

# Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

## Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2<sup>nd</sup> edition, as amended by COP9 Resolution IX.1 Annex B). A 3<sup>rd</sup> edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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### 1. Name and address of the compiler of this form:

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Designation date

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Site Reference Number

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### 2. Date this sheet was completed/updated:

Updated 25. October 2007.

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### 3. Country:

Croatia

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### 4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

**Nature Park Kopacki rit (Kopački rit)**

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### 5. Designation of new Ramsar site or update of existing site:

**This RIS is for** (tick one box only):

- a) Designation of a new Ramsar site ; or  
b) Updated information on an existing Ramsar site

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6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or  
ii) the boundary has been extended ; or  
iii) the boundary has been restricted\*\*

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or  
ii) the area has been extended ; or  
iii) the area has been reduced\*\*

\*\* Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

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7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;  
ii) an electronic format (e.g. a JPEG or ArcView image) ;  
iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary of the Ramsar site is the same as an existing protected area (Nature Park Kopacki rit).

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8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Approximate centre: 45°40'05"N 018°54'10"E

From 045°35'-045°47'N and 018°45'-018°59' E

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9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The site is situated in Baranya region in northeastern part of Croatia, Osječko-baranjska county, population: 367,000 – census 2001. The site lies about 15 km northeast of the city of Osijek, population: 114,616 - census 2001.

**10. Elevation:** (in metres: average and/or maximum & minimum)

Minimum: 76 m; maximum: 86m, average: 82 m

**11. Area:** (in hectares)

23,894 ha

**12. General overview of the site:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Kopacki rit is an inner delta wetland with specific morphological and sedimentation processes characteristics. It is situated in the central section of the Danube floodplain, at the confluence of the Danube and one of its five major tributaries, the Drava River. The area is a mosaic of lakes, marshes, wet grasslands, reed beds, and riverine forests. The area is annually flooded from one month on the higher parts up to the three months on the lower parts, usually from March to May. This interaction of water and land generates high biological diversity with over 400 vascular plant, 293 bird, 56 mammal, 55 fish, 11 amphibian and 10 reptile species.

**13. Ramsar Criteria:**

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7    8 • 9  
 ✓    ✓    ✓    ✓    ✓    ✓    ✓    ✓    ✓   

**14. Justification for the application of each Criterion listed in 13 above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1:

Kopacki rit is the representative and best preserved example of an alluvial floodplain along the middle course of the Danube River, as well as intact, natural and functioning inland delta of a major river that is rare in temperate climates. (Source: World Heritage Nomination - IUCN technical evaluation 2000)

Criterion 2: Kopacki rit is of considerable importance for threatened bird species mentioned in the EU Bird Directive 79/409/EEC, Habitat Directive 92/43/EEC, amongst them: herons and egrets (*Ardea cinerea*, *A. purpurea*, *A. alba*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Ixobrychus minutus*, *Botaurus stellaris*), Ferruginous Duck *Aythya nyroca*, storks (*Ciconia nigra*, *C. ciconia*), birds of prey (*Haliaeetus albicilla*, *Falco cherrug*, *Milvus migrans*, *Aquila clanga*), terns (*Chlidonias hybrida*, *C. nigra* and *Sterna hirundo*) and sand martin (*Riparia riparia*). Populations of mammals include viable population of otters *Lutra lutra* and the European beaver *Castor fiber*, wild cat *Felis silvestris*, and 12 species of bats *Chiroptera*. The area supports important populations of *Emys orbicularis*, *Bombina bombina* and *Hyla arborea* – species listed on the IUCN red lists. (see also point 22)

Criterion 3:

The site is internationally important for maintaining the biological diversity of the biogeographic region. The site is an important migration and wintering site for waterfowl – geese (*Anser fabalis*, *A. anser* and *A. albifrons*) with 15000 individuals on average, and ducks (*Anas platyrhynchos*, *A. crecca*, *A. penelope*, *A. chyeata*, *A. strepera*, *A. acuta*, *Aythya ferina*, *A. fuligula*) with max. 50,000 individuals; as well as for *Phalacrocorax pygmaeus* (max 250), *Ardea alba* (max 1100), *Platalea leucorodia* (max. 1000) The Kopacki rit support diverse and important vertebrate fauna. It includes 55 fish, 11 amphibian, 10 reptile, 293 bird and 56 mammal species. (see also point 22)

Regarding plant species, so far, the recorded number of vascular plants includes 426 species belonging to 81 families, that represents 10% of the total Croatian flora.

Deleted:

Criterion 4:

Kopacki rit has acted as a refuge for many species of breeding birds, particularly waterbirds, in periods when there was less concern than at present time for their conservation along the Danube. Today, thousands or so of Grey Herons, several hundred pairs of trans-Saharan herons, the whole spectrum of European woodpeckers and many other birds form the nucleus for other more vulnerable colonies elsewhere. The site is therefore a “gene pool” for many healthy populations as well as a refuge for endangered ones. (Source: World Heritage Nomination - IUCN technical evaluation 2000).

Criterion 5:

Kopacki rit regularly supports 20.000 waterbirds, particularly during breeding season, spring and fall migration, as well as during wintering period. During the period of 2000-2005 from 15,779 (2000) up to 50,779 (2005) waterbirds were counted during the mid-January waterbird counts (Source: Kopački rit Nature Park Management Office).

Criterion 6:

Kopacki rit regularly supports more than 1% of the individuals of a biogeographic population for a number of a waterbird species. This include:

| Scientific name     | English name        | Average population estimates in Kopacki rit | Percentage of biogeographic population |
|---------------------|---------------------|---|--|
| Phalacrocorax carbo | Great cormorant     | 1836 pairs (2000-2005)<br>B                 | 2.37                                   |
| Ardea alba          | Great (White) egret | 500 ind (2000-2005) P                       | 1.06                                   |
| Platalea leucorodia | Eurasian spoonbill  | 400 ind (2000-2005) P                       | 3.33                                   |
| Anser anser         | Greylag goose       | 2.000 ind. (2000-2005)<br>W                 | 8                                      |
| Anser albifrons     | White-fronted Goose | 4.000 ind (2000-2005)<br>W                  | 16                                     |
| Anas platyrhynchos  | Mallard             | 20.000 ind (2000-2005)<br>W                 | 1                                      |
| B = breeding        | W = wintering       | P = passage                                 |  |

Source: Kopacki rit Nature Park Management Office

Criterion 7:

Floodplain area of Kopački rit supports 44 fish species, while almost 60 species is documented for the rivers Danube and Drava. This is the most significant spawning ground in the central and upper Danube area for all fish species of it, including *Acipenser ruthenus*, *Misgurnus fossilis*, *Aspius aspius*, *Carassius carassius*, *Cyprinus carpio*, *Rutilus pigus*, *Gymnocephalus schraetser*, *Zingel streber* and *Zingel zingel*, species that are listed on IUCN Red lists.

Criterion 8:

Floodplain area of the Kopački rit is outstandingly important source of food, spawning ground and nursery for Danube fish stocks. During 1945-1968 period, when commercial fishery was allowed in the whole floodplain, the average annual catch was 758 tonnes/year (Source: J. Mikuska 1979) indicating importance of the fish stocks.

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Pannonian (EEA Habitats Directive 92/43/EEC)

Pannonian province of the Euro siberian-north american region.

**b) biogeographic regionalisation scheme** (include reference citation):

Meusel et al. 1965-1992: Vergleichende Chronologie der Zentraleuropäischen Flora. I-III. Fisher Verlag, Jena.

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#### 16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Kopački rit is an inner delta wetland with distinct morphological and sedimentological characteristics (Source: World Heritage Nomination - IUCN technical evaluation 2000). It is situated in the central section of the Danube river course, at the confluence with one of its five major tributaries – Drava. It was formed during Pleistocene and Holocene by tectonic subsidence that turned Danube and Drava rivers into their present stream directions. The tectonic impacts of the last geological period – Quaternary – are still dominant in the formation of the area. Particularly significant are thick, quaternary sand deposits (in places over 100 m thick) (Source: Elektroprojekt 2003). The Drava rises in the Alps and flows through Italy, Austria, Slovenia, Hungary and Croatia at the time of snow melting; its flood waters reach the Danube before the Danube itself floods. The Drava waters, together with the Aljmas hill, act as a block when the Danube in turn floods (usually from March to May), with the result that the Danube overflows its banks towards the north and west of the confluence, flooding for a month whole area. Water starts to enter the floodplain when the Danube's water level at Apatin (Serbia) gauging station reaches 300 cm. During the year the water level fluctuates 5-7 m in average, while the maximum-recorded fluctuations are 9,40 m (Source: Croatian waters). Measured water levels and flows show decreasing trends, for intermediate levels around 1 cm/year and around 5 m<sup>3</sup>/sec, respectively.

The area has a typical continental climate with wide annual fluctuations of air temperatures and precipitation distribution, as well as four distinctive seasons. The average annual air temperature is 10,5°C (with max in July – up to 39 °C, and min in January – up to -29 °C) with increasing trend of 0,15 °C/100 years. Average annual precipitation is 687 mm with decreasing trend of 62 mm/100 years; minimum during wintertime; primary peak during May-June, secondary during October-November. North and northwest winds are dominant (source: Elektroprojekt 2003).

In the area fluvisols, gley, hypogley, amphigley, gitty and hydromeliorated soil types prevail (source: Elektroprojekt 2003).

Water quality within the recent floodplain depends on the Danube river's water quality (in average II category) while in the drainage system in the former floodplain areas water quality is affected with point and non-point sources of pollution (animal farms, settlements, run-off pollution from arable land) and decrease to III to IV category (source: Elektroprojekt 2003).

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#### 17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

With a length of 2,780 km (without its source rivers), the Danube is – after the Volga – the second longest river in Europe. Its catchment comprises 817,000 km<sup>2</sup> and covers the difference in altitude of 678 meters. The “upper” Danube stretches from source at Donaueschingen (confluence of Brigach and Breg rivers) up to the Raba near Győr (Hungary), the “middle” Danube includes the Pannonian plain up to the Iron Gate (Carpathian mountains), and the “lower” Danube ends at the Danube delta. It transports an average of 6,500 m<sup>3</sup> of water per second into the Black Sea. It passes through several climatic zones (atlantic, sub-mediterranean, and continental) that goes along with different faunal zones (Alpine, Pannonian, Balkan and Pontic faunal zones). Over 80% of the original floodplain area along the Danube and its main tributaries has been lost since the beginning of the 19<sup>th</sup> century. Passing through 10 countries and 8 more belonging to its catchment area, The Danube Basin is home to more than 83 million people. (Source: WWF 2002: Waterway transport on Europe's Lifeline, the Danube. Vienna)

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#### 18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The main hydrological values of the Kopacki rit wetlands are related to flow regulation and flood control, bio-chemical/physical purification of waters, ground water recharge, as well as sedimentation and nutrient retention capacity. Concerning production functions the Kopacki rit wetlands serve for timber, game and fish production, drinking water supply (ground water) and supply of water for irrigation and aquaculture (surface waters). Main carrying functions are related to shipping and navigation, as well as leisure and tourist activities.

## 19. Wetland Types

### a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

**Marine/coastal:** A • B • C • D • E • F • G • H • I • J • K • Zk(a)

**Inland:** L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

**Human-made:** 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

### b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

Tp+Ts+Xf Dominant, M, 1, O

The designated site also includes areas of non-wetland habitats – 2,257 ha of agricultural land and 44 ha of land reclaimed for construction (settlements, hunting lodges etc).

## 20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The site holds a range of habitats from pristine natural to highly developed by humans. Located within the floodplain of the Danube and Drava rivers, the site could be divided into two distinctive areas: 1) **recent floodplain** that extends from the river Danube to the dikes on the both sides of the river – still under influence of regular annual floods, from 1-15 km wide, this is the most important part of the site concerning its wetland functions and values and makes the core zone of the designated site. The area supports a mosaic of plant communities that are distributed according their tolerance to fluctuating water levels. From submerged plant communities, sedges, cattails, and reed beds to *Salix*, *Populus* and *Quercus* forests, together with numerous channels, oxbows and Lake Kopacko jezero, the area represents a mosaic of intact alluvial floodplain habitats. 2) **former floodplain** that extends from the dikes east and west right to the geological borders of the floodplain – the area forms a buffer zone around the core area. Affected by human influence through drainage scheme that was carried out in 19<sup>th</sup> and 20<sup>th</sup> century the hydrology and natural features of the area were modified, while the western parts were converted to arable land or reclaimed for construction. In some parts, stands of exotic American poplars and other non-native trees have been planted for timber exploitation, but it is planned to be removed. Artificial fishponds for the extensive commercial fish production were built, and animal farms were established.

## 21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

So far, the recorded number of vascular plants includes 426 species belonging to 81 families, that represents 10% of the total Croatian flora. The complete species list could be found on the official web site: [www.kopacki-rit.com](http://www.kopacki-rit.com). The most numerous are *Asteraceae* (54 species), *Poaceae* (39 species) *Lamiaceae* (29 species) and *Cyperaceae* (21 species). It should be noted that the present list of plant species is

predominantly based on the research carried out in the Special zoological reserve (Topić, J. 1989: Vegetation of the Special Zoological Reserve of Kopački rit; Hydrobiologia, 182: 149-160).

23 plant species are designated as rare, endangered or vulnerable in the Croatian Red List of Plants (Nikolić, T. & Topić, J. 2005: Red Book of vascular flora of Croatia; Ministry of Culture & State Institute for Nature Protection, Zagreb) The orchid *Cephalanthera damasonium* is protected in Croatia, while *Salvinia natans*, *Trapa natans* and *Typha minima* are on the international lists of protected plants.

Up to 42 different plant communities have been recorded within the site, most important being the wetland related communities. Of particular interest are plant communities threatened on the European scale, as alluvial forests with *Alnus glutinosa* and plant association *Salicion albae*, as well as riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *U. minor*, *Fraxinus angustifolia* along the great rivers.

The area contains several invasive plant species, the most important concerning their detrimental ecological impact are: *Amorpha fruticosa*, *Solidago gigantea*, *Ambrosia artemisiifolia*, *Asclepias syriaca*, *Acer negundo*, *Populus x canadensis*, and *Robinia pseudoacacia*.

## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

Aspects of Kopački rit's indigenous fauna have been extensively studied over many years with records going back to 17<sup>th</sup> century. Relevant species lists could be found on the Park's official web page ([www.kopacki-rit.com](http://www.kopacki-rit.com)). While to the study of vertebrate fauna was given larger significance, much work still has to be done in the research of invertebrates. Among various invertebrate groups, 39 nematode species, 62 *Rotatoria*, 16 species of leeches and 28 snail species have been recorded. Kopački rit contains an endemic subspecies of the Mollusca - *Unio tumidus kopaciensis*. Among insects, 19 species of mosquitoes (*Culicidae*), 25 species of horseflies (*Tabanidae*), 117 species of butterflies and moths (*Lepidoptera*), 115 species of *Coleptera* and 48 species of dragonflies (*Odonata*) were recorded. Butterfly *Papilio machaon* is legally protected by Croatian legislation and *Apatura metis* and *Lycena dispar* are listed under the Bern Convention. Out of dragonflies' family, three species (*Leucorrhinia pectoralis*, *Ophiogomphus cecilia* and *Gomphus flavipes*) are listed under the Bern Convention (source: Elektroprojekt, 2003).

The Kopački rit support diverse and important vertebrate fauna. It includes 55 fish, 11 amphibian, 10 reptile, 293 bird and 56 mammal species. Populations of mammals include viable population of otters *Lutra lutra*, wild cat *Felis silvestris*, and 12 species of bats *Chiroptera*. The European beaver *Castor fiber* and Jackal *Canis aureus* are recently colonised the area. The area supports important populations of *Emys orbicularis*, *Bombina orientalis* and *Hyla arborea* – species listed on the IUCN red lists.

## 23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

In historical times, the Danube's floodplain had a historical value for the local population as a source of building material (reed, wood), firewood and food (fish and game). Since Austro-Hungarian Monarchy the area was primarily used for hunting, timber production, fishery and agriculture. Local population maintained the social relation with the wetland through traditional fishing until early 80-ies of 20<sup>th</sup> century, with number of cultural heritage artefacts originating from those times. Nowadays, this cultural heritage is preserved through special events as e.g., Fisherman days in Kopacevo village. Villages, containing multinational and multi-confessional population, still maintain examples of traditional architecture and lifestyle. Several castles from the period of Austro-Hungarian Monarchy still exist in the area.

Current socio-economic values are based on forestry, hunting and agriculture. However, none of these activities, if operated on the current way, are viable on the long run and the area needs a new development concept that would be based on nature protection and ecologically sound tourism. The Management Office is the leading stakeholder in promoting these types of activities.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box  and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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**24. Land tenure/ownership:**

a) within the Ramsar site:

98% state owned land used by few major companies – Croatian forests (Hrvatske šume) – 70% of the area; Croatian waters (Hrvatske vode) – 6% of the area; agricultural combine Belje (recently privatised) – 6% of the area; less than 2% private, 14ha in the core area of the Park is owned by Public Enterprise “Kopački rit Nature Park” who is managing the area.

b) in the surrounding area:

Mixture of state owned and private land; privatisation of agricultural land, including abandoned fields covered with reed, is recently increasing.

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**25. Current land (including water) use:**

a) within the Ramsar site:

Habitat/nature conservation; big game hunting in nature park zone but not in special zoological reserve; forestry according to the relevant and approved plans, freshwater fishery-recreational and traditional, husbandry; water management, maintenance of the existing channel network for agricultural purposes; tourism, up to 30,000 visitors in 2007 in Nature Park but not in special zoological reserve;

b) in the surroundings/catchment:

Intensive hunting; intensive forestry, incl. plantation of allochthonous tree species in the past times; intensive husbandry (pig, cattle and poultry farms); intensive and extensive agriculture; water management and meliorations for agricultural purposes; significant growth of tourist activities.

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**26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

a) within the Ramsar site:

Despite being protected since 1967 by the Law on Nature Protection and in jurisdiction of Croatian nature protection authorities, Kopački rit Nature Park was included on the Ramsar list in January 1993. Intensive agriculture through pesticide use in the surrounding area had in some extent negative impact on the protected area. Being a state hunting ground for politicians and privileged, the area has been managed for hunting, but not within special zoological reserve area as a core zone of the Nature Park. Maintenance of big game populations (Red deers, Wild boars) above the natural capacity of the ecosystems prevented natural regeneration of forest ecosystems in some areas (Mikuska A., Mikuska J. & Mikuska T. 2003.).

Kopački rit has been listed on the Montreaux Record since 1993 because of Serbian occupation of the Baranja County, including Nature Park Kopački rit, that begun in 1991 and ended in 1997 by peaceful reintegration in to the Croatian national territory. The mayor consequences of the occupation include termination of all conservation measures during the mentioned period, destruction of most of the



infrastructure, limited wood cutting, the area was polluted with un-mapped minefields along the dikes, population of Red deers *Cervus elaphus* and Wild boars *Sus scrofa* were reduced to 1/4 of the pre-war times mostly because of illegal hunting, poaching.

Through the peaceful reintegration process in 1997, for its larger part (Danube's right bank) the site has been integrated and returned under the jurisdiction of Republic of Croatia. Croatian government founded independent state financed Public enterprise "Kopački rit Nature Park" for the purpose of managing and maintaining the site by the end of 1997.

However, circa 9000 ha of the Ramsar site along the left Danube's bank are still out of the jurisdiction of Republic of Croatia and lacking proper protection and management. This area is under strong pressure from intensive timber exploitation, carried out by Vojvodina Šume–Serbian forest company, with exhaustive clearcutting of old, native *Populus* and *Salix* stands and re-plantation of those areas with different allothonous tree plantations (*Populus x canadensis* etc.) and corn. During winter, illegal waterfowl hunting, organised by Serbian firms, takes place on the Danube River making serious disturbance to the waterfowl roosts.

Throughout the centuries, Kopački rit was one of the famous state hunting grounds for celebrities. Despite legal protection, the hunting did not stopped recently because the category of nature park can tolerate hunting activities in some extent in some parts for restricted period of time.

Extensive fish production on the existing Podunavlje fishponds recently ceased in 2006 despite the fact that this area is highly important for many water birds, particularly during droughts. The new owner of the fish ponds is not interested in fish production; Public enterprise "Park prirode Kopački rit" together the Nature Protection Directorate is trying to find the way to have the ponds filled with water through the year round.

Once providing the living for hundreds of families, indigenous traditional fishing and related cultural heritage, including knowledge of preparation and use of traditional tools, is almost extinct after the occupation of the Baranja County because of disappearing people interested in fishing activities caused by the low demand of the market. Illegal fishing has disturbed the area in some extent.

Triggered by the occupation during the period 1991-1997, emigration from the area had profound effect on the socio-economic situation of the settlements within the protected area and surrounding villages too. Only 78 people, mainly old ones, lives within the boundaries of the Ramsar site, and the demographic situation of surrounding villages is disturbing. Cultural heritage, including castles, churches and traditional houses are being abandoned and neglected.

b) in the surrounding area:

The list of main problems in the surrounding area includes: intensive agriculture, drainage and irrigation schemes, water pollution, forestry and hunting.

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## 27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The core zone of the Nature Park was protected by the Law on Nature protection in 1967 in the category of Special Zoological Reserve. It covers 7143 ha, an area of high level protection measures corresponds to IUCN category 1b on the south, and a wider, managed Nature Park with an area of 16,748 ha (corresponding to IUCN category V) proclaimed in 1976. Boundaries of the Ramsar site correspond with Park's boundaries. There are quite large area of floodplain wetlands extending north, south and west of Kopački rit but not yet included in the protected zone despite the fact that are making one ecological unit with the Nature Park. Nevertheless there is a plan to extend the protective regime on some of these parts too. The recent changes of the Park's boundaries occurred in 1999 when protected area had been enlarged from 17,700 to today 23,894 ha. During November 1997, Public enterprise "Park prirode Kopački rit" has been established by the government, in order to maintain the area for conservation purposes. Having 20 staff members and 10 seasonal workers, the Office is trying to manage the area properly. Despite certain shortcomings in manpower and finances, the Office is taking over his responsibilities in order to improve the situation concerning monitoring, protection and maintenance of the area.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?

Partly financed by the World Bank, a draft management plan was developed by the firm Elektroprojekt but not yet adopted and implemented. According to the procedure set by the Law on Nature Protection (Official gazette no. 70/2005), this draft should pass the public hearing process in order to be adopted by the Steering Committee of the Public Enterprise "Park prirode Kopački rit" with the assent of the competent ministry.

d) Describe any other current management practices:

Since the 1999 the Park's Management office is the leading force in the developing of the area, as well as promotion of sustainable use of natural resources. Funded through the Dutch PIN-MATRA programme, a wetland restoration project has been carried out during 2003-2005 period in the co-operation with The Hungarian National Park "Danube-Drava" and European Centre for Nature Conservation (ECNC) from The Netherlands/Hungary. The purpose of the project was the removal of man-made barriers on the natural channels in the Nature Park in order to restore the natural water flow and support flooding processes. In order to prevent vegetation succession and thus degradation of Podunavlje fishponds after the cessation of fish production, the Management office organised the re-filling the ponds with the water. Funded by the World Bank/GEF/and through national sources extensive restorations of main infrastructure took place in the area. The new Visitor centre has been built at the entrance of the Park, as well as restoration of Bio-ecological station has been done at Tikves castle complex. During 2006 a Space planning document has been adopted by Croatian parliament (Official gazette no. 24/2006) that would certainly aid the further protection and maintaining of the area.

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#### 28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

Initiatives for extension of the borders of exiting Special zoological reserve, as well as establishment of new reserves (ornithological, forest etc.) also exist.

The site has been listed on the preliminary list of Croatian Natura 2000 sites, and the proposal for the inclusion on the World Natural Heritage list has been submitted during 1999. Based on the natural criteria only, the site did not meet the requirements, but under the new and revised "mixed criteria" the site might be proposed in the near future.

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#### 29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Financed by the World Bank, the Bio-ecological station has been installed in the Tikves complex. Hosting laboratories, conference rooms, a library and accommodation capacity, the Station is dedicated to facilitate research and monitoring of the area.

The Management Office is carrying out limited monitoring, including populations of flagship species as White-tailed Eagle *Haliaeetus albicilla*, Black and White Storks *Ciconia nigra* and *C. ciconia*, colonial water birds etc. The Management Office also carries out regular mid-winter waterfowl counts. Several international colour-ringing schemes (White-tailed Eagles, Black and White Storks and Eurasian Spoonbills *Platalea leucorodia*) are carried out in the area.

Numbers of other research projects (covering hydrobiology, zoological surveys etc.) funded by the Ministry of Science are carried out in the area by the scientists from Osijek and Zagreb universities.

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#### 30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Financed by the World Bank, the new Visitor centre was built close to the border and entrance to Nature Park, near Kopacevo village in 2004. It includes education facility where information booklets could be obtained and educational activities performed. The Management Office established a education trail near the Visitor centre in 2005 and new similar trails are planned for 2006. Over 10,000 school children and other students are using this facility every year and taking part in the environmental education organised and performed by the Management Office. The Management Office started with the editing books that cover animal groups in the area (birds and amphibians are published, reptiles are in preparation), as well as developed its web page ([www.kopacki-rit.com](http://www.kopacki-rit.com)) that received World award for educational web page in 2005.

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### 31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The site is used for ecologically sound tourism that is organised by the Management office. Up to 30,000 visitors are taking organised tours in the area, including boat trip in the Special zoological reserve in 2007. The number of bird-watchers is increasing in the area. Other, less developed types of recreation includes sport angling at designated areas (up to 1500 anglers/year), walking and bicycling. The plans to develop bicycles routes along the site exist.

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### 32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Sectoral jurisdiction:

Ministry of culture, Nature Protection Directorate

Runjaninova 2

HR-10000 Zagreb, Croatia

Assistant minister: Zoran Šikić

e-mail: [zoran.sikic@min-kulture.hr](mailto:zoran.sikic@min-kulture.hr)

Territorial Jurisdiction:

Osječko-baranjska županija

Županijska ul. 2

HR-31000 Osijek, Croatia

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### 33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Public enterprise "Park prirode Kopački rit", Kopački rit Nature Park Management Office

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Web : [www.kopacki-rit.com](http://www.kopacki-rit.com)

Director: Biserka Vištica, prof.

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### 34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

1. Mihaljević, M. (Ed.) 1999. Kopački rit – pregled istraživanja i bibliografija /Kopacki rit – review of research and bibliography/; Zavod za znanstveni rad Osijek, Hrvatska akademija znanosti i umjetnosti, Zagreb-Osijek.
2. Prostorni plan Parka prirode Kopački rit /Nature Park Kopački rit Space Plan/ (2006) Ministry of Environmental Protection and Space Planning, Zagreb.
3. Prijedlog Plana upravljanja Parkom prirode Kopački rit / Nature Park Kopački rit Management Plan – draft/ (2003) Elektroprojekt, Zagreb.
4. [www.kopacki-rit.com](http://www.kopacki-rit.com) - contains full set of scientific references on the site

5. Mikuska, J. T. Mikuska & M. Romulić (2002) Vodič kroz biološku raznolikost Kopačkog rita. Knjiga 1 – Ptice /Guide to the Kopački rit biodiversity. Book 1 – Birds/; Matica Hrvatska Osijek.
  6. Mikuska, J. T. Mikuska, Mikuska A. & M. Romulić (2004) Vodič kroz biološku raznolikost Kopačkog rita. Knjiga 2 – Vodozemci /Guide to the Kopački rit biodiversity. Book 2 – Amphibia/; Filozofski fakultet, Osijek.
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