

Information Sheet on Ramsar Wetlands

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:

December 23rd, 1997

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35K011

Designation date

Site Reference Number

2. Country: Slovak Republic

3. Name of wetland: Turiec wetlands

4. Geographical coordinates: 48° 46' - 49° 03' N, 18° 48' - 18° 55' E

5. Altitude: (average and/or max. & min.) 406 - 650 (775) m a. s. l. **6. Area:** (in hectares) 466.8868 (7 units)

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)

Turiec River is an important central-Slovakian left-side tributary of Váh River. Its winding course with the nearly natural physical channel conditions, hydric regime and vegetation is over 66 km long, drains the area of 934 km² and flows in NW - N direction across the submontane Turčianska Kotlina Basin which provides the physical setting for most of adjacent wetlands. The Turiec river ecosystem and the adjacent wetlands are internationally important for benthic organisms, fish, wetland biotic communities, biodiversity and biodiversity, ecosystem, biogeographic and scenic values and are partly managed by the state & regional nature conservation/environment bodies.

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

inland: L . (M) . N . O . P . Q . R . Sp . Ss . (Tp) . (Ts) .
(U) . Va . Vt . (W) . (Xf) . Xp . (Y) . Zg . Zk

man-made: 1 . 2 . 3 . (4) . 5 . 6 . 7 . 8 . 9

Please now rank these wetland types by listing them from the most to the least dominant: M (dominant), Tp, Ts, U, W, Xf, Y; 4

9. Ramsar Criteria: (please circle the applicable criteria; see point 12, next page)

(1a) . 1b . 1c . 1d | (2a) . (2b) . 2c . (2d) | 3a . 3b . 3c | (4a) . 4b

Please specify the most significant criterion applicable to the site:

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) [representativeness and naturalness vary between the level of phytogeographic district Intracarpaticum and phytogeographic province Carpaticum occidentale], 2(a), 2(b), 2(d) and 4(a) [for justification of criteria 2(a), 2(b), 2(d) and 4(a), see particularly the sections 22. and 23.]

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

central Slovakia, Žilina region, Martin and Turčianske Teplice districts, approximately 0.5 - 32 km S from Martin

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. **Geology:** mostly coarse and fine grained alluvial deposits consisting either of andesites in the uppermost part (originated in the Tertiary volcanic Kremnické Vrchy Mts) or of limestones & dolomites (mainly from the Mesozoic Veľká Fatra Mts) and crystalline rocks (from Žiar Mts and Lúčanská Fatra Mts) in the middle and lower reaches. **Geomorphology:** Turiec River alluvial floodplain fills the central part of the hilly Turčianska Kotlina Basin which is embraced in an extensive complex of above mentioned high (up to 1,024.4 - 1,592 m a. s. l.) forested mountains. Largely undisturbed river channel, smooth long profile of the river, pool and riffle pattern and pronounced lateral excursion with meanders, point bars, scrolls, bluffs, meander scars and infrequent oxbow lakes are the basic geomorphic features of the whole Turiec river ecosystem. **Hydrology:** mean annual discharge of $10.28 \text{ m}^3 \cdot \text{s}^{-1}$, peak discharges in March - April, minimum discharges in September, occurrence of regular overbank flow stages and temporary water bodies are the basic hydric features. **Water quality:** oligosaprobic to alpha-mesosaprobic; seasonally rather strong water turbidity linked with high content of insoluble matter. **Water depth:** (0.1) 0.5 - 1 (2) m, seasonal fluctuations up to 2 (3) m. **Catchment area:** 934 km^2 . **Soil types:** (according to FAO classification) mostly fluvi-calcaric phaeozems, eutric fluvisols and both fluvi-mollic and fluvi-eutric gleysols, marginally luvisols and cambisols, patches of histosols (fen); nearly all types are mesobasic. **Climate** (outside the mountains): temperate, mild (average air temperature in January from -4 to -6 °C, in July from 16 to 17 °C), wet to very wet (annual rainfall from 780 to 1000 mm) with cold winters.

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

Highly positive role in maintaining the regional hydrological balance (particularly the groundwater recharge) and nutrient cycling by sediment trapping & nutrient retention; high ecological productivity of the river ecosystem; maintenance of water quality and soil fertility; supporting the complex food webs; riverbank stabilization by the riparian vegetation; mesoclimate amelioration.

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

A well-developed continuum of lotic habitats from crenal through epirhithral and metarhithral to hyporhithral. Lentic habitats include patchily distributed oxbow lakes & marshes (either permanent or seasonal), springs, fens, sedge marshes, seasonally inundated grassland, shrub- and tree-dominated wetlands and peat pits. Principal vegetation types comprise following vegetation units (according to classification of Zurich-Montpellier school): *Epilobietalia fleischeri*, *Lemnetea*, *Potametalia*, *Callitricho-Batrachietalia*, *Isoeto-Nanojuncetalia*, *Phragmiti-Magnocaricetalia*, *Montio-Cardaminetalia*, *Scheuchzerio-Caricetalia fuscae*, *Molinio-Arrhenatheretalia*, *Salicetalia purpureae*, *Alnetalia glutinosae*, *Alnenion glutinoso-incanae*, *Bidentetalia tripartiti*, *Convolvuletalia sepium*, *Petasito-Chaerophylletalia* and *Agrostietalia stoloniferae*.

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

Importance of the site for algae (set of characteristic species include *Ceratinis arcus*, *Navicula radiosa*, *Cymbella prostrata*, *Meridion circulare* and *Coleochaete glomerata*), fungi and bryophytes (e. g., endangered *Camptotecium nitens* and *Sphagnum obtusum*) is high.

Diverse wetland plant communities (see section 14.) contain a large number of rare, endangered and/or phytogeographically important vascular plant populations (importance at district, provincial or even higher phytogeographic levels), e. g. *Adoxa moschatellina*, *Batrachium aquatile*, *B. trichophyllum*, *Bidens cernua*, *Bistorta major*, *Callitriche palustris*, *Carex buekii*, *C. cespitosa*, *C. diandra*, *C. elongata*, *C. paniculata*,

Coelogeton pectinatus, *Comarum palustre*, *Dactylorhiza incarnata*, *D. maculata* subsp. *transsilvanica* (the only known Western Carpathian site), *D. sambucina*, *Drosera rotundifolia*, *Epipactis albensis*, *E. palustris*, *Eriophorum* sp. div., *Geranium palustre*, *Gladiolus imbricatus*, *Iris sibirica*, *Limosella aquatica*, *Menyanthes trifoliata*, *Orchis mascula* subsp. *signifera*, *Pedicularis palustris*, *Peucedanum palustre*, *Pinguicula vulgaris*, *Potamogeton perfoliatus*, *Primula farinosa*, *Scorzonera humilis*, *Scrophularia umbrosa*, *Senecio rivularis*, *Serratula tinctoria*, *Sesleria uliginosa* (last refugia in Slovakia), *Traunsteinera globosa*, *Trollius altissimus*, *Utricularia vulgaris*, *Valeriana dioica*, *Viola palustris*, *Zanichellia palustris* subsp. *palustris*, etc.

As most important plant communities of the Turiec river ecosystem may be considered particularly the phytocoenoses from the orders *Callitricho-Batrachietalia*, *Cyperetalia fusci*, *Caricetalia fuscae*, *Magnocaricetalia* and *Molinietalia*.

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

More than 1,000 species of benthic organisms (including 450 benthic macroinvertebrate species) were recorded in the Turiec River catchment, among them 54 species not found anywhere else in Slovakia (many of them are endangered, vulnerable or rare), e. g. *Enchelyodon nodosa*, *Litonotus triquetus*, *Uroleptus mobilis* (Ciliophora), *Oligoneuriella rhenana* (Ephemeroptera), *Brachyptera monilicornis*, *Taeniopteryx schoenemundi* (Plecoptera), *Atherix ibis*, *Oxycera pardalina* (Diptera). Biogeographically important are especially genera such as *Acentrella* (Ephemeroptera), *Rhabdiopteryx* (Plecoptera) and following species: *Ameletus inopinatus*, *Baetis liebenauae*, *B. pentaplebeodes*, *B. subalpinus*, *Caenis pseudorivulorum*, *Rhithrogena circumatrica*, *R. lobata*, *R. podhalensis*, *R. reatina*, *R. tatica* (Ephemeroptera), *Arcynopteryx compacta*, *Brachyptera starmachi*, *Capnia bifrons*, *C. vidua*, *Chloroperla kisi*, *Ecdyonurus macani*, *Leuctra pusilla*, *Nemoura avicularis*, *N. dubitans*, *Perla bipunctata*, *P. grandis*, *Protonemura nimborum*, *Siphonoperla taurica*, *Taeniopteryx nebulosa* (Plecoptera), *Allogamus starmachi*, *Drusus monticola*, *D. biguttatus*, *Hydatophylax infumatus* (Trichoptera), *Liponeura brevirostris*, *L. decipiens*, *L. vimmeri*; *Chaetocladius dentiforceps*, *Cladotanytarsus atridorsum*, *C. lepidocalcar*, *Diamesa incallida*, *D. permacra*, *Harnischia fuscimana*, *Paracladopelma nigrigula*, *Procladius* (*P.*) *rufovittatus*, *Rheotanytarsus curtistylus*, *Symptothastia zavreli* (Diptera). Biogeographically important molluscan species are: *Radix ampla* and *Trichia villosula*, orthopteran ones: *Miramella alpina* and *Tetrix fuliginosa* (from the uppermost part of the catchment). Three dragonfly species (*Agrion splendens*, *A. virgo*, *Platycnemis pennipes*) are of bioindication importance. Rare and/or endangered species of *Lepidoptera* from the uppermost parts are: *Brenthis ino*, *Eumedonia eumedon* and *Melitaea diamina*, from NNR Kláštoriské Lúky Meadows: *Acleris laterana*, *Anticollis sparsata*, *Bactra robustana*, *Biselachista albidella*, *Coleophora alnifoliae*, *C. siccifoliella*, *Deltote uncula*, *Glyphipterix thrasonella*, *Lampronia luzella*, *L. praelatella*, *Phalonidia manniana*, *Phlyctaenia perlucidalis* and *Stathmopoda pedella*. Rare hymenopterans include *Megabombus distinguendus* and *M. veteranus*; rare species of *Diptera*, *Orthorrhapha* are: *Argyra diaphana*, *Laphria vulpina*, *Oedalea austroholmgreni* and *O. hybotina*. Two newly described dipteran species (*Hilara flavocoxa*, *H. setimana*) were not found anywhere else and are of utmost scientific importance.

Vertebrate fauna comprises 1 endangered lamprey (*Eudontomyzon mariae*) and 26 fish species, among them several endangered, vulnerable and indeterminate ones, e. g. *Hucho hucho* (one of the most important refugia), *Zingel streber*, *Cobitis taenia*, *Phoxinus phoxinus*, *Alburnoides bipunctatus* and *Lota lota*. Endangered and vulnerable amphibian and reptile species are: *Triturus montandoni*, *T. alpestris*, *T. vulgaris*, *Hyla arborea*, *Rana esculenta*, *Natrix natrix* and *Lacerta vivipara*. The Turiec river ecosystem is an important refugium of bird species diversity and a segment of migration corridor of provincial importance. More than 170 bird species were found here, among them 78 nesting species. Many of them are vulnerable (estimated numbers of nesting pairs are in brackets), e. g. *Ciconia nigra*, *Anas querquedula*, *Accipiter nisus*, *Falco subbuteo* (0-2), *Perdix perdix*, *Coturnix coturnix* (10-20), *Rallus aquaticus*, *Porzana porzana*, *Crex crex* (10-25), *Gallinago gallinago*, *Tringa totanus*, *Actitis hypoleucos* (3-6), *Alcedo atthis* (3-5), *Jynx torquilla*, *Motacilla flava* cf. *cinereocapilla* (3-10), *Motacilla citreola* (1 - first breeding recorded in Slovakia), *Phoenicurus phoenicurus*, *Saxicola rubetra* (30-40), *S. torquata*, *Muscicapa striata* (30-40), *Lanius collurio* (10-30), some are rare, e. g. *Locustella luscinioides* (3-5) and *Carpodacus erythrinus*, and some indeterminate, e. g. *Circus aeruginosus*, *Dendrocopos syriacus*, *Riparia riparia*, *Sylvia nisoria* and *Remiz pendulinus* (4-8). Species-rich group of migrants includes, e. g. *Pandion haliaetus*, *Grus grus*, *Gallinago media*, also *Phalacrocorax carbo*, *Plegadis falcinellus*, *Botaurus stellaris*, *Ixobrychus minutus*, *Nycticorax nycticorax*, *Ardea purpurea*, *Casmerodius albus*, *Anas acuta*, *Aythya nyroca*, *Hieraetus pennatus*, *Milvus migrans*, *Circus pygargus*, *Falco vespertinus*, *Pluvialis squatarola*, *Calidris temminckii*, *C. ferruginea*, *Tringa erythropus*, *Limosa limosa*, *Numenius arquata*, *Chlidonias nigra*, *Coracias garrulus* and *Acrocephalus paludicola*, but they generally did not occur in large numbers. Noteworthy mammal species: endangered *Sicista betulina* and *Lutra lutra*, vulnerable *Putorius putorius* and rare *Sorex alpinus* and *Neomys anomalus*. The site provides also important refugia for game species (*Anas platyrhynchos*, *Lepus europaeus*, *Sus scrofa*, *Capreolus capreolus*).

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

The site is important for scientific research, nature conservation, fishing, recreation & tourism, hunting, education and pastoral agriculture. It also represents the core area of historical landscape of the Turiec Region.

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

(a) site: Slovak state (Váh River Catchment Administration at Piešťany, Land Resource Administration at Bratislava), private owners and their co-operative farms, municipal ownership

(b) surrounding area: the same owners

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

(a) site: Nature conservation (see sections 16. and 17.); domestic and industrial water supply (at a larger scale mainly from the uppermost part of the Turiec River; probably the most important activity); 13 small (tens of inhabitants) to medium size (hundreds of inhabitants) rural settlements and villages adjoining the Turiec river ecosystem (mostly of agricultural functional type); agricultural activities (cattle & sheep pastures, mowed meadows, locally arable land; either housing or agriculture might be the second most important activity), fishing, irrigation water supply (small-scale, from the middle and lower parts), hunting, fishponds.

(b) surroundings/catchment:

Turčianska Kotlina Basin: agricultural production is dominant (barley, clover & clover-grass mixtures, wheat, potatoes, meadows & pastures, etc.); moderate rural urbanization, nature conservation, marginally forestry;

Adjacent mountains: striking dominance of forestry and hunting, lesser extent of nature conservation, water resources conservation & use; several areas are important for both summer and winter recreation, tourism and sport.

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

(a) at the site: functioning of the Turček aqueduct (since 15th century); provisional water supply objects in the vicinity of the Turček Village since the late 1970s; most importantly, construction and present function of water supply dam in the same location (uppermost part of the catchment, more than 9 millions m³ of impounded drinking water, 0.5 m³ · s⁻¹ to be exported outside the catchment, serious threat to the proposed Nature Reserve Kaltwasser, barrier & adverse downstream effects, etc.); point & nonpoint sources of pollution and resulting eutrophication (mostly from agricultural fertilizers, manure pits, local sewage, waste disposal); drainage & reclamation of some land tracts adjacent to the site; illegal fishing; excessive irrigation water demands; inappropriate grazing regimes; secondary plant succession after abandoning traditional land use (mowing, grazing); allochthonous tree species (*Populus x canadensis*) in the riparian vegetation belt since 1950s; synanthropization & fragmentation of wetland vegetation

(b) in the surroundings/catchment: large-scale land drainage & reclamation during last 40 years (in both floodplain and hilland), consolidation of smaller land tracts, extensive use of agricultural chemicals, excessive clearcutting and forest road construction (present changes in land tenure/ownership may induce some opposite trends in the future), extensive exploitation of water resources in the catchment, urbanization.

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 site consists of following subsites (individual protected areas & categories; legal status of each protected site and its area is indicated in brackets): National Nature Reserve Rieka Turiec River (established in 10. 7. 1966 by Act of the Commission of Slovak National Council No. 6527/1966-osv./9, 93.6696 ha) with loosely conceived buffer zone of 875 km², National Nature Reserve Kláštorské Lúky Meadows (established in 27. 5. 1974 by Order of the Ministry of Culture No. 3625/1974-OP, 85.9915 ha) and Protected Site Jazierko near Jazernica Village (established in 28. 3. 1975 by Decree of the District National Committee at Martin No. 46, 0.1618 ha). Territorial System of Ecological Stability of Slovakia (Decree of the Government of the Slovak Republic No. 319/1992) designates the Turiec river ecosystem as a biocorridor of supraregional importance. Regional Territorial System of Ecological Stability of the Martin District (accomplished in 1993) treats NNR Kláštorské Lúky Meadows as a part of biocentre of supraregional importance, the sites Pod Brehmi, Kotian - Sokol - Balážovo - Borová Kaluž, Finske Domky and Ústie Dlhej Doliny as biocentres of regional importance and proposed Protected Site Blatnický Potok Creek as a biocorridor of regional importance according to Decree of the Government of the Slovak Republic No. 394/1991. In these areas, no boundary changes have been made and an officially approved management plan still does not exist except for NNR Kláštorské Lúky Meadows, for which the Special Management Plan was prepared in 1993 by Slovak Agency of Environment at Banská Bystrica, followed by two NGO projects (the GEF project "Conservation of Biodiversity of the National Nature

Reserve Kláštorské Lúky Meadows" in 1995 and the project of water regime restoration, both being implemented by District Committee of the Slovak Union of Nature and Landscape Conservationists at Martin). On the basis of these projects and *ad hoc* decisions of regional conservation/environment authorities, some manipulations of plant succession and water regime in the reserve have been done. An attempt to restore the riparian vegetation (particularly the tree layer) in the upper reaches of the Turiec River between the villages Sklené and Dubové was made by the Hron River Catchment Administration at Banská Bystrica.

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

Two new protected areas were officially proposed: Protected Site Ivančinské Močiare Marshes (2.7497 ha, in 1987 by Regional Centre of Nature Conservation at Banská Bystrica) and Protected Site Blatnický Potok Creek (26.1142 ha, in 1990 by Administration of the Protected Landscape Area Veľká Fatra Mts at Vrútky). In 1990, the enlargement of National Nature Reserve Rieka Turiec River (to the size of 93.6696 ha which represents spatial extension up to Turček Village) was proposed. Until recently, the Action Plan for Conservation of the Turiec River was completed and submitted to District Office of Environment at Martin.

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

Current research activities include: soil & hydrogeology surveys (private researchers), wetland plant population/ community studies (mostly by Andrej Kmet' Museum of the Turiec Region), landscape-ecological survey & evaluation of stream ecosystems (private researchers), biotope mapping (various researchers), long-term limnological (Comenius University & Slovak Academy of Sciences) and ichthyological (Slovak Academy of Sciences) research, dipteran, orthopteran, dragonflies and amphibian/reptilian studies (Andrej Kmet' Museum of the Turiec Region), belt transect bird censusing in the Turiec river ecosystem (Comenius University) and mammal (particularly Otter) surveys (Administration of the Protected Landscape Area Veľká Fatra Mts). A multilevel and multidisciplinary ecological assessment of the Turiec Region was finished in 1994. Inventories of conservation values that preceded special management plans for NNR Kláštorské Lúky Meadows and Protected Site Jazierko near Jazernica Village were also conducted. Proposals concerned with the monitoring of the Turiec river ecosystem exist since early 1993, but only the monitoring of groundwater level at NNR Kláštorské Lúky Meadows has been conducting. Special field station still does not exist.

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

The nature conservation education potential of the site is high, but remains almost untouched with the exception of Station of Young Naturalists at Turčiansky Peter (new activities may arise during an implementation of the Action Plan).

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

In addition to fishing, hunting and occasional canoeing, there is only a small-scale everyday and/or weekend recreation of local inhabitants without any facility in the site.

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

Territorial jurisdiction is divided into:

- state (Ministry of Environment, Department of Nature and Landscape Conservation)
- regional (Regional Office at Žilina, Department of Environment) and district (District Offices at Martin and Turčianske Teplice, Departments of Environment)

Functional jurisdiction is divided between Ministry of Environment and Ministry of Agriculture, Forest & Water Management.

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

Slovak Agency of Environment, Centre of Nature and Landscape Conservation, Lazovná 10, 974 00 Banská Bystrica; phone: +421-88-754 269, fax: +421-88-534 74

Administration of the Protected Landscape Area Veľká Fatra Mts, Čachovský rad 7, 038 61 Vrútky; phone: +421-842-284 503

Slovak Agency of Environment, Centre at Liptovský Mikuláš, Hodžova 11, 031 01 Liptovský Mikuláš; phone: +421-849-245 57

Váh River Catchment Administration at Piešťany, Branch at Ružomberok, J. Jančeka 36, 034 01 Ružomberok; phone: +421-848-262 51-3

30. Bibliographical references: (scientific/technical only)

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