

National ecological network and Natura 2000 in Croatia along rivers Mura and Drava

Neven Trenc, mr.sc.geol.

Photographs:

SINP

T. Mikuska,

D. Grlica































Content

- n Biodiversity
- n National ecological network
- n Natura 2000 proposal

Importance for biodiversity

- n Rivers Mura and Drava are of exceptional importance as one of the last remaining semi-natural lowland watercourses in the Central Europe.
- n River Danube at its confluence with Drava delimits flood area of Kopački rit characterised with exceptional richness of wetland and water habitats
- n The area contains variety of wet habitats, which are among the most threatened in Europe: alluvial forests, wet grasslands, gravel and sand bars, islands, steep banks, oxbow lakes, stagnant backwater, abandoned riverbeds and meanderings.

Birds

- n The wider area of the river is distribution area of threatened and protected bird species such as Pygmy Cormorant (*Phalacrocorax pygmaeus*), Willow Warbler (*Phyloscopus trochilus*), White-tailed Eagle (*Haliaeetus albicilla*), Little Tern (*Sterna albifrons*), Black-winged Stilt (*Himantopus himantopus*), Bittern (*Botaurus stellaris*), Purple Heron (*Ardea purpurea*), Great White Egret (*Egretta alba*), Black Stork (*Ciconia nigra*) and other.
 - n The nesting of more than 70 pairs of White-tailed Eagle (*Haliaeetus albicilla*) has been recorded. On sand and gravel banks of Mura and Drava Common Tern (*Sterna hirundo*), Common Sandpiper (*Actitis hypoleucos*) and Little Ringed Plover (*Charadrius dubius*) nest. This is also nesting area of Great Cormorant (*Phalacrocorax carbo*) and significant populations of White Stork (*Ciconia ciconia*) and Black Stork (*Ciconia nigra*).
-

Fish

- In the rivers Drava and Mura 65 fish species and five endemics of Danube catchment area have been found: Huchen (*Hucho hucho*), Danubian Roach (*Rutilus pigus*), Balon's Ruffe (*Gymnocephalus baloni*), Schraetzer (*Gymnocephalus shraetser*) and Streber (*Zingel streber*).
 - Of them 19 are in the Red book of Freshwater Fish of Croatia like: Ziege (*Peleceus cultratus*), Asp (*Aspius aspius*), Weather Loach (*Misgurnus fossilis*) and European Mudminnow (*Umbra krameri*).
-

Amphibians

- n Among the amphibians, 2 regional amphibian endemics should be emphasised – the Danube Crested Newt (*Triturus /cristatus/ dobrogicus*) and the Pannonian Moor Frog (*Rana arvalis wolterstorfi*).
- n Potentially threatened species of wetland and water habitats such as the European Pond Terrapin (*Emys orbicularis*), the Fire – bellied Toad (*Bombina bombina*) and Tree Frog (*Hyla arborea* are also present

Dragon flies

- n The area is important as a favorable habitat for dragonflies (*Odonata*). Only in the area of the upper flow of river Drava qualitative content of fauna makes 60% of the total number of dragonfly species recorded in Croatia

Plants

- Among wetland plants that are threatened or rare on the European level following are particularly important: Siberian Iris (*Iris sibirica*), Arrowhead (*Sagittaria sagittifolia*), Water Soldier (*Stratiotes aloides*), Flowering Rush (*Butomus umbellatus*), Water-Meal (*Wolffia arrhiza*), Water Chesnut (*Trapa natans*) and others.
- Critically endangered species in Croatia that grows on river bars is False Tamarisk (*Myriacaria germanica*)

National ecological network

- n 2000. - 2003: PEEN network project + Emerald network project I
 - n 2003. – 2005: CRO-NEN project and first draft of national ecological network - LIFE
 - n 2005. – 2006: revision of NEN on the basis of new collected data
 - n 2006: Emerald network project II – map and database of potential NATURA 2000 areas
 - n 2007: National Ecological Network
 - n 2008 N2K - PHARE
-

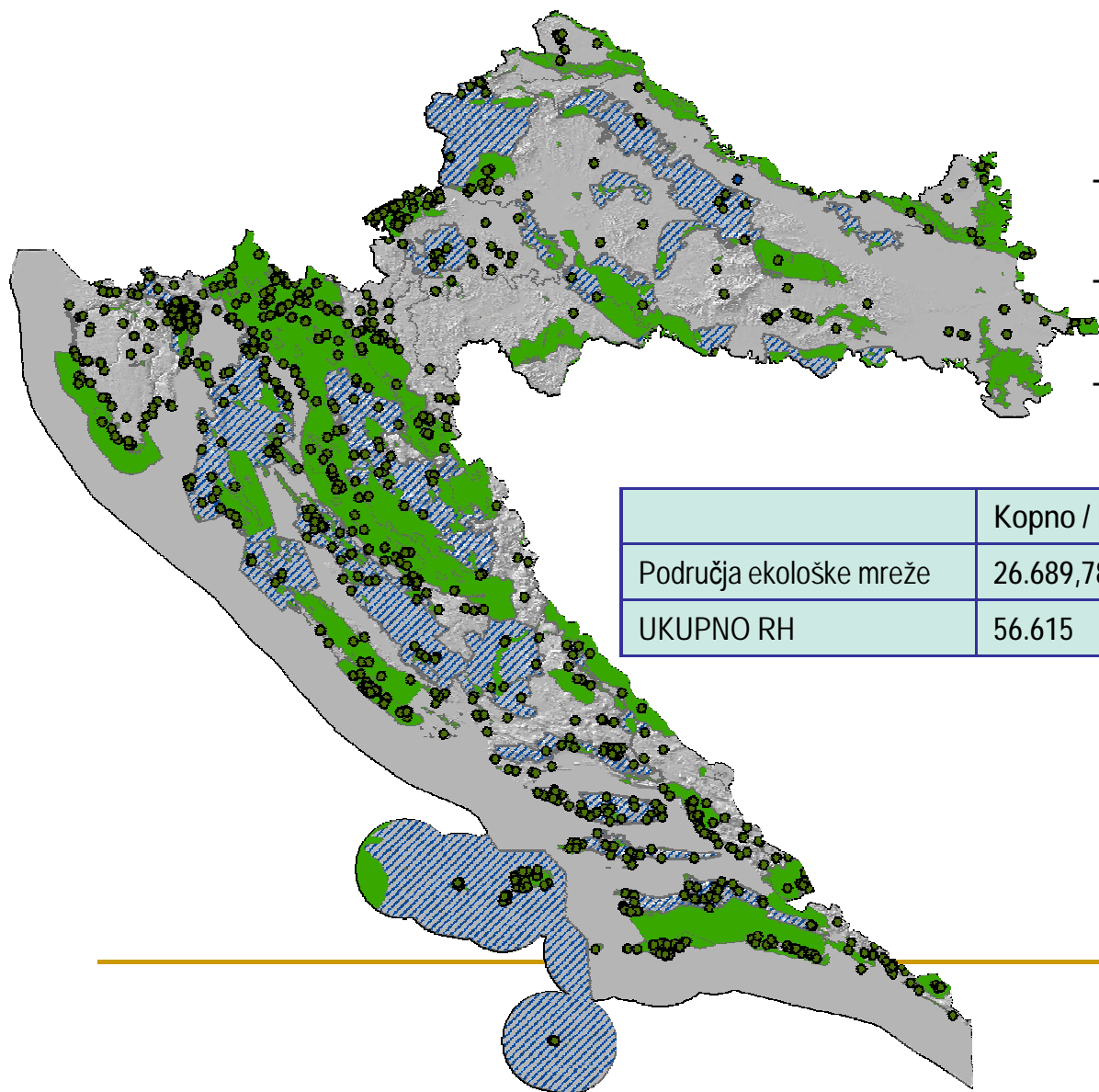
Methodology

- n Distribution analysis of wild taxa and habitat types – IMPORTANT AREAS!
 - n Data used:
 - n SINP databases
 - n Other accessible relevant databases (exp. FCD - Flora Croatica Database)
 - n Habitat map of Croatia
 - n Red books
 - n Spatial plans
 - n Results of Inventarisation projects led by Public institutions
 - n Accessible papers and studies (published and unpublished)
 - n Targeted research / studies ordered
 - n SINP data – field work
-

Ecologically important sites – NEN sites

- n all areas set out as an important for conservation and/or establishment of favourable status of wild taxa and habitat types threatened on national or international level
- n areas were determined using expertise criteria based on accessible data <50 years old
- n internationally threatened taxa and habitat types listed on Annexes of BD and HD
- n nationally threatened taxa and habitat types listed on Croatian Red List or in Ordinance on habitat type protection
- n all speleological objects (including marine caves)
- n all NEN sites include conservation objectives and protection measures
- n → NEN sites of international importance - NATURA 2000

National Ecological Network



- poligonske i točkaste teme
- cca 1500 područja + 40 SPA
- 2 koridora

	Kopno / km ²	%	More / km ²	%	Ukupno / km ²
Područja ekološke mreže	26.689,78	47	12.140,48	39	38.830,26
UKUPNO RH	56.615	100	31.644	100	88.259

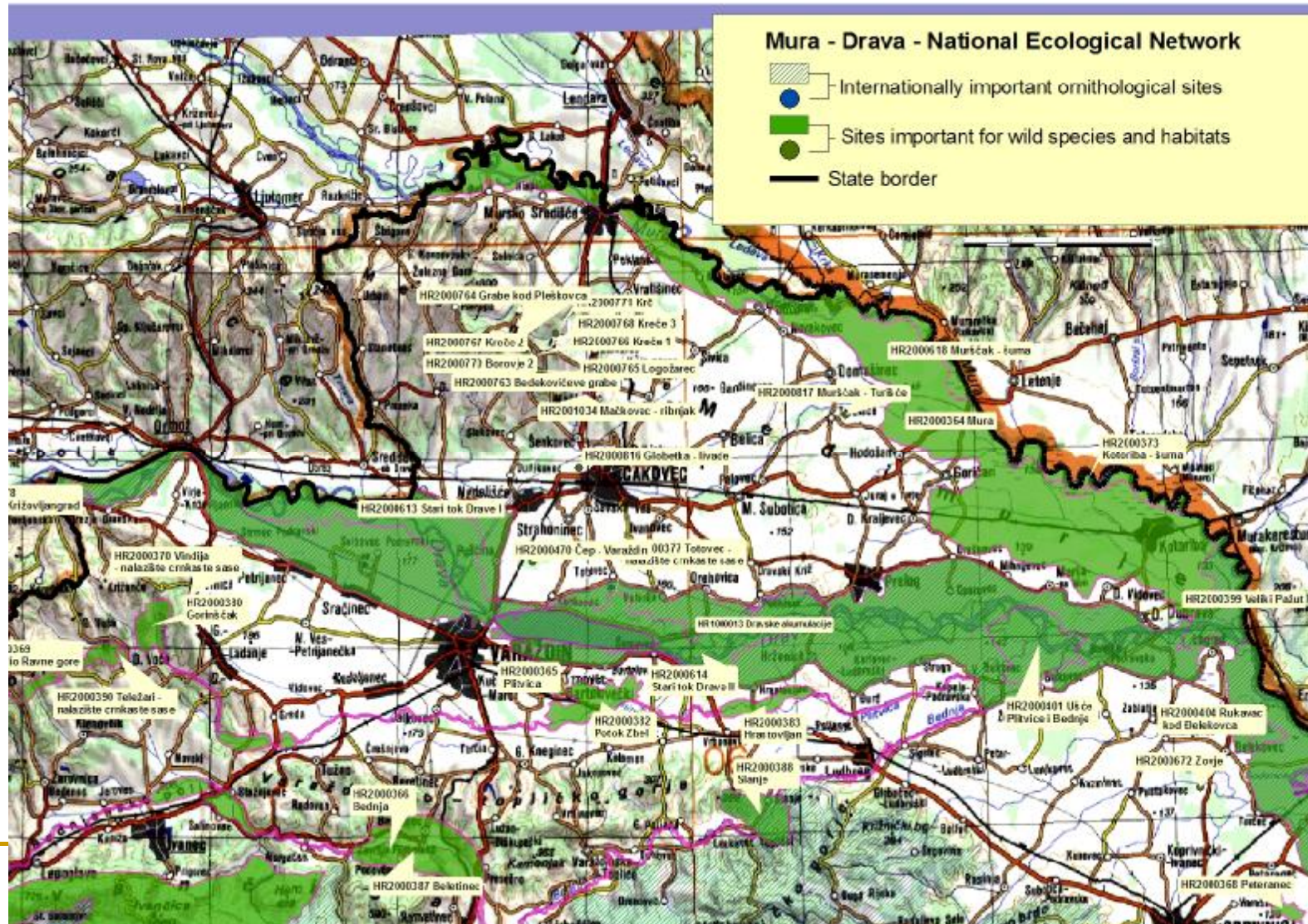
National legislation - HD

- n National legislation already transposes EU Habitats directive
- n Nature protection act 2005
- n Ordinance on Ecological Network, 2007
- n Rulebook on the Assessment of the Impact on Nature (Article 6(3,4))

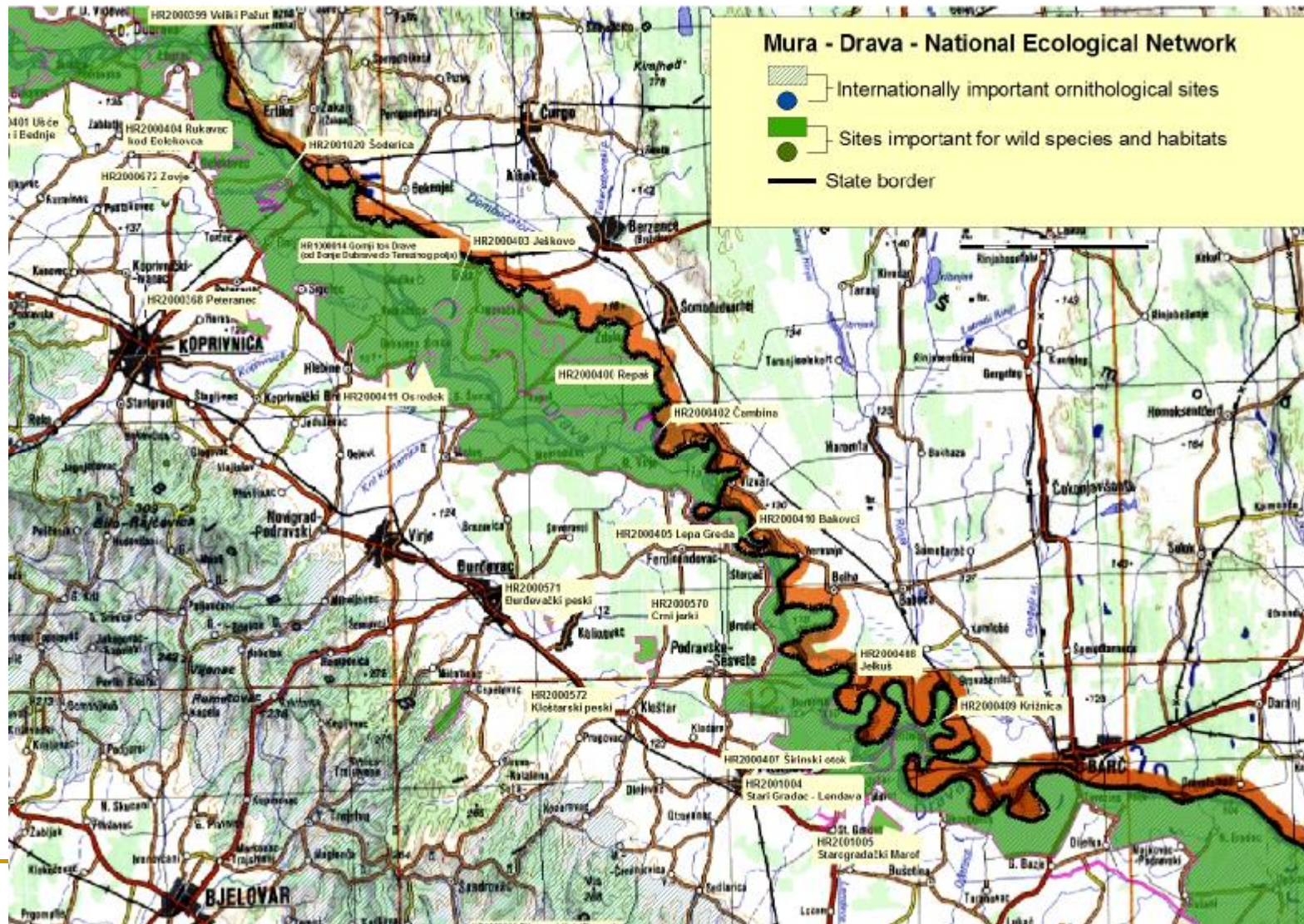
Ecological Network along Mura Drava and Danube

- n 4 large sites of ornithological importance
- n 57 sites important for wild taxa and habitat types

Mura and Drava Accumulations



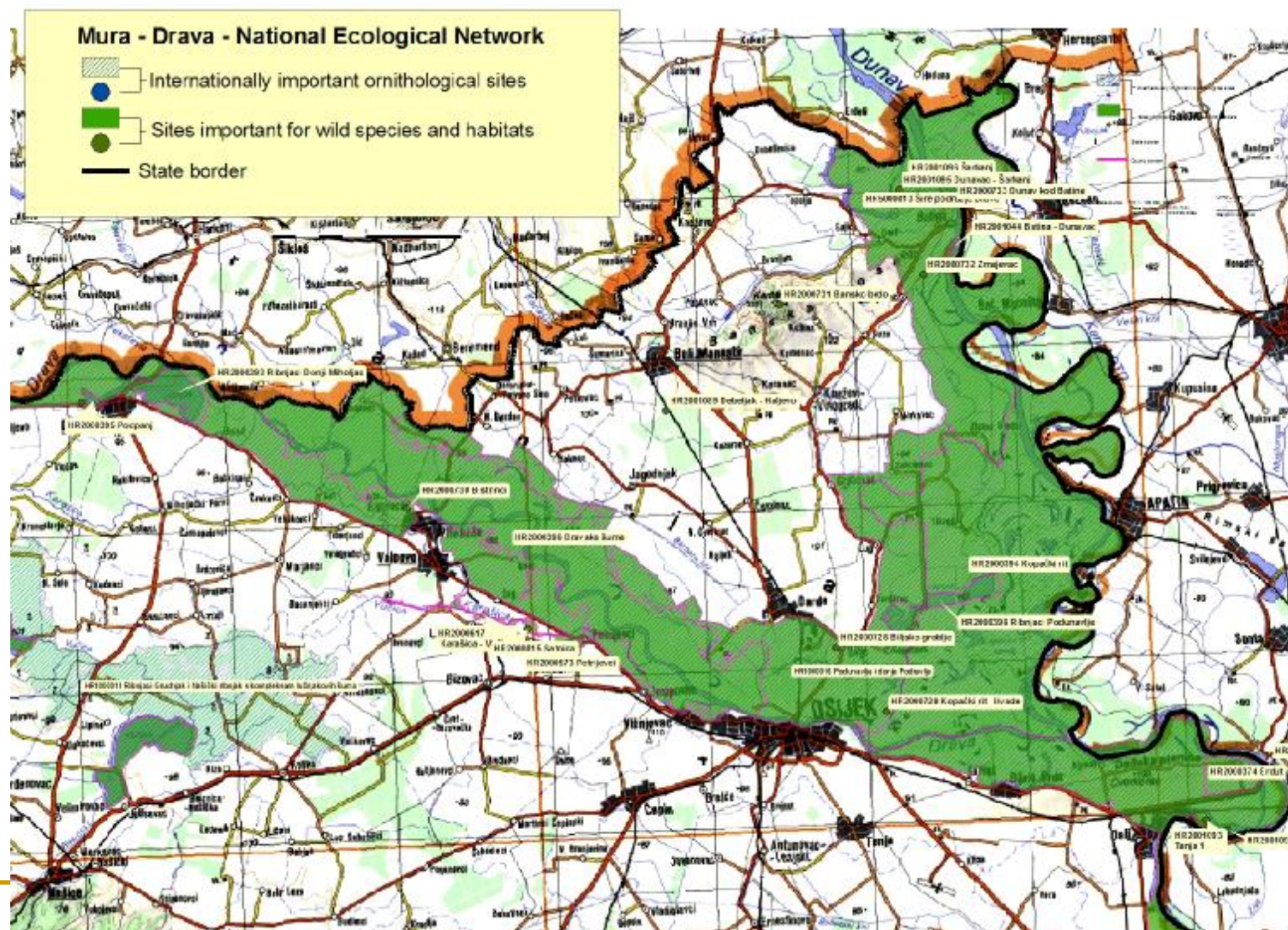
Upper flow of Drava



Middle flow of Drava



Area along Danube and lower Drava



Mechanisms for implementation

- n Management
- n Protected area and county public Institutions
- n Assessment of the Impact on Nature
- n Contracts incentives
- n Guidelines

NIA Appropriate assesement

- n Most important mechanism
- n All plans and projects – no exceptions
- n All impacts – direct, indirect and cummulative
- n Impacts in relation to conservation goals – listed habitats and species and site integrity

Guidelines i.e water and wetland habitats

- n • Protection of water and marsh habitats in natural state and revitalization if needed
- n • To ensure sufficient amount of water in those habitats which is of key importance for their survival
- n • Preservation favourable physical and chemical properties of water or improve them if they are in unfavourable condition for habitat and species survival
- n • maintenance of favourable mineral and nutrient composition in water and marshlands
- n • Preservation of habitat diversity and favourable water dynamics
- n • Preservation of watercourse connectivity

Address http://www.cro-nem.hr/nem.php?oblasti_komunaHR2000394

EKOLOŠKA MREŽA

Šifra i naziv područja:
HR2000394 #., Kopački rit

Ciljevi očuvanja

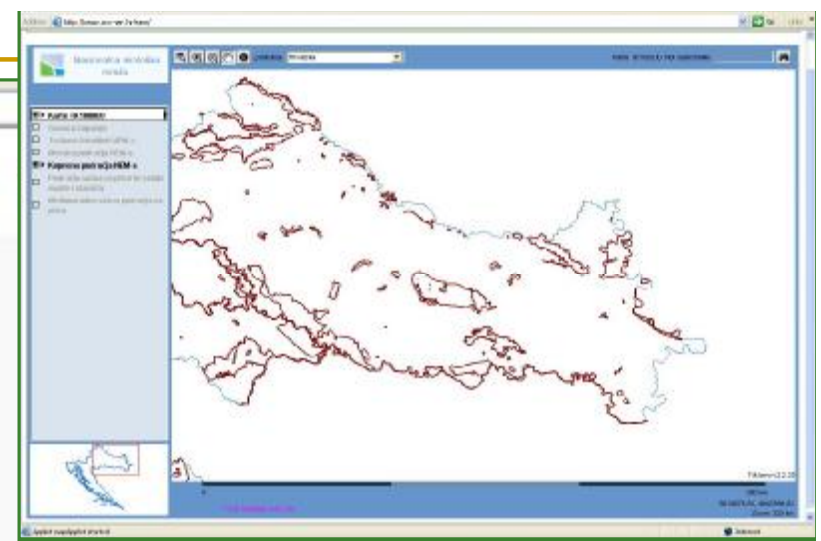
Divlje svojte

- mješastile riba
- barana loznjača
- bolon
- crveni mlikač
- žetverolono razmarika
- deber
- franjova prejevalica
- sišečin crvenko
- osake divlje svojte ugrožene na europskoj i nacionalnoj razini
- pištur
- prugasti belevac
- plis močvarica
- ribarica
- seljarka
- ulmojnsko palisno
- veliki penonski vodenjak
- vidra
- vjun
- wetence

- Elyna orbicularis*
- Alpinus asellus*
- Bombina bombina*
- Marsilea quadrifida*
- Castor fiber*
- Apelura malis*
- Lycaena dispar*
- Milagurus fassilla*
- Gymnocyphalus schwaetzer*
- Netrica tessellata*
- Pelecus cultratus*
- Epidendrum maritima*
- Pharus (constans) rubricoloris*
- Lutra lutra*
- Corbula elongatoides*
- Oronota*

Stanišni tipovi

IBRS šifra	NATURA šifra	stanišni tip
E.1.1.2.	91E0*	Poplavna šuma bijele vrbe s močvarnom izoškion
E.1.1.3.	91E0*	Poplavna šuma vrbe i topole
E.1.2.2.	91E0*	Poplavna šuma orme i bijele topole
E.2.2.3.	91F0	Šuma hrasta lužnjaka s velikom štitovnikom (subasocijacija s obilnom grabom)
C.2.2.		Višinske livade Sjeverne Europe
A.4.1.		Tršćaci, rogovići, visoki šiljevi i visoki šedevi



Done

Internet

Guidelines i.e water and wetland habitats

- n • Preserving biological species important for habitat type (no introduction of allochthonous species and GMO)
- n • avoiding watercourse regulation and changes in water regime of water and marsh habitats if it is not necessary for protection of humans, and settlements
- n • to use natural retentions and watercourses as a protection from floods
- n • conducting gravel extraction on elevated terraces or in inactive inundation area and avoiding extraction in active riverbeds or flooded lowlands

Natura 2000 in Croatia

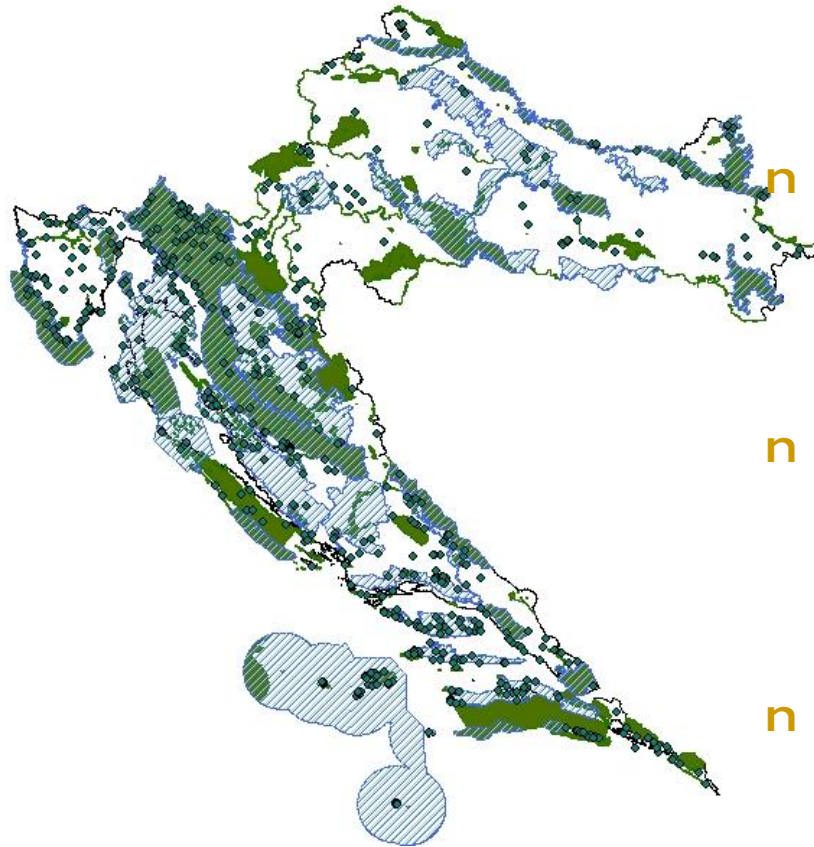
- n PHARE Implementation of N2K in Croatia
- n Croatian expert N2K proposal has been completed
- n Consultation process has started
 - n Web site
 - n brochures
 - n Series of workshops for stakeholders and regional workshops

Croatia - biodiversity

- n Croatia has rich biodiversity in European context
- n 4 biogeographic regions in a small area
- n 221 species (birds: 87 BD I + 53 reg.mig; 134 HD II) i 75 habitat types HD I)
- n NATURA 2000 important addition to EU

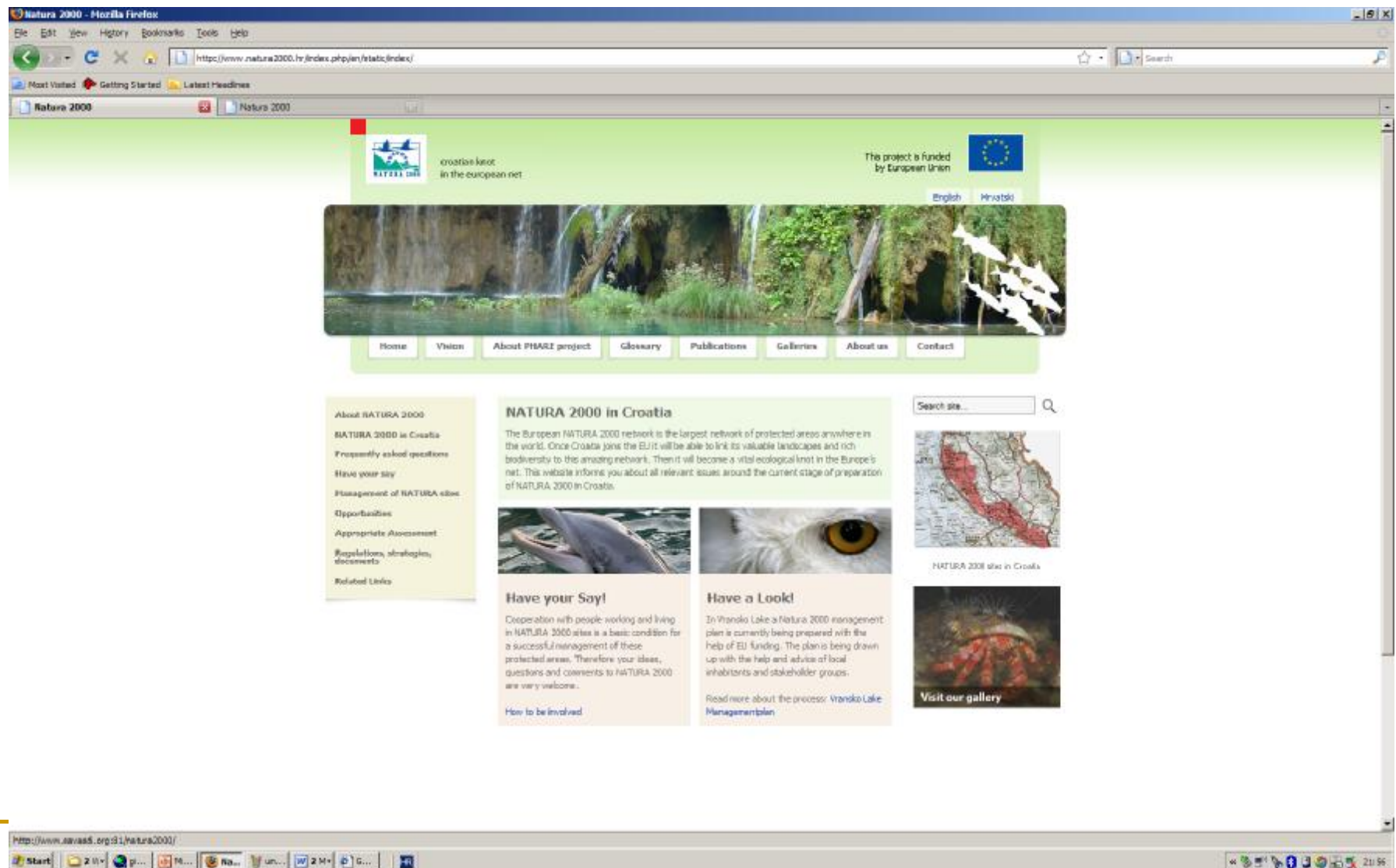


Natura2000



- n SPA 38
 - q 39% land,
 - q 32,5 % sea (9 areas)
- n pSCI 1104,
 - q 25% land,
 - q 14% sea (242 areas)
- n The total 44,83%

Comments through web www.natura2000.hr



Interactive map

