

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties

Note: It is important that you read the accompanying Explanatory Note and Guidelines document before completing this form.

1. **Date this sheet was completed/updated:** 28th March 2002
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2. **Country:** Slovakia
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3. **Name of wetland:** Latorica
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4. **Geographical coordinates:** 48° 28' N, 022° 00' E
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5. **Elevation:** (average and/or maximum and minimum) 100 m (99 – 103 m)
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6. **Area:** (in hectares) 4 404,7 ha (refined estimation)
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7. **Overview:** (general summary, in two or three sentences, of the wetland's principal characteristics)

The site includes a part of the floodplain area of the Latorica River defined by levees, from the Ukrainian borders to the confluence with the Laborec River in the Latorica Protected Landscape Area, in S part of the East Slovakian Lowland. It is characterized by a well-developed system of branches, seasonally inundated habitats with adjacent floodplain forests and grasslands. Threatened and rare aquatic and swamp biocoenoses of lowland, flooded habitats are represented. Several nature reserves are included in the site.

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8. **Wetland Type:** (please circle the applicable codes for wetland types as listed in Annex I of the Explanatory Note and Guidelines document)

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)

Please now rank these wetland types by listing them from the most to the least dominant: P, Tp, M, Xf, O, 4, Ts, W, 9, 7

9. **Ramsar Criteria:** (please circle the applicable criteria; see point 12 below)

1 **2** **3** **4** 5 6 7 **8**

Please specify the most significant criterion applicable to this site: 1

10. **Map of site included?** Please tick **YES** --or-- **NO**

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits.)

11. **Name and address of the compiler of this form:**

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Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. **Justification of the criteria selected under point 9, on previous page.** (Please refer to Annex II in the *Explanatory Note and Guidelines* document).

1 – a system of river branches, oxbow lakes and various rare wetland habitats on the Slovak - Ukraine - Hungarian frontier, it is a representative example of the natural and near-natural types of wetlands in the Pannonian region.

2 - Latorica site is inhabited by 17 internationally threatened fauna species (6 Vulnerable, 7 Lower Risk & 4 Data Deficient species) eg. *Emys orbicularis*, *Crex crex* etc.; 30 nationally threatened flora species (6 Critically Endangered, 15 Endangered, 8 Vulnerable & 1 Data Deficient species) eg. *Elatine alsinastrum*, *Fritillaria meleagris*, *Leucanthemella serotina*, *Lindernia procumbens*, *Orchis elegans*, *Succisella inflexa* etc. and threatened communities of unions *Magnopotamion*, *Hydrocharition*, *Salicion albae*, *Ulmenion minoris* & *Carpinion betuli* etc.

3 – Latorica site supports populations of the following species important for maintaining the biological diversity of the Pannonian and Carpathian regions: *Armoracia macrocarpa*, *Leucojum vernum* subsp. *carpathicum*, *Oenanthe silaifolia* subsp. *hungarica* etc.

4 – Latorica is a biological corridor of international importance for migration of significant numbers of rare, vulnerable and/or endangered animal species, for example *Aquila pomarina*, *Botaurus stellaris*, *Ciconia ciconia*, *C. nigra*, *Circus aeruginosus*, *Circus cyaneus*, *C. pygargus*, *Crex crex*, *L. minor*, *Merops apiaster*, *Egretta alba*, *E. garzetta*, *Falco cherrug*, *F. vespertinus*, *Grus grus*, *Haliaeetus albicilla* etc.

8 – Latorica river is important spawning ground and nursery for indigenous freshwater fish species: *Acipenser ruthenus*, *Aspius aspius*, *Gymnocephalus schraetzer*, *Pelecus cultratus*, *Zingel zingel*, *Z. streber*, *Umbra krameri* etc.

13. **General location:** (include the nearest large town and its administrative region)

county: Košice;

districts: Trebišov and Michalovce;

cadasters of villages: Bačka, Beša, Bol', Bořany, Čičarovce, Čierna, Kapoňa, Kapušianske Kl'ačany, Leles, Oborín, Poľany, Ptrukša, Solňička, Veľké Kapušany, Veľké Slemence, Zatín;

14. Physical features: (e.g. geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)

Origin: natural, partly artificial. Geological features: Site has been created on gravel-sandy layers, those were clogged by marl, mica and sandy-clay deposits in the upper Miocene and Pliocene. Prevailing sediments are the remnants of old overgrown oxbow lakes and old meandering river beds.

Geomorphological features: Site has a typical character of an alluvial plain with a minimal downslope, with a system of natural, alluvial habitats (functional river branches and oxbow lakes, depressions, swamps etc.) as well as artificial channels. Soils: Predominating heavy and extremely heavy soils with low granularity, slightly acidic with very high or high absorption capacity and high humus content. Soils on sandy dunes and deposits differ significantly from the previously mentioned. They are characterised by high granularity, low absorption capacity, neutral soil reaction and substantially lower humus content. Their extent is rather small. Predominant soil types, according to FAO classification (1970, ex Hraško et al. 1991), are eutric fluvisols, eutric gleysols and fluvio-eutric gleysols. Hydrological features: Latorica is a transboundary river that originates in the Eastern Carpathians in the Ukraine. Hydrological regime of the site is determined by a predominating flysch substrate and feathery-shaped catchment of the Latorica and Laborec rivers. Due to the low permeability of the East-Carpathian flysch, and the shallow circulation of groundwater, precipitation results in an accelerated outflow. Mean annual outflow of rainfall from this area is about 50 %, but could increase to 80 % during extreme flows. High flows occur mainly during spring snowmelt, and also after rich short-term rains. Mean annual discharge of the Latorica river is 33,7 m³.s⁻¹. During floods this can be increased up to 23-times. Latorica has a character of a typical lowland river that has created a network of meanders and oxbow lakes. Water quality: Main stream of the Latorica river throughout the Ramsar site has been assessed as highly polluted for many years, with a high concentration of insoluble substances, nitrites, phenols and coliform bacteria. In the surface water there are also concentrations of heavy metals- mainly Cd, Hg a Zn have been recorded. The river is endangered and irregularly stressed by petrol disasters in the Ukraine. Climate: Site is situated in the warmest and driest part of the country with a predominantly subcontinental climate. For this area cold winters (average temperature in January is -3 to -5 °C) and hot summers with an average temperature in July 19.5 to 20.5 °C and more than 50 summer days (days with a temperature higher than 25 °C). Annual precipitation in the area is between 530 to 650 mm. Due to the flat relief and low rainfall, the specific outflow of the area is lower than 1.5 l/s/km².

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.)

Hydrological importance of the site is determined by the Latorica river and its discharges. Its system of branches and oxbow lakes is important for flood control and natural water quality improvement.

16. Ecological features: (main habitats and vegetation types)

Most of the best preserved swamp and water communities are located along the Latorica river within the area bordered by levees. In the southern part, there are very valuable wet meadow communities with extensive swamp depressions inhabited by specific flora and fauna. The occurrence of all wetland habitats depends on periodical floods before and during the vegetation season. Most important and valuable climax communities are soft- and hard-wood floodplain forests. In the direct vicinity of the river and its branches are distributed willow-poplar floodplain forests (*Salicion albae*, *S. triandrae*). Fragments

of ash-elm-oak floodplain forests (*Ulmion minoris*) with the richest species composition, and oak-hornbeam forests with pannonian oak (*Carpinus betuli*) are preserved. Poplar plantations and *Robinia pseudoacacia* woods are sparsely distributed. Non-forest habitats are represented by reed and tall-sedge communities (*Phragmiti-Magnocaricetea*) and associations *Schoenoplectum lacustris*, *Typhetum angustifoliae*, *Sparganietum erecti*, *Glycerietum maximae*, *Eleocharitetum palustris*, *Caricetum distichae*, *Caricetum gracilis*, *Caricetum vulpinae*, *Phalaridetum arundinacea*, *Caricetum ripario-acutiformis*, *Scirpetum sylvatici-Agrostietum stoloniferae* etc. Part of the site is made up of artificial wetlands (gravel and soil pits). The river was regulated in 1954-1965. From the group of water and swamp plant communities there are presented associations *Trapetum natantis*, *Nupharo lutei-Nymphaeetum albae*, *Ceratophylletum demersi* (union *Nymphaeion albae*). One of the most important, characteristic and valuable communities is the association *Hydrocharito-Stratiotetum*. Others include unions *Lemnion minoris*, *Utricularion vulgaris*, *Magnopotamion*, *Parvopotamion*, *Batrachion aquatilis*, *Oenanthion aquaticae*, *Sparganio-glycerion fluitans*, *Magnocaricion elatae* etc.

Some non-native species of fish were introduced into the Latorica watershed (*Lepomis gibbosus*, *Ictalurus nebulosus*). Some invasive plant species have been recorded, such as *Stenactis annua*, *Solidago gigantea*, *Asclepias syriaca*, *Helianthus tuberosus*, *Heracleum mantegazzianum*.

17. **Noteworthy flora:** (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.)

Site is inhabited by several plant species considered threatened according to national Red List: CR: *Elatine alsinastrum*, *Fritillaria meleagris*, *Leucanthemella serotina*, *Lindernia procumbens*, *Orchis elegans*, *Succisella inflexa*; EN: *Allium angulosum*, *Armoracia macrocarpa* (Pannonian subendemite), *Bupleurum tenuissimum*, *Cardamine parviflora*, *Gentiana pneumonanthe*, *Gratiola officinalis*, *Leucojum vernum* subsp. *carpaticum* (subendemite species of Eastern Carpathians), *Marsilea quadrifolia*, *Oenanthe silaifolia* subsp. *hungarica*, *Ophioglossum vulgatum*, *Senecio erucifolius* subsp. *tenuifolius*, *S. paludosus*, *Stratiotes aloides*, *Symphytum tanaicense*, *Thalictrum lucidum*; VU: *Cardamine dentata*, *Cephalanthera longifolia*, *Gagea spathacea*, *Ranunculus lingua*, *Thalictrum flavum*, *Tithymalus lucidus*, *Utricularia vulgaris*, *Viola elatior*; DD: *Utricularia australis*;

The following plant communities occurring in the site are considered rare or endangered in Slovakia, mainly due to eutrophication, river adaptations, habitat degradation or are occupying artificial habitats while losing the natural ones: *Trapetum natantis*, *Nymphaeetum albo-luteae nymphaeetosum*, *Nymphaeetum albo-luteae nupharetosum*, *Hydrochari-Stratiotetum*, *Lemno-Utricularietum vulgaris*, *Salvinio-Spirodeletum polyrrhizae*, *Ricciotum fluitantis*, *Polygonetum amphibii*, *Potametum lutencis*, *Najadetum marinae*, *Najadetum marinae najadetosum minoris*, *Eleocharito acicularis-Marsileetum quadrifoliae*, *Leersietum oryzoidis*, *Hottonietum palustris*, *Cyperetum micheliani*, *Caricetum elatae*, *Cypero fusci-Juncetum bufonii*, *Potametum crispum*, *Caricetum ripariae* etc.

18. **Noteworthy fauna:** (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

The site belongs to the northern margin of the Pannonian steppe region, East-Slovakian territory and the Tisa River Lowland district. Due to the geographical location of the site within the Pannonian lowland, but with relatively close contact with Carpathians, mediterranean and boreomontane elements occur there.

Several important water invertebrates (*Evertebrata*) e.g. planktons have been recorded: more than 60 species of *Rotatoria*, 20 species of *Copepoda* and 40 species of *Cladocera*. Rare *Crustacea* include endemic species *Proasellus pribenicensis* and endangered species *Hemidiaptomus hungaricus*, *Triops*

cancriformis, *Lepidurus apus* etc. Inventory of several groups of insects (**Insecta**) and molluscs (**Mollusca**) was also completed: *Ephemeroptera* (for example *Baetis fuscatus*, *Caenis horaria*, *C. macrura*, *C. robusta*, *Palingenia fuliginosa*, *Potamanthus luteus*), *Odonata*, *Diptera*, *Mollusca* (for example *Unio crassus* (LR:nt)).

Vertebrata: noteworthy species (conservation status according to 1996 IUCN Red List is given in the brackets) are **Osteichthyes:** *Acipenser ruthenus* (VU), *Aspius aspius* (DD), *Carassius carassius* (LR:nt), *Gobio albipinnatus* (DD), *Leucaspis delineatus*, *Pelecus cultratus* (DD), *Cobitis taenia*, *Zingel zingel* (VU), *Z. streber* (VU), *Gymnocephalus schraetzer* (VU), *G. baloni* (DD) and *Umbra krameri* (VU); **Amphibia:** *Triturus dobrogicus*, *T. vulgaris*, *Hyla arborea* (LR:nt), *Pelobates fuscus*, *Bufo bufo*, *B. viridis*, *Rana arvalis*, *R. dalmatina*, *R. ridibunda*, *R. lessonae*, *R. esculenta*, *R. temporaria*, *Bombina bombina* (LR:cd); **Reptilia:** *Lacerta vivipara*, *Natrix natrix*, *Emys orbicularis* (LR:nt), *Anguis fragilis*; **Aves:** breeding species: *Accipiter gentilis*, *Acrocephalus arundinaceus*, *A. palustris*, *A. schoenobaenus*, *A. scirpaceus*, *Aegithalos caudatus*, *Alcedo atthis*, *Anthus campestris*, *Aquila pomarina*, *Asio otus*, *Botaurus stellaris*, *Buteo buteo*, *Certhia brachydactyla*, *C. familiaris*, *Ciconia ciconia*, *C. nigra*, *Circus aeruginosus*, *Crex crex* (VU), *Dendrocopos major*, *D. medius*, *D. minor*, *Dryocopus martius*, *Emberiza calandra*, *Falco subbuteo*, *Falco tinnunculus*, *Gallinago gallinago*, *Gallinula chloropus*, *Hippolais icterina*, *Ixobrychus minutus*, *Jynx torquilla*, *Lanius collurio*, *L. minor*, *Locustella fluviatilis*, *L. luscinoides*, *L. naevia*, *Luscinia luscinia*, *Merops apiaster*, *Oriolus oriolus*, *Pernis apivorus*, *Porzana parva*, *P. porzana*, *Rallus aquaticus*, *Remiz pendulinus*, *Saxicola rubetra*, *S. torquata*, *Strix aluco*, *Sylvia nisoria*, *Tachybaptus ruficollis*, *Tringa totanus*, *Upupa epops*, *Vanellus vanellus*. Other important species are: *Actitis hypoleucos*, *Anas acuta*, *A. clypeata*, *Anas crecca*, *A. querquedula*, *Ardea cinerea*, *A. purpurea*, *Ardeola ralloides*, *Asio flammeus*, *Aythya ferina*, *A. fuligula*, *Bucephala clangula*, *Buteo lagopus*, *Charadrius dubius*, *Circus cyaneus*, *C. pygargus*, *Egretta alba*, *E. garzetta*, *Falco cherrug*, *F. vespertinus*, *Grus grus*, *Haliaeetus albicilla* (LR:nt), *Chlidonias niger*, *Ch. hybridus*, *Limosa limosa*, *Milvus migrans*, *Nycticorax nycticorax*, *Pandion haliaetus*, *Phalacrocorax carbo*, *Philomachus pugnax*, *Platalea leucorodia*, *Tringa glareola*, *T. ochropus*; **Mammalia:** *Alces alces*, *Apodemus agrarius*, *Apodemus flavicollis*, *Apodemus microps*, *Apodemus sylvaticus*, *Arvicola terrestris*, *Clethrionomys glareolus*, *Lutra lutra*, *Micromys minutus*, *Muscardinius avellanarius* (LR:nt), *Pitymys subterraneus*, *Sorex araneus*, *Sorex minutus*.

19. **Social and cultural values:** (e.g., fisheries production, forestry, religious importance, archaeological site, etc.)

The site is used for angling, forestry, livestock pasture, occasional weekend hiking (trips) of local people.

20. **Land tenure/ownership of:** (a) site (b) surrounding area

a) 30 % state ownership, 70 % private ownership;

water bodies are in state ownership, forests are managed mainly by owner associations, ownership of pasture land and meadows is not clarified, and these are managed by non-state organisations (agricultural cooperatives).

b) 20 % in state ownership, 80 % in private ownership.

21. **Current land use:** (a) site (b) surroundings/catchment

a) Forestry – forested land represents 32.8 % of the total area, prevailing types are economic forests with restricted management within the protected sites;

fishing, hunting; hay-making and cattle pasturing – grasslands cover 36,4 % of the area.

b) In the eastern part of the site the land is used for agricultural purposes. In the northern part the predominant management consists of hay-making, pasturing and forestry. There are some settlements in the surroundings of the site with number of inhabitants not exceeding 1000 people.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects: (a) at the site (b) around the site

In the 19th century extensive deforestation for the extension of pastureland for cattle and railway construction in the vicinity of the Ramsar site took place. Forest degradation continued in the 20th century and up till now the economic interest is the leading factor for the forestry in the area. Mainly in the second half of the 20th century the planting of non-native cultivars of poplars was popular. Oaks, ashes, maples etc were planted in limited amounts. In the 1950's and early 1960's of the 20th century, regulative measures on the river were implemented. Result of these activities was an artificial more or less straight riverbed surrounded by a number of disconnected branches. Most of these branches are disconnected from the main channel in the upper reaches, but in the lower reaches the connection is still working. As a result of the continuous erosion caused by the main river channel, in many of the branches, the water level, during most days of the year is higher than in the main channel. Equalization of the water levels is impeded by deposits of mud and vegetation, which have been created in the mouths of the branches. The site is bi-sected by a frequented road, polluting the site obstructing the migration of animals. Transportation routes and settlements are the source areas of non-native and invasive species, endangering the diversity of native communities. A risk factor is the unlimited pasturing of cattle causing the devastation of bank-side vegetation at watering places, and also water eutrophication. Negative factor is also unregulated local fishstock poaching and hunting.

b) Heat-power plant, Vojany, located N of the site causes air pollution and thermic pollution of the rivers. Latorica is already polluted in the Ukraine. The major part of the Latorica watershed is situated within the territory of Ukraine (2900 km² from the 3140 km² - total area of the catchment). Industry, agriculture and settlements are causing river pollution by heavy metals, phenols, organic substances and nutrients. A real risk of petrol pollution exists, as the river and its major tributaries in the Ukraine are crossed several times by petrol pipelines (repeated accidents in 1992-1995).

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made: management practices; whether an officially approved management plan exists and whether it has been implemented)

The Ramsar site is a part of the Protected Landscape Area Latorica (15 620.4 ha), designated in 1990. Further protected sites are Nature Reserve (NR) Zátínský luh (66.06 ha, protected since 1930), National Nature Reserve (NNR) Latorický luh I (40.6 ha), NNR Latorický luh II (15.1 ha), which have been protected since 1967. The site is managed by the Administration of PLA Latorica situated in the town of Trebišov. The site has been included in the Regional Territorial System of Ecological Stability of Trebišov district (R-TSES) as a biological corridor of supra-regional importance. A network of biocentres has also been set up within the territory of the Ramsar site. The site is also part of the broader Important Bird Area 031 River Latorica Flood-plain (KAŇUCH 2000).

24. Conservation measures proposed but not yet implemented: (e.g, management plan in preparation; officially proposed as a protected area, etc.)

In the Regional Territorial System of Ecological Stability of the Trebišov district, the protection of other sites has been proposed for their values and function of biodiversity maintenance (Dravý klin, a site in the cadaster of the village, Boťany, Mokrad', a site in the cadaster of the village of Ptrukša – a complex

of floodplain forests and a network of old river meanders from the original river bed. In 1995 the draft Management Plan of the Ramsar site was compiled, which currently needs to be re-evaluated. The Administration of the PLA Latorica has developed and is pushing forward the approval of the proposal for the designation of the forests within the Ramsar site to the category of 'forests of special function' (forests which are for the maintenance of their non-productive functions, no economic function). The site has been included into the project of Wetlands International „Transboundary cooperation in the Upper Tisa region“.

25. Current scientific research and facilities: (e.g., details of current projects; existence of field station, etc.)

Long-term research of the site is being implemented by the Zoological Institute of the Slovak Academy of Science in cooperation with the Faculty of Natural Sciences of University in Košice and Parasitological Institute of the Slovak Academy of Science in Košice, as well as by the Administration of the PLA Latorica and smaller research groups and individual researchers. It is research and monitoring of small ground-dwelling mammals, birds, reptiles, amphibians, fish, plankton and crustaceans. A detailed floristic inventory and inventory of plant communities was done in 1998. Hydrological monitoring is provided by Slovak Hydro-meteorological Institute Bratislava, branch in Košice. Monitoring of surface water quality is provided by the Administration of Bodrog and Hornád Catchment based in Košice. A relatively dense network of bore-holes is used for groundwater monitoring. Extensive hydrological monitoring and assessment of Latorica watershed has been funded by EU sources.

26. Current conservation education: (e.g., visitors centre, hides, information booklet, facilities for school visits, etc.)

Occasional excursions of school children and students guided by employees of the Administration of the PLA Latorica are provided. The brochure for visitors on PLA Latorica was issued in 1993. Another one is being prepared by NGO SOSNA from Košice. In 1995 a Nature Protection Camp took place here, focused on research and education. Systematical education is limited by lack of nature conservancy staff.

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

Site is not systematically used and/or equipped for recreation and tourism. The development of tourism is not expected. Site is used mainly for seasonal and weekend tourism, combined with fishing less with hunting.

28. Jurisdiction: (territorial, e.g., state/region and functional, e.g., Dept. of Agriculture/Dept. of Environment etc.)

Decision making bodies:

District Hall Trebišov, M.R. Štefánika 862, 075 01 Trebišov

County Hall Košice, Komenského 52, 040 00 Košice

29. Management authority: (name and address of local body directly responsible for managing the wetland)

State Nature Conservancy of the Slovak Republic, Administration of Protected Landscape Area Latorica, M.R. Štefánika 206, 075 01 Trebišov

Slovak Water Management Company, Bodrog and Hornád River Catchment Administration, Košice

30. Bibliographical references: (scientific/technical only)

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