to the PEEN guidelines, there are several ways to ensure conservation of ecological networks. The most important tool is legislation, formal protection. There are many other recommended initiatives that can directly or indirectly help sectoral integration, in other words conservation of ecological networks. One of the important regulatory measures is when only ecologically friendly planning may take place in areas of the ecological network at all levels of the planning hierarchy. By implementing environmental impact assessment, another strong preventive measure can be applied to conserve these areas. Maintaining sustainable use, extensive ecological land use and agriculture need certain economical incentives, tax allowances, compensations, and support for investments. Special voluntary management contracts or co-operation with land users are also excellent ways to conserve these areas.

Protection of the ecological network

Legal means

The Act on Nature Conservation provides an outstanding framework for the establishment of the ecological network. However, a series of secondary legal instruments are needed that are connected with the conservation of an ecological network.

Obviously, the ministerial decree on the establishment of an ecological network (the draft being consulted) will partly synthesise

by mentioning all provisions worded in the above-mentioned legal instruments. Consequently, this decree summarises all the Hungarian nature conservation activities that have site-based elements. At the same time, the draft contains new rules for designation of sites, a planning system, monitoring and involvement of local groups, etc. The main elements and features of the draft regulation on an ecological network are as follows:

- Special provisions concerning maintenance and improvement of an ecological network that are not expressed in the Act on Nature Conservation (hereafter: Act).
- Classify nationally designated sites of national network into national categories of protected areas according to the law. (The categories were 'transformed' into PEEN categories);
 - a) protected natural areas (Article 4, paragraph g)
 - b) buffer zones of protected natural areas (Article 30)
 - c) natural areas (Article 15) and sites to be considered as natural areas based on separate law,
 - d) near-natural areas
 - e) ecological and green corridors and sensitive natural areas (or environmentally sensitive areas = ESA) determined by separated legal instrument (ESA can overlap with the above-mentioned categories).
- Apply the provisions of the Act and other laws concerning designation of protected natural areas, their buffer zones, natural areas, moreover sensitive natural areas that are integral parts of the ecological network.
- As parts of the ecological network, empowers national park directorates to have authority to issue decisions for designation of sites of ecological or green corridors and near-natural areas (these areas can sustain the real network character of the ecological network).
- Prescribes that the national park directorate will inform those who propose sites to be included in the ecological network of the commencement of the designation process. Furthermore it will also inform owners or users of the site, in addition the public by posting public notices at municipal halls or at the directorates.

- It will apply provisions concerning natural areas in case of designated near-natural sites, ecological or green corridors.
- Prescribes that important provisions or sites designated as parts of the ecological network shall be incorporated into all planning and development plans.
- Empowers the national park directorates with a right to approve, modify or even reject plans of any intervention.
- Consultation right for approval or modification of any plan of human intervention (consent of the co-operating authority).
- Set an obligation to inscribe the ecological network status in the property inventory records for every part of the ecological network.
- Programmes, detailed expert requirements concerning designation, maintenance, and improvement of ecological network will be part of a separate chapter 'National Ecological Network' that is an individual chapter of the National Nature Conservation Master Plan.
- Set an obligation to compile the management network plans in each national park to ensure implementation of management objectives.
- Classify designated parts of the ecological network into zones based on international provisions (four categories of PEEN).
- Order to create a system for monitoring the sites, ecosystems, species belonging to the ecological network (studying, data collection and storage, update, and evaluate).
- Ensures that environmentally sensitive farming can affect these areas, moreover that the nature conservation management shall be provided by the state.

Sectoral integration

In the following section the adaptation to national nature conservation legislation, planned legal instruments for the conservation of ecological network, refining of maps and recent steps in sectoral integration concerning ecological networks are presented. In certain agro-environmental, physical planning, water

management and environmental impact assessment legal instruments there are clear provisions concerning ecological networks. In addition, the planned new ministerial decree on the protection of an ecological network will introduce measures for ecological networks and will emphasise not only the exact protection of habitats and ecosystems of the ecological networks, but also the establishment, rehabilitation, and improvement of biological connectivity between them. Beside legislation concerning nature conservation, there are other important laws in which there are direct or indirect links to the conservation of ecological networks by other sectors. Though the initial part of the development of the national ecological network has been successfully completed, there are several tasks to fulfil. Nevertheless, after approval of the draft ministerial decree on the ecological network, a significant step towards the practical protection of the elements of the network is expected to be in place in Hungary.



Photo 7: Wetlands are important elements of the ecological network

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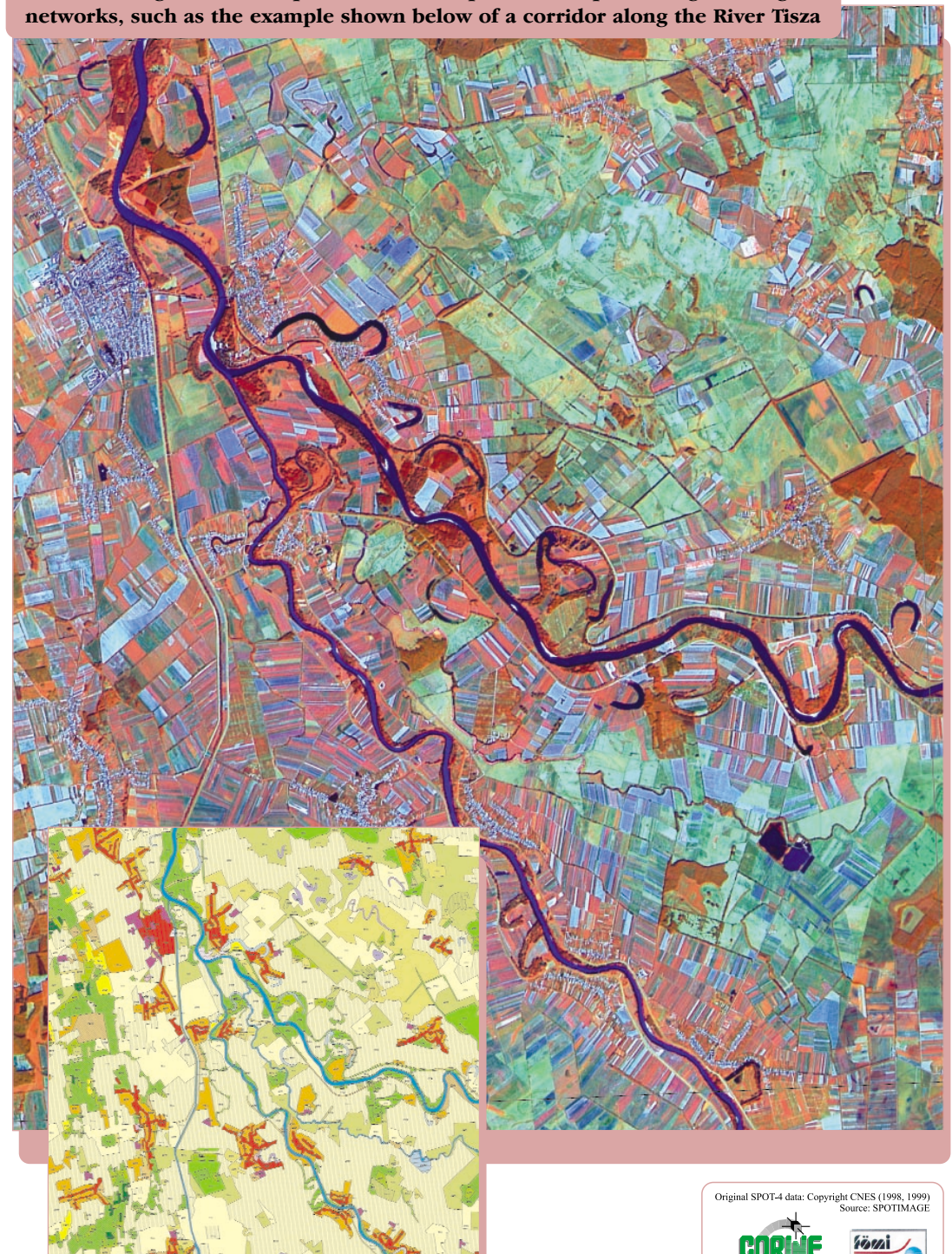
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Photo 8: Traditional agriculture ensures the maintenance of mountain grasslands

Satellite images and interpreted land use patterns help to design ecological networks, such as the example shown below of a corridor along the River Tisza



Original SPOT-4 data: Copyright CNES (1998, 1999)
Source: SPOTIMAGE



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