

# 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.

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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:

12 November, 2003.

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## 3. Country: Hungary

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## 4. Name of the Ramsar site: Felső-Tisza (Upper Tisza)

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## 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* X -or- *no*

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

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## 6. Geographical coordinates (latitude/longitude):

48°11'N, 21° 24'E (westernmost location)

48 ° 39' N, 22 ° 12' E (northernmost location)

48 ° 11' N, 22 ° 50' E (easternmost location)

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## 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 North-Eastern Hungary in the floodplain along the river Tisza from the Hungarian - Ukrainian border (744.8 km of river) till the village of Tiszadada in Szabolcs-

Szatmár-Bereg County. The largest town close to the site is Nyíregyháza, other important towns are Tokaj, Mátészalka, Fehérgyarmat and Vásárosnamény.

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**8. Elevation:** (average and/or max. & min.) 115.9 m at Tiszabecs, 91.3 m at Vásárosnamény, the average is 102.1 m above Baltic Sea **9. Area:** (in hectares) 22 310.7 ha

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#### 10. Overview:

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

Felső-Tisza is a typical flood plain between dikes constructed during the end of the 19<sup>th</sup> and in first half of the 20<sup>th</sup> centuries. The highly natural and near natural habitats consist of large patches of softwood riverside forests (*Salicetum albae-fragilis*) and hardwood riverside forests (*Quercu-Ulmetum*), oxbow lakes, filled in meanders with rich natural flora and fauna, extensively managed or abandoned orchards and plough-lands.

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#### 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

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#### 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).

**Criterion 1:** Felső-Tisza is a representative example of a natural or near-natural middle-reach river type found within the biogeographic region. The wetland is natural, without significant disturbance by human activities and it has an important ecological role in the movement and migration of many plant and animal species in the region.

**Criterion 2:** Felső-Tisza supports vulnerable, endangered and critically endangered species and threatened ecological communities.

#### Species considered as vulnerable in IUCN Red List of threatened species:

Corn crake, *Crex crex*, 25-35 pairs breeding in the grassland habitats

Common otter, *Lutra lutra*

Danube salmon, *Hucho hucho* – Endemic to the Danube river system

Zingel, *Zingel zingel*

Danube streber, *Zingel streber*

Sterlet, *Acipenser ruthenus*

Russian sturgeon, *Acipenser gueldenstaedtii* (Endangered)

#### The following bird species breeding in the soft wood riparian forest are listed as Europe's most threatened bird in the European Bird Directive:

Little Egret, *Egretta garzetta*; Squacco Heron, *Ardeola ralloides*; Night Heron, *Nycticorax nycticorax*; Black stork; *Ciconia nigra*; Black kite, *Milvus migrans*.

**Criterion 3:** Felső-Tisza supports populations of plant and animal species important for maintaining the biological diversity of the biogeographic region such as

Dragonfly species:

*Epitheca bimaculata*

*Anasciaceschna isosceles*

*Chacolestes viridis*

Endemic fish species:

The Carpathian brook lamprey, *Eudontomyzon danfordi* is an endemic fish species to the Tisza river catchment. A subspecies of *Barbus meridionalis*, the Southern Barbel (*B. meridionalis petényi*) is an endemic subspecies to the Pannonic biogeographic region.

Amphibians

Fire-bellied Toad, *Bombina bombina* (Bern Convention, EU Habitats Directive).

Danube Crested Newt, *Triturus dobrogicus* (listed under EU Habitats Directive)

Reptiles

European Pond Tortoise *Emys orbicularis* (Bern Convention),

Grass Snake *Natrix natrix* (Bern Convention, EU Habitats Directive).

**Criterion 4:** Felső-Tisza supports plant and animal species at a critical stage in their life cycles and provides refuge during adverse conditions.

Being a large, continuous natural area, Felső-Tisza is breeding area for numerous invertebrate and vertebrate species. The river also plays an important role as a migration route for several species (invertebrates, birds, bats, etc.)

**Criterion 7:** Felső-Tisza supports a significant proportion of indigenous fish subspecies, species and populations that are representative of wetland benefits and thereby contributes to global biological diversity.

All Gudgeon species *Gobio spp.* are found in this wetland site, namely Gudgeon (*G. gobio*), Danubian Gudgeon (*G. uranoscopus*), Kessler's Gudgeon (*G. kesslerii*), and White-finned Gudgeon (*G. albipinnatus*). Furthermore Riffle Minnow (*Alburnoides bipunctatus*), Zingel (*Zingel zingel*), Danube Streber (*Z. streber*), Bullhead (*Cottus gobio*) Belica (*Leucaspius delineatus*) should be mentioned.

**Criterion 8:** Felső-Tisza is an important source of food for fishes, spawning ground, nursery and migration path on which fish stocks, either within the wetland or elsewhere, depend.

The most important species in this regard include Nase (*Chondrostoma nasus*), Barbel (*Barbus barbus*), and Sterlet (*Acipenser ruthenus*).

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**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:** Pannonic

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

The biogeographic regionalisation scheme applied is the same used by the European Union (according to the Habitat Directive)

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#### **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.

##### *Geology*

Floodplain of Tisza is a basin of recent subsidence, a fluvial plain. The soil types are the mixes of Holocene fluvial sediments as fluvial sand, gravel, flood plain mud, freshwater lime mud. The river carries small gravel with sand in section between settlements of Tiszabecs and Tivadar. The river has a strong meandering and incision characteristic with a large number of undercut steep banks. The average difference between the high and low water level of the river is 8 m. The most intensive floods happen in April (because of snow melting), in June (the so called 'green flood' caused by strong spring rainfall) and between December and January. The lowest water level is between August and September.

##### *Climate*

Climate is moderately warm continental with insufficient precipitation in the growing season. Winters are moderately dry and cold.

Average hours of sunlight are 1920-1940 hours/year, the average temperature is 9.5-10 °C, and the average yearly rainfall is 550-580 mm.

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#### **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).

The catchment area is fairly varied: from high mountains to hilly areas. General land uses include forestry, mining and to a lower extent agriculture.

The total area of the catchment of the Felső-Tisza is estimated at 157.186 km<sup>2</sup>.

The largest part of the catchment is shared between Romania and Ukraine. Hungary has 27% of it covering 42.286 km<sup>2</sup> while Slovakia has a smaller part.

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#### **16. Hydrological values:**

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

The wetland site covers the entire active floodplain of the river. The region is the richest part of the country in watercourses. Until now the network of watercourses has been dynamic and permanently formed.

The Tisza has typical characters of a lowland river and has three types of floods. The first occurs mainly in April, following the snow melt in the catchment area. Heavy floods may happen frequently caused by intensive precipitation in June and July, sometimes in late

autumn. Difference between high and low water level is 485 cm with 930 cm at maximum. For flood prevention purposes, the river was regulated during the 19<sup>th</sup> and 20<sup>th</sup> centuries.

Frequency and intensity of floods have an important impact on the condition of oxbows in the floodplain. During the past few decades there have been dry periods when the water level has been lower than the average, the "washing out" function of the flood has not worked properly in the oxbows and the eutrophication became more intense.

Along the whole length of the river Tisza in Hungary there are 116 oxbows (larger than 4 hectares), among these 31 are located in Felső-Tisza. They perform extremely important ecological functions (spawning, rearing, feeding, resting and staging, aquifer recharge, aquatic species "banks", and habitat connectivity). The ecological quality of the oxbows varies from those that are still relatively undisturbed to some that have been heavily modified, have high production of algae and are likely to take substantial time to regenerate. Oxbows can be as long as 8–10 km, their average length is 1.3 km.

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## 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.

Ts, M, W, R, O, Xf, Xp, P, Ss, 9

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## 18. General ecological features:

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

Types of habitats and vegetation are closely related to the typical riparian ecosystems. Because of the regulation of the river, the size and distribution of these habitats have decreased significantly during the last hundred years. However, in the present situation the remaining fragments of these habitats are able to hold their basic features. These are as follows:

- Soft wood riparian forest (*Salicetum albae-fragilis*): consists of the species *Salix alba*, *Salix fragilis*, *Populus alba*, and *P. nigra*. This habitat is common in this wetland and the number, size and distribution of this habitat has an important role in the general ecological function of the wetland. The following internationally and nationally important typical bird species are breeding in this habitat: *Egretta garzetta*, *Ardeola*

*ralloides*, *Nycticorax nycticorax*, *Ardea cinerea*, *Ciconia nigra*, *Milvus migrans*, *Luscinia luscinia*.

- Willow bushes (*Salicetum triandrae*): consists of *Salix triandra*, *S. purpurea*, *S. fragilis*, *S. viminalis*.
  - Hardwood riverside forests (*Querceto-Ulmetum*), oxbow lakes, filled in meanders with rich natural flora and fauna, extensively managed or abandoned orchards.
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#### **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.*

The most important values in the flora are natural soft-wood forests (*Salicetum albae-fragilis*) and hard-wood (*Querceto Fraxineto-Ulmetum*) riparian forests, which size and number provide ample opportunity to keep its original flora and fauna and to naturally recolonize the surrounding artificially altered areas in the flood zone.

#### Protected plant species in the area:

*Trapa natans* (Bern Convention /I. Annex /),

*Nymphaea alba*

*Salvinia natans* (Bern Convention /I. annex /),

57 different Orchidaceae spp. (CITES Convention /II. annex/) including the Pannon endemic *Epipactis tallosii* that was discovered in the late nineties

*Galanthus nivalis* (CITES Convention /II. annex/),

*Sternbergia colchiciflora* (CITES Convention /II. annex/),

*Adonis vernalis* (CITES Convention /II. annex/)

*Salix elaeagnos* listed by Hungarian Red Book

*Iris pseudocorus* listed by Hungarian Red Book

*Leucojum aestivum* listed by Hungarian Red Book

*Leucanthemum serotinum* listed by Hungarian Red Book

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#### **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.*

#### Invertebrates

Long-tailed Mayfly *Palingenia longicauda* listed by Hungarian Red Book

Hermit Beetle *Osmoderma eremita* IUCN VU A1c

Marbled Rose Chafer *Liocola lugubris* listed by Hungarian Red Book

Borer species *Saperda carcharias*, *S. scalaris*, *S. octopunctata* listed by Hungarian Red Book

#### Fish

European Mudminnow *Umbra krameri* (Bern convention – Endemic to the Danubian river system – listed by Hungarian Red Book

Balon's Ruffe *Gymnocephalus baloni* – Endemic to the Danube river system (IUCN Red list DD

Striped Ruffe *Gymnocephalus schraetzer* – Endemic to the Danube river system (VU-2003 IUCN Red list)  
 Zingel *Zingel zingel* – Endemic to the Danube river system VU 1ce+2ce  
 Streber *Zingel streber* – Endemic to the Danube river system VU 1ce  
 Danube salmon, *Hucho hucho* (CITES Convention /II. annex/) IUCN EN A2 bcede  
 Sterlet *Acipenser ruthenus* (CITES Convention /II. annex/), IUCN A1c+2d  
 Bastard Sturgeon *Acipenser nudiventris* (CITES Convention /II. annex/), IUCN EN A1acde+2d  
 Russian Sturgeon *Acipenser gueldenstaedtii* (CITES Convention /II. annex/), IUCN EN A2d  
 Weatherfish *Misgurnus fossilis* (Bern Convention, EU Habitats Directive / II. annex /),  
*Cobitis taenia* (Bern Convention),  
*Rhodeus sericeus amarus* (Bern Convention, EU Habitats Directive),  
*Proterorhinus marmoratus* (Bern Convention).

### Amphibians

*Pelobates fuscus*

*Bufo bufo*, *B. viridis*

Reptiles *Natrix natrix*

### Birds

(numbers refer to the size of breeding population)

Squacco Heron *Ardeola ralloides* (EU Wild Birds Directive I., Bern Convention II.),

Kingfisher *Alcedo atthis* (Bern Convention) Bern Convention II., EU Wild Birds Directive I.

Black Stork *Ciconia nigra* (Bonn Convention II, Bern Convention II., EU Wild Birds Directive I., CITES Convention /II. annex/)

Little Egret *Egretta garzetta* (EU Wild Birds Directive I., Bern Convention II.)

White tailed Eagle *Haliaeetus albicilla* ( Bern Convention II., EU Wild Birds Directive I.

Night Heron *Nycticorax nycticorax* (EU Wild Birds Directive I., Bern Convention II.),

Feruginous Pochard *Aythya nyroca* (EU Wild Birds Directive I., Bern Convention III, Bonn Convention I/II) 50-60 pairs\*

Honey Buzzard *Pernis apivorus*, 2-5 pairs Bern Convention II., EU Wild Birds Directive I.

Black Kite *Milvus migrans*, 1-2 pairs Bern Convention II., EU Wild Birds Directive I.

European Roller *Coracias garrulus*, 4-5 pairs Bern Convention II., EU Wild Birds Directive I.

Sand Martin *Riparia riparia*: Bern Convention II., 10-14 000 pairs

*Corvus corax*, 10-20 pairs

\* globally threatened species

### Mammals

*Mustella nivalis*

*Mustella erminea*

European Squirrel (*Spermophilus citellus*) IUCN VU A1c

Otter *Lutra lutra* (Bern Convention, CITES Convention /I. annex/, EU Habitats Directive / II annex/),

*Felis silvestris* (CITES Convention /II. annex/)

*Myotis daubentoni* (Bern Convention),

Pond Bat *Myotis dasycneme* IUCN VU A2c

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## 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.

Oxbow ecosystems scattered along the river Tisza provide numerous social and economic goods and services, including irrigation for agricultural lands, small-scale fisheries, recreation and flood control or mitigation.

The fish fauna is rich, providing opportunity for traditional fishery. Because of the natural conditions, the area provides a unique opportunity to study both the structure and function of a riverside ecosystem and the ecological and behavior characteristics of both the populations and the community of animal and plant species in an undisturbed condition.

The area has great importance for environmental education. Because of the large and diverse habitats, there are many options for hands-on presentation of the structure and function of the ecosystems both to the students and others, without causing significant damage, by utilizing proper methodology.

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## **22. Land tenure/ownership:**

(a) within the Ramsar site:  
State owned – roughly 40%  
Local government – 30%  
Private – 30%

(b) in the surrounding area:  
mainly private

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## **23. Current land (including water) use:**

(a) within the Ramsar site:

- Forestry, unfortunately with extended plantation of hybrid poplar;
- Inappropriate grazing and harvesting of hay;
- Tourism, canoeing along the river, beaches and related business, development of guest-house areas;
- Hunting, mainly for wild boar, pheasant, waterfowl;
- Fishing.

(c) in the surroundings/catchment:

- Intensive forestry;
- Plans for large-scale developments (industry, traffic, etc.).

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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:

- intensive and unfortunately uncontrolled canoe tourism during the summer period;
- uncontrolled mass tourism in Tivadar, Vásárosnameny and increasing tourism in various villages;



- intensity of forestry has increased since 1990. As a result, the fragmentation of the riverside forest habitats is getting close to the dangerous level for the species living in that habitat.
  - increasing volume of treated sewage water and the nutrients it carries poses a potential risk for the river, streams and oxbows.
  - uncontrolled fishing activities in the oxbows, introduction of non-native fish species, overloading, littering and disturbance by anglers.
  - growing and uncontrolled tourism along the river and on the beaches produce significant littering and disturbance.
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#### **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.

The Szatmár-Beregi Landscape Protection Area, which covers some parts of the wetland between Nagyar and Olcsvaapáti was designated in 1982. Now it is evident that the size and distribution of the areas presently protected are not adequate for the effective conservation of riverside habitats.

Current protection presents little opportunity for limiting and regulating agricultural, forestry and development activity. The Landscape Protection Area is supervised by the Hortobágy National Park.

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#### **26. Conservation measures proposed but not yet implemented:**

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

The "Alföld" program of the Hungarian Government has implemented a special subprogram for the river Tisza. This comes from recognition of the essential role of the river in the structure and function of the Hungarian Lowland and from an understanding of the high ecological values of the river and habitats along it. This program has identified the most important sites along the river with the aim to control further developments.

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#### **27. Current scientific research and facilities:**

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

A pilot project area of the Hungarian Biodiversity Monitoring Program is found at village Gávavencsellő within the wetland site where selected methods and techniques of biodiversity monitoring are carried out (e.g. habitat mapping, monitoring of several taxa etc.)

Moreover there are specific scientific investigations in progress for example "Environmental changes and evolutionary responses of the migrating birds". Other studies include surveys and researches on dragonflies conducted by NGOs (Debrecen University, Debrecen).

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#### **28. Current conservation education:**

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

Szabolcs-Szatmár-Bereg County plays a leading role in nature protection education in Hungary. However, in this part of the county there are no significant activities on

environmental education. Szatmár-Bereg Landscape Protection Area has a visitor center in Fehérgyarmat.

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### 29. Current recreation and tourism:

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

Tourism related to water and countryside village is increasing that may have a potential for threatening the riverside ecosystem.

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### 30. Jurisdiction:

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

Ministry for Environment and Water, Bureau of Nature Conservation  
Hortobágy National Park Directorate

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### 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.

Felső-Tisza vidéki Water Management Authority,  
H-4400 Nyíregyháza, Széchenyi u. 19.

Directorate of Kiskunság National Park  
H - 6000 Kecskemét, Liszt F. 19  
Phone: 36/ 76-482-611  
Fax: 36/ 76-481-074

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### 32. Bibliographical references:

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

- BORHIDI A.– SÁNTA A. eds. (1999): Vörös könyv Magyarország növénytársulásairól. A *KÖM Természetvédelmi Hivatalának Tanulmánykötetei* 6. Red Book on plant associations of Hungary. TermészetBÚVÁR Alapítvány Kiadó, Budapest
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- HORVÁTH, R. – EBESFALVI, S. –FINTHA, I. – HABARICS, B. – HOMOKI, – KELEMEN A. (2003): Szatmár-Beregi Tájvédelmi Körzet kezelési terve Management plan of Szatmár-Bereg Landcape Protection Area – manuscript (In Hungarian)

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- Rakonczay, Z. (ed.) 1990: Vörös könyv. A Magyarországon kipusztult és veszélyeztetett növény- és állatfajok – Hungarian Red Book. Extinct and threatened plant and animal species of Hungary. In Hungarian with English summary. Akadémiai Kiadó, Budapest.
- Szatmár-Beregi Tájvédelmi Körzet és térsége regionális és tájrendezési terve Vizsgálatok (1989). Kelelterv- Regional and Landscape management plan of Szatmár-Bereg Landcape Protection Area, manuscript (In Hungarian) Debrecen
- SZÉP, T. (1991). A Tisza magyarországi szakaszán fészkelő partifecske (*Riparia riparia* (L.), 1758) állomány eloszlása és egyedszáma. (Number and Distribution of the Hungarian Sand Martin Population Breeding along the Hungarian Reaches of the River Tisza) *Aquila*, 98: 111-124.
-