

Development of National Ecological Network of Moldova

ECOLOGICAL NETWORKS – INTRODUCTION TO EXPERIENCES AND APPROACHES



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Introduction – steps towards National Ecological Network (NEN) of Moldova

- Developments of Institute of Zoology (1986-1990) based on the need of more balanced ecosystem in agriculturally heavy transformed landscapes, (biocenotic oases = core areas. and corridors).
- ТЕРКСОП Territorial Complex Program for Nature Conservation (1989)
- National Biodiversity Strategy and Action Plan (2001) introduced a legal basis for eco-networking activities.
- Concept of NEN of the Republic of Moldova (2001-2002):
 - framework definitions and notions and Moldova's integration in Pan-European Ecological Network (PEEN) ideas;
 - setting criteria for classifying and prioritising the NEN elements;
 - designating agricultural land as components of Eco-Network;
 - legal framework analysis and plan of the main actions;
 - NEN map a scale of 1:500 000.
- High Nature Value farmland (ECO-Forum / BIOTICA & UNEP) vision for EECCA (2007)

Legal progressing

- Law on ecological network (2007).
- National program on establishing the National Ecological Network (2001).
- Guidance on creation of ecological networks (draft of 2010, National Environmental Fund – BIOTICA).
- Linked to new draw Law on Protection of Environment.
- Problems – presentation of Liliana Josan

Methodology

- Concept of NEN is based on ideas of PEEN.
- Notion of Ecological Network is near to NATURA 2000.
- Implementation of European Union (EU) Habitat Directive
 - was historically concentrated rather on designation of sites, than
 - on planning and establishing the ecological corridors.
- NATURA 2000 Methodology is based on identification of European-importance habitats determined by :
 - classification / specifications of these habitats,
 - presence of protected species argues for territorial protection.
- Methodology of NEN is based on the direct measuring the biodiversity that may be rich independently on
 - presence or absence of European-importance habitats
 - origin of the richness
- NEN incorporates High Nature Value farmlands.

Development of the NEN of Moldova as part of the PEEN, with emphasis on transboundary cooperation: increased knowledge

- Matrix of data

1	Plants	Rare Insects	Herpetofauna	Mammals	Birds
2	+	+	+	+	+
3		+		+	
...	+				+
62	+	+	+	+	

- Data / results

YEAR	SITES	MATRIX - %	CORE AREAS
2001	84	26	62
2007	about 100	about 30	82
2010	150	80.3	103

Development of the NEN of Moldova as part of the PEEN ... : renovation of criteria system

- Principles of staggered criteria:
 - Pesenko (1982) and Andreev (2002)
 - ranging is based on logarithmic scaling:
 - regular but different stepping with major rule –
 - each lower rank include more values than the previous one, besides the lowest rank (out of near-core areas diapason).
- Only biodiversity dimensions that include many species of international concern are used for determination of probable core areas of international importance through scaling.
- In other cases (e.g. plants) additional criteria are used for determination of such core areas.
- Final decision about rank of a site / core is based on generalization of data on major biodiversity dimensions and specific consideration e.g. extreme values of index of species concentration in plants.

Development of the NEN of Moldova as part of the PEEN: incorporation of international instruments

- Criteria based on possibility to range data:
 - number of bird species of Annex 2 of the Bird Directive that became eligible in Moldova;
 - number of mammals protected by Bern Convention;
 - number of insect species of IUCN World Red Lists (threatened + near-threatened).
- Combined criteria (scale-unable for plants) as presence of European importance habitats and species of Bern Convention
- NATURA 2000 classification of vulnerable habitats is used:
 - habitats present in Moldova selected and
 - updated by some types biogeographically absent in the EU limits;
 - list of preliminary identified sites numbers 26 units.



Aplicarea pilot a NATURA-2000: evidențierea habitatelor
 Пилотное применение NATURA-2000: выделение местообитаний
 Pilot implementation of NATURA-2000: identified habitats



Map with
 NATURA 2000
 habitats and
 international
 concern
 species

Development of the NEN of Moldova as part of the PEEN: covering species richness

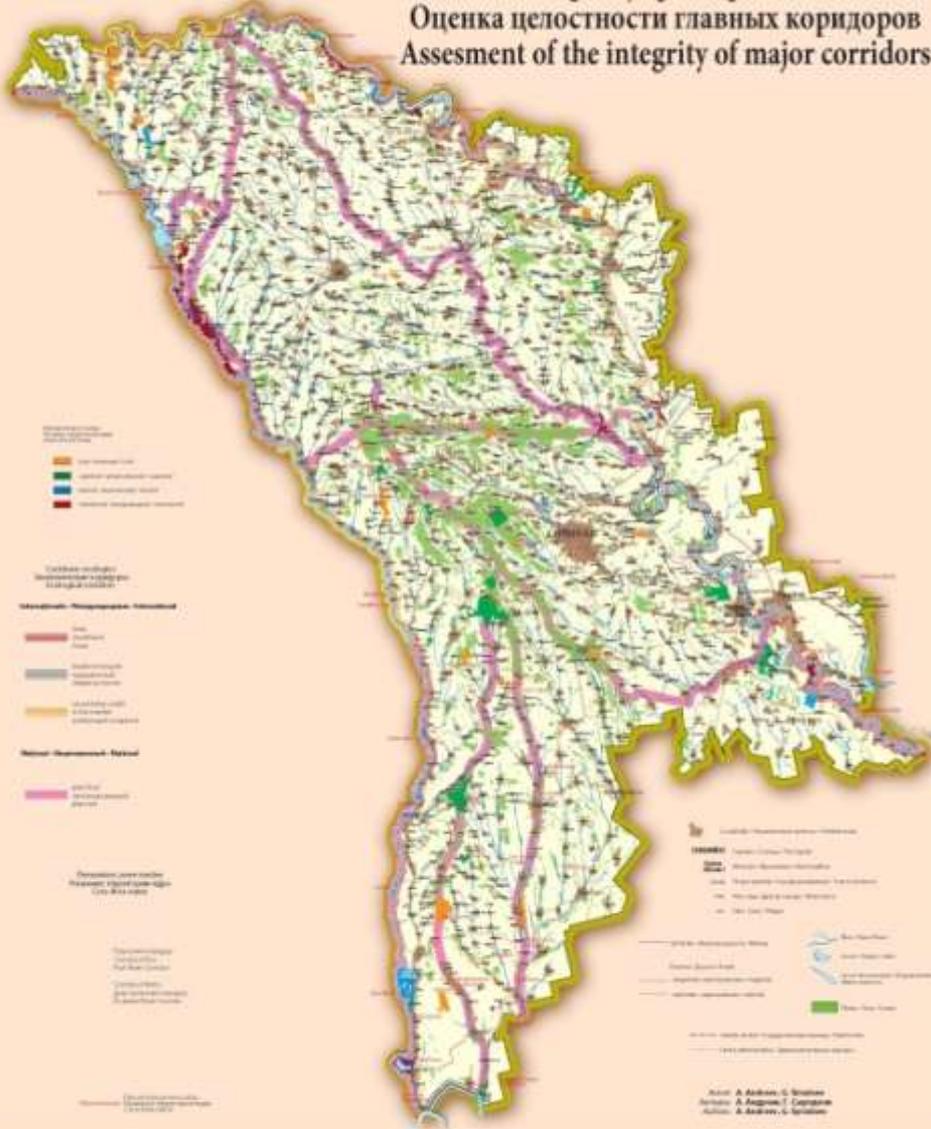
- Protected Areas support to biodiversity was never assessed in Moldova
- Core Areas of the NEN support:
 - about 90% of highest flora
 - 82 % of rare insects (of Operational List)
 - 93 % of bird species including some newly disappeared;
 - 99 % of mammals
- Major gaps are rather determined by style of studies (rapid investigations) and likelihood of finding a rare species.
- As the result 9 sites are recognized as Core Area of international importance, 11 – of national and 83 – of local one.
- Besides these nucleus, data on macrozoobenthos and archeological and palaeontological values are incorporated in information system.

Development of the NEN of Moldova as part of the PEEN: Indicative maps

- Notion is introduced by ECNC (I.M.Bouwma, R.H.G. Jongman & R.O. Butovsky, 2001) without a definition.
- Definition may be “maps displaying the state-of-art, gaps and probable directions of planning and activities in favour of nature”
 1. Core areas NEN: major biodiversity values - map shows levels of species richness and relevantly gaps in that knowledge.
 2. Core areas NEN: target species – map shows levels of presence of endangered species following the national law and international lists.
 3. Pilot implementation of NATURA-2000 – EU instrument works here.
 4. Pilot implementation of CORINE BIOTOPS classification within the NEN – other EU information tool proves possibility to use in Moldova.
 5. Assessment of the integrity of major NEN corridors - maps shows distribution of integral bands, stepping stone elements and nature-stripped sectors to be ecologically improved in two major corridors.



Evaluarea integrității principalelor coridoare
Оценка целостности главных коридоров
Assesment of the integrity of major corridors



Map of corridors

Development of the NEN of Moldova as part of the PEEN: other issues

6. The NEN core areas in support of landscape diversity – presentation of Gennadiy Sirodoev.
7. The NEN core areas on the background of anthropogenic pressure upon environment – map compares cores areas distribution through the country regions with different levels of landscape agriculture-related transformations.
8. Pilot zoning of the NEN core areas – done for Ramsar Sites 1316 Lower Dniester and Unguri-Holosnita1500 and shows the patchy distribution of the most biodiversity valuable areas within natural and subnatural ecosystems constituting these core areas.

and

- Economical basis for creation of the National Ecological Network of Moldova – presentation of Olga Kazantseva.
- Planning in transboundary zone at north of Moldova - Vasyl Budzhak, Volodimir Cherevatov, Ilya Chorney, Igor Skilskyi.

Zonarea de pilot

Пилотное зонирование

