

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note 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. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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

Miloš Balla, Mgr. Andrea Šimková
State Nature Conservancy of the Slovak Republic,
M. R. Štefánika 206, SK - 075 01 Trebišov,
Tel.: +421-56-668 30 00, Fax: +421-56-668 30 01,
e-mails: balla@soprs.sk, simkova@soprs.sk

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Designation date

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Site Reference Number

Ing. Ivan Koubek, State Nature Conservancy of the Slovak Republic, Lazovná 10, SK - 97401 Banská Bystrica, Tel.: +421-48-471 36 24, Fax: +421-48-415 38 66, e-mail: koubek@soprs.sk

Mgr. Adriána Klindová, Ministry of Environment of the Slovak Republic, National Ramsar Focal Point, Nature and Landscape Protection Department, Nám. Ľ. Štúra 1, SK - 812 35 Bratislava, Tel.: +421-2-59562106, Fax: +421-2-59562533, e-mail: klindova.adriana@enviro.gov.sk

Dr. Ján Kadlecík, State Nature Conservancy of the Slovak Republic, Čachovský rad 7, SK - 038 61 Vrútky, Tel.: +421-43-428 45 03, Fax: +421-43-428 45 89, e-mail: kadlecik@soprs.sk

2. Date this sheet was completed/updated: August 18, 2004

3. Country: Slovak Republic

4. Name of the Ramsar site: Tisa River (in the Slovak: Tisa)

5. Map of site included:

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

a) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □

b) **digital (electronic) format** (optional): *yes* ✓ -or- *no* □

6. Geographical coordinates (latitude/longitude): 48° 22' 20'' - 48° 24' 40'' N
22° 05' 00'' - 22° 09' 20'' E

7. General location:

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

The site is located in the southern part of Eastern Slovakia, specifically in the subregion of the Východoslovenská nížina (in English: East-Slovakian Lowland, further as "Východoslovenská Lowland") on the borders with Ukraine and Hungary. It is located within the region of Košice, district of Trebišov and the nearest towns are Čierna nad Tisou (approx. 5000 inhabitants) 3 km N of the site, and Kráľovský Chlmec (approx. 8300 inhabitants) 8 km W of the site. It is in cadastrals of Veľké Trakany village and Malé Trakany village.

8. Elevation: (average and/or max. & min.)

9. Area: (in hectares)

min. 99 m, max. 107 m, average 103 m a. s. l.

734.5669 ha

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland. The site is situated in SE corner of Slovakia and Východoslovenská Lowland and it includes a 6 km section of the Tisa River in the territory of Slovakia and its floodplain in a transboundary position with the Ukraine and Hungary. There are parts of the floodplain which are permanently and seasonally flooded. The site has fragments of floodplain forests and shrubs, an oxbow lake and grasslands. It is a part of the prepared multilateral Ramsar site in the upper Tisa River basin, in the first stage as a bilateral (Hungarian-Slovak) Ramsar Site “Felső-Tisza (Upper Tisza) – Tisa (Tisa River)”.

11. Ramsar Criteria:

Circle or underline 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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. 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).

1) The site contains rare example of a natural and near-natural wetland types found within the Pannonian biogeographic region and it is important for the recharge of aquifers in the Tisa River basin. Survey of wetlands in Ramsar site Tisa River:

Palustrine system:

- wood formation: willow-poplar wood;
- shrub formation: willow shrub;
- grass-herbs formation: wet meadow and pasture; reed swamp; aquatic vegetation;
- ephemeral formation: bare bottom growth.

2) It supports vulnerable, endangered and critically endangered species and threatened ecological communities. It is important for the survival of some species protected by the Bern Convention, Bonn Convention or CITES, including some globally threatened and endemic species.

Species vulnerable in IUCN Red list: Corn crake (*Crex crex*); Geoffroy's bat (*Myotis emarginatus*); Sterlet (*Acipenser ruthenus*).

In Annex 1 of EU Habitat Directive:

91E0 Mixed ash-alder alluvial forests of temperate and boreal Europe (*Saliceto-Alnetum*),

3130 Oligotrophic to mesotrophic standing waters of plains to subalpine levels with vegetation belonging to *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*,

3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* – type vegetation.

3) It is a part of a larger wetland important for maintaining the biological diversity within the Pannonian biogeographic region, with characteristic plant and animal species.

Animal species important for maintaining the biological diversity:

Hyla arborea (specific for southern part of the Východoslovenská Lowland),

Pelobates fuscus (rare occurrence for southern part of the Východoslovenská Lowland).

Plant species important for maintaining the biological diversity:

Dichostylis micheliana (unique occurrence in Slovakia),

Leucanthemella serotina (specific for the southern part of the Východoslovenská Lowland),

Potamogeton gramineus (unique occurrence – one known territory with community of *Potametum graminei* Pass. 1964 in the Východoslovenská Lowland).

13. 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:

Region of pannonian vegetation (*Pannonicum*)

b) biogeographic regionalisation scheme (include reference citation): (according to Futák 1972 in Bertová 1984):

Region of pannonian vegetation (*Pannonicum*)

Division of eupannonian vegetation (*Eupannonicum*)

District of Východoslovenská nížina / Východoslovenská Lowland

14. 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.

Origin: Natural, partly man-made. Geology: The geological substrate is formed by rocks of the Upper Miocene up to Pliocene, and is represented mostly by alluvial sediments mottled with sand sediments from the last glacial period. The soil types are typical alluvial soils enriched by clays.

Geomorphology: The Tisa River has the character of a downstream, slow-flowing water body with an average outflow of $379 \text{ m}\cdot\text{s}^{-1}$ and the entire inundation space is periodically flooded. The riverbed is fairly deep (3 – 6 m) with a slope of 25 – 60°. The upper part of the Slovak section of the Tisa River (near Malé Trakany) has natural river bed, but the lower part (near Veľké Trakany) was changed by human interferences in the 1880s. The average width of the river is 150 – 200 m and the depth is app. 5 – 9 m with frequent hollowed banks along the river. The depth of the oxbow lake is approximately 2 m or more.

Hydrology: Mean annual discharge in the Slovak section of the river is $379 \text{ m}^3\cdot\text{s}^{-1}$ and during floods the whole inundation area is filled with water. The water quality in the Tisa River was good (category II.), but since February 2000 several heavy metals pollution spills have occurred originated in Romanian mines (Baia Mare) and caused damage in river ecology. There is high eutrophication in the oxbow as a result of pollution from nearby agricultural land (i.e. artificial fertilizers, pesticides, etc.). Climate: The area has sub-continental climate (hot summer and cold winter) with average annual temperature 9,3 °C. Average air temperature in January is varies between -3 and -5 °C, in July between 19,5 and 20,5 °C. Annual rainfall is 550 mm.

15. Physical features of the catchment area:

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

Geology: The geological substrate is formed by rocks of the Upper Miocene up to Pliocene, and is represented by gray and varied clays, silts, sands, gravels, lignite, freshwater limestones and tuffite horizons.

Geomorphological features: The catchment area belongs to lowlands. Type of relief is plain (not dissected plains) with vertical difference lesser than 30 m. The Tisa River has the character of a downstream, slow-flowing water body and the entire inundation space is periodically flooded.

Soil types: The soil types are fluvisols; gleyic entric fluvisols and vertic fluvisols. Soil texture is clayey, clayey-loamy, loamy, and sandy-loamy.

Land use: agriculture (culture crop plants, meadows mowing, stock raising); recreational use, sport fishing.

Climate: The catchment area belongs to zone of middle latitudes – Atlantic-continental region, to warm, dry climatic region with cool winter.

16. Hydrological values:

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

Groundwater recharge, natural control of flooding as a part of a larger floodplain in four countries, self-purification processes.

17. 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.

P, M, Tp, Ts, W, Xf, 4, 7, 9

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Potential vegetation of the floodplain in its lowest parts is represented by floodplain forests and scrubs of alliance *Salicion albae* and *Salicion triandrae* with association *Salici-Populetum* and *Salicetum triandrae*. Important are communities of slow flowing and standing waters in broader vicinity of the site, mainly of alliance *Nymphaeion albae* and association *Trapaetum natantis*. Special position has the community of *Polygonum amphibium* in mesotrophic and oligotrophic water, and community of *Potamogeton gramineus*. Association *Ceratophylletum demersi* with *Myriophyllum* sp. and *Potamogeton* sp. joins these communities in deeper water. Association *Hydrochari-Stratiotetum* (alliance *Hydrocharition*) is not widespread and it indicates high level of overgrowing by the macrophytes and advanced stage of sedimentation. Communities of alliance *Lemnion minoris* occupy shallow water and these are connected with communities of *Magnocaricion elatae*, *Phragmitum communis* and *Hydrocharition*. Characteristic is the association *Lemnetum minoris*. High degree of eutrophication indicates occurrence of rare association *Lemno-Utricularietum vulgaris* (alliance *Utricularion vulgaris*). Other plant communities are alliances *Magnopotamion* (association *Elodeetum canadensis*), *Batrachion aquatilis* and *Litorellion uniflorae*, and very important association *Eleocharidetum acicularis*. Human influence and increased concentration of nitrates indicates association *Lythro-Pulicarietum vulgaris* (alliance *Elatino-Eleocharition*). Richer but not stable is the association *Dichostylo micheliana-Gnaphalietum uliginosi*. Very similar stands are occupied by ass. *Cypero fuscii-Juncetum bufonii*. Many associations from the class *Phragmiti-Magnocaricetea* are connected with permanent water level. Association *Schoenoplectetum lacustris* occupies deeper water. In sections with shallower water are developed associations: *Typhetum angustifoliae* and *Phragmitetum communis*. Wide-spread is the association *Glycerietum maximae* with *Lysimachia vulgaris*, *Rumex hydrolapathum*, *Iris pseudacorus* and *Carex* sp. Alliance *Oenanthion aquatica* is represented with association *Glycerio fluitantis-Oenanthetum aquaticae*, alliance *Magnocaricion elatae* is represented with the association *Caricetum elatae*. Associations *Ranunculetum scelerati* and *Bidenti-Polygonetum hydropiperis* represent alliance *Bidention tripartitae*.

Some sites are planted with euro-american poplars. In some sites (riparian stands) there grow invasive species of plants (*Amorpha fruticosa*, *Echynocystis lobata*, *Ambrosia artemisifolia*, *Stenactis annua*). In the river there are spread some allochthonous species of fish.

19. Noteworthy flora:

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. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

- according to the Slovak Red List:

CR (critically endangered): *Elatine alsinastrum*, *Lindernia procumbens*, *Ranunculus lateriflorus*; EN (endangered): *Allium angulosum*, *Bupleurum tenuissimum*, *Cardamine parviflora*, *Stratiotes aloides*;

VU (vulnerable): *Butomus umbellatus*, *Nuphar lutea*, *Utricularia vulgaris*; other important species: *Lycopus exaltatus*, *Salvinia natans*, *Glyceria fluitans*, *G. maxima*, *Hydrocharis morsus-ranae*, etc.

20. 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.*

Invertebrate: **Insecta:** *Ephemera vulgata*, *Cloen dipterum*, *Isogerus nubecula*, *Isoperla obscura*;
Vertebrate: **Osteichthyes:** *Rutilus pigus*, *Abramis sapa*, *Pelecus cultratus*; **Amphibia:** *Pelobates fuscus*, *Bombina bombina*, *Hyla arborea*; **Reptilia:** *Lacerta agilis*, *Lacerta vivipara pannonica*, *Natrix natrix*; **Aves:** breeding: *Acrocephalus palustris*, *Alauda arvensis*, *Anthus trivialis*, *Asio otus*, *Circus aeruginosus* (LR), *Coturnix coturnix*, *Cuculus canorus*, *Dryocopus martius*, *Falco subbuteo*, *Falco tinnunculus*, *Hippolais icterina*, *Locustella luscinioides* (LR), *Acrocephalus schoenobaenus*, *Aegithalos caudatus*, *Alcedo atthis* (LR), *Buteo buteo*, *Certhia brachydactyla*, *Dendrocopos major*, *Dendrocopos minor*, *Emberiza calandra*, *Emberiza schoeniclus*, *Gallinula chloropus*, *Jynx torquilla*, *Locustella fluviatilis*, *Locustella naevia*, *Luscinia megarhynchos*, *Motacilla flava* (LR), *Muscicapa striata*, *Oriolus oriolus*, *Perdix perdix*, *Picus viridis*, *Podiceps cristatus*, *Remiz pendulinus*, *Saxicola rubetra* (LR), *Streptopelia turtur*, *Sylvia borin*, *Sylvia communis*, *Tachybaptus ruficollis*, *Troglodytes troglodytes*, *Turdus philomelos*, *Merops apiaster* (LR), *Riparia riparia*, *Saxicola torquata*, *Strix aluco*, *Sylvia nisoria*, *Sylvia curruca*, *Turdus pilaris*, *Vanellus vanellus* (LR); other species: *Accipiter gentilis* (LR), *Acrocephalus scirpaceus*, *Actitis hypoleucos* (LR), *Anas strepera*, *Ardea cinerea*, *Aythya ferina*, *Botaurus stellaris* (VU), *Charadrius dubius*, *Ciconia ciconia* (LR), *Ciconia nigra* (LR), *Egretta garzetta* (LR), *Gallinago gallinago* (VU), *Ixobrychus minutus* (VU), *Lanius minor* (VU), *Accipiter nisus*, *Anas querquedula* (LR), *Athene noctua*, *Circus cyaneus*, *Egretta alba*, *Nycticorax nycticorax* (VU), *Phalacrocorax carbo*, *Phalacrocorax trochillus*, *Serinus serinus*, *Tringa ochropus*, *Turdus viscivorus*, *Phoenicurus ochruros*, *Picus canus*, *Regulus regulus*, *Tringa glareola*, *Tringa totanus* (VU); **Mammalia:** *Neomys fodiens*, *Crocodyrus leucodon*, *C. suaveolens*, *Pipistrellus pipistrellus*, *Nyctalus noctula*, *Mustela nivalis*, *Mustela erminea*, *Martes martes*.

21. Social and 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.

The site is important for landscape values, nature conservation, for legal fishing, regulated recreation and tourism, hunting, pastoral agriculture, biological research, etc.

22. Land tenure/ownership:

- (a) within the Ramsar site: Most of the area belongs to the state (water bodies), agricultural land is owned by the private owners and local communities.
 - (b) in the surrounding area: Similar land tenure. Intensively used land and settlements are separated from the main site with wharfs.
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23. Current land (including water) use:

- (a) within the Ramsar site: The main economical activity in this area is extensive agricultural production, hay making and pasture, greengrocery and orchards cultivation. A portion of this land was ameliorated. Lowland forests are not very well maintained.
 - (b) in the surroundings/catchment: Intensive agricultural production.
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24. 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: Illegal dumps, unregulated recreation without infrastructure, illegal cutting of trees and the illegal catching of fish. The most negative factors affecting the site in the near past were the ecological accidents in Romania. The water quality in the Tisa River was good (category II.), but since February 2000 several heavy metals pollution spills have occurred originated in Romanian mines (Baia Mare) and have caused damage in river ecology. Interfering

with the trophic chains, these accidents caused hard intoxication of the Tisa River with potassium cyanide and heavy metals and endangered life in the river and in the groundwater.

There is high eutrophication in the oxbow as a result of pollution from nearby agricultural land (i.e. artificial fertilizers, pesticides, etc.).

- (b) in the surrounding area: Intensification of agriculture, pollution of the tributaries with toxic substances.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

On the base of the resolution of county office in Trebišov in 1975, the area was listed among the sites with a certain level of protection (category „C“) with perspective to designate the site as protected area. As a result during 1991-1996 some provisions were done to remove buildings which were built without permission from the site, recreational activities were limited. In 1998-1999 international projects on coordinated protection and management of this transboundary site were implemented. In 1999-2000 international negotiations took place in the aim of protection of the area and prevention of the river from other ecological disasters. Water treatment plant in Čierna nad Tisou took measures for improvement of its function.

26. Conservation measures proposed but not yet implemented:

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

First background materials for development of the proposal of Protected site Stará Tisa according to the Act on Nature and Landscape Protection were done. To increase protection of the site, it is necessary to regulate recreation during the summer (there is no infrastructure), prevent the illegal cutting of trees, dumping and to change present land use with an emphasis on support of the meadows, pastures and orchard.

27. Current scientific research and facilities:

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

There have been some studies done on aquatic and wetland flora – Dr. Š. Husák, Dr. Adamec (Czech Academy of Science, Třeboň), Dr. H. O'ahelová (Botanical institute of the Slovak Academy of Science, Bratislava); territorial and species protection – Dr. V. Stano (Slovak Environmental Agency*, Košice); rare and endangered species of flora – J. Bogoly (Geographical Museum Kráľovský Chlmec); meadows and weed associations – Dr. S. Mochnacký (University of P. J. Šafárik, Košice).

Research of the upper Tisa River was made also by international team of experts from relevant countries in 1996-1998 (HAMAR, SÁRKÁNY-KIS (eds) 1999).

Research of bird species of Východoslovenská Lowland in 1995-2001 – M. Balla (Slovak Environmental Agency *, Trebišov)

Research of invasive species of plants of Tisa River catchment in 1999 – Mgr. A. Ruščančinová – Šimková (Slovak Environmental Agency*, Trebišov)

*present State Nature Conservancy of the Slovak Republic, former part of Slovak Environmental Agency

28. Current conservation education:

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

This region does not have a special focus on environmental education because of its remoteness, but throughout the area, a well organized campaign for the protection of wetlands has begun.

29. Current recreation and tourism:

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

The site is suitable for summer tourism because the river bank is sandy and it has much shade from the trees. The river was used for fishing before its contamination.

30. Jurisdiction:

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

Ministry of the Environment of the Slovak Republic (Department of Nature and Landscape Protection), Regional Office of the Environment in Košice, District Office of the Environment in Trebišov, SVP - Slovak Water Management Company, OZ Košice in Košice.

31. 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.

Nature conservation:

State Nature Conservancy of the Slovak Republic, Administration of Protected Landscape Area Latorica, M. R. Štefánika 206, SK - 075 01 Trebišov, Tel./Fax: +421-56-668 30 00/668 30 01, e-mail:

porhincakova@sopsr.sk

Water management:

SVP – Slovak Water Management Company, OZ Košice, Ďumbierska 14, SK – 040 01 Košice, Tel.: +421-55-6333711, e-mail: pbhroz@isternet.sk

32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

Atlas krajiny Slovenskej republiky. 2002. 1. vyd., Bratislava: Ministerstvo životného prostredia SR; Banská Bystrica: Slovenská agentúra životného prostredia.

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HRTAN, E., 1994: Fauna okresu Trebišov. SZOPK, Trebišov, 57 pp.

SESZTÁK, J. et al., 1996: Združenie pre reguláciu Tisy v Medzibodroží. Košice.

ŠPÁNIKOVÁ, A. et al., 1985: Vegetačné pomery južnej časti Východoslovenskej nížiny. Acta Botanica Slovaca, Ser. A, 8. VEDA, Bratislava.

VOSKÁR, J., RENČÍK, J., 1985: IX. Východoslovenský tábor ochrancov prírody, Borša, 1985 – Prehľad odborných výsledkov, Trebišov.

Please return to: **Ramsar Convention Bureau, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org