Hungarian section II.

Date: October 20, 1996

Country: Hungary

Name of wetland: Upper Tisa[1] between Záhony and Vásárosnamény

Geographical coordinates: 48° 14' 36'' N 22° 16' 52'' E (center of the site)

Altitude: 97.3 m at Záhony and 102.3 m at Vásárosnamény (as compared to the level of the Baltic Sea)

Area: 3 200 ha

Overview: The wetland is a typical and much wider flood plain than that along the upper part of the river, between the dikes which were built during the end of the 19th and the first half of the 20th centuries. The highly natural and near-natural habitats consist of the largest patches of soft wood riparian forests (*Salicetum albae-fragilis*) to be found along the Upper Tisa. Hard wood riparian forests (*Querqo-Ulmetum*) do not exist here. There are oxbow lakes, filled-up meanders with rich natural flora and fauna, and plough-lands. The wetland is natural, without significant disturbance by human activities and it has an important role as an extended "green corridor" in the movement and migration of many plant and animal groups in the region.

Wetland type: M, T, X

Ramsar criteria: 1.c; 2.b, 2.c

Map of site included? see Map

Name and address of compiler:

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General Location: Located in the floodplain along River Tisa between Záhony (628 river km) and the confluence with River Szamos (686 river km). The site is located in Szabolcs-Szatmár-Bereg county, with the nearest towns being Vásárosnamény, Kisvárda and Záhony.

1 The Hungarian name of the river is Tisza

Physical features: The site is a basin of recent subsidence, made up of fluvial plains. The soil types are mixtures of Holocene fluvial sediments such as fluvial sand, floodplain mud, freshwater lime mud. The river has strong meandering and incision characteristics, with a large number of undercut steep banks. Climatically it is a moderately warm region with insufficient precipitation in the growing season, and with moderately dry, cold winters. The average number of hours with sunshine is 1950-2000 per year, the average temperature is 9.5-10 C°, and the average annual rainfall is 650-700 mm. The size of the catchment area is 29,057 km^2. The average difference between high and low water levels of the river is 11 m. The most intensive flood occurs in April (snow melting), and in June there are occasional floods ("green flood" caused by heavy spring rainfall) and there is a flood between December and January. The lowest water level occurs between August and September.

Hydrological values: There are regular and heavy floods mainly in April following snow-melting in the catchment area, and the occurrence of heavy floods in June-July and late autumn, due to intensive precipitation, is not rare either. The difference between high and low water levels is 11 m as maximum. Because of the high risk of flooding, a huge dike system was created in the middle of the 19th century.The frequency and intensity of floods has an important impact on the condition of oxbow lakes in the flooded area. During the past few decades, there have been dry periods with the water level being lower than the average, and the "washing out" function of the flood could not work properly in the oxbows. As a consequence, eutrophication has been becoming more intense.

Ecological features: The types of habitats and vegetation are closely related to typical riparian land. Because of the regulation of the river course, 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 keep their basic features. — Soft-wood riparian forest (*Salicetum albae-fragilis*): consists of the following major tree species: *Salix alba*, *Salix fragilis*, *Populus alba*, *P. nigra*. This habitat is common in this wetland and the number, size and distribution of these habitats have an important role in the general ecological function of the wetland. The following internationally and nationally important typical bird species breed in this habitat: *Ciconia nigra*, *Milvus migrans*, *Luscinia luscinia*. — Willow bushes (*Salicetum triandre*): consist of *Salix triandra*, *S. purpurea*, S. fragilis, S. viminalis. — Flood plain meadows *(Agrostetum albae, Alopecurum pratensis)*. Because of the regular organic pollution delivered by River Szamos at Vásárosnamény, the water quality is worse than in the upper stretch of the river.

Noteworthy flora: The most important values in the flora are the natural soft-wood (Salicetum albae-fragilis) riparian forests, whose size and numbers allow the survival of its original flora and fauna and natural recolonization in the surrounding artificially altered areas in the flood zone. Protected plant species in the area:

Salix eleagnos
Iris pseudacorus
Leucojum aestivum
Leucanthemum serotinum
Nymphaea alba
Salvia natans
Nymphoides peltata

Noteworthy fauna: Because of the lack of extensive biological investigation in this area, we presently have proper data for the avifauna only.
Ciconia nigra, 2-5 pairs
Milvus migrans, 1-2 pairs
Corvus corax, 2-10 pairs
Merops apiaster, 5-10 pairs
Alcedo atthis, 30-40 pairs
Riparia riparia, 200-500 pair

Mollusca:
Helicigona banatica, the only occurrence in Hungary

Social and Cultural values: The fish fauna is less rich than in the higher section, because of the high organic pollution delivered by River Szamos. 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 behavioural characteristics of both the populations and the communities of animals and plants in an undisturbed setting.The area has a great importance for the subject of environmental education. Because of the presence of extensive and various habitats, there are many options to present, using proper methodology, the structure and function of the ecosystems both to the students and to the public without significant harm to the environment.

Land tenure / ownership:
(a) The ownership structure of the proposed site is a mixture of state, private and co-operative possessions.
(b) Similarly, the ownership structures of the surrounding areas are state, private and co-operative.

Current land use:
Site:
(a) Forestry, unfortunately with extended plantation of hybrid poplar.
Agriculture, mainly with fast-growing plants because of the intensive and common flooding.
Grazing and harvesting of hay
Tourism, canoe trips along the river, village tourism
Hunting (mainly for wild boar, pheasant, ducks and hare)
Fishing

(b) Surrounding / catchment:
Forestry, with extended plantation of hybrid poplar.
Agriculture, mainly with fast-growing plants because of the intensive and common flooding.
Orchards for which the soil and climate are adequate.
Grazing and harvesting of hay
Tourism, village tourism
Hunting (mainly for wild boar, pheasant, ducks and hare)
Fishing

Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects:
(a) The intensity of forest felling has increased since 1990. As a result, the fragmentation of the riparian forest habitats is approaching a dangerous level for the species living in that kind of habitat.
The proportion of areas with hybrid poplar plantation as compared to naturally growing riverside forests is increasing, resulting in effects similar to those of deforestation.
The increasing volume of treated sewage water and the nutrients it carries pose a potential risk for the river and its 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 results in significant littering and disturbance in the formerly silent and clean habitats.
Areas between the dikes need unique conservation-based land management policy in order to achieve effective protection.

(b) Unresolved communal garbage management; there are no proper dumpsites.
Uncontrolled land management; there are no local and regional development plans with special attention to the requirements of nature conservation.

Conservation measures taken: There is no protected area along this part of the river. This is quite dangerous given the fact that the area has the largest natural riparian forest that suffers the least from the disturbance of tourism. Of special importance is the fact that there is no regular supervision of development and land usage by any nature conservation authoritiy.

Conservation measures proposed but not yet implemented: The "Alföld Program" of the Hungarian Government has implemented a special sub-program for River Tisa. This originates from the recognition of the essential role of the river in the structure and function of the Hungarian Lowlands 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 of controlling further developments.

Current scientific research and facilities: Currently, there is a scientific research investigation in progress, focusing on the Environmental changes and

evolutionary responses of migrating birds by Tibor Szép, Hungarian Ornithological Society (Hungarian Scientific Research Fund (OTKA) # F17709, 1995-1998).

Some studies are being run in an NGO framework, related to Odonata (Kossuth Lajos University, Debrecen).

Current conservation education: Szabolcs-Szatmár-Bereg county holds a leading role in nature protection education in Hungary. However, in this part of the county there is no significant environmental education. There is no visitor center, nor are there publications and hides related to River Tisa and its habitats, flora and fauna.

Current recreation and tourism: At present, there is very intensive and unfortunately uncontrolled canoe tourism during the summer period developing, but low level village tourism along the river in the summer period

Jurisdiction: Hortobágy National Park, 4024 Debrecen, Sumen u. 2.,

Management authority: Upper-Tisa Water Management Authority, 4400 Nyíregyháza, Széchenyi u. 19.

References

Legány, A., Kónya, J., Vértes, I. (1977): Data on the Avifauna of the Tisza region in Szatmár-Bereg. -Tiscia, 12:131-139.

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.