Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:

20/02/2008

3. Country:

Hungary

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Borsodi-Mezőség

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**

a) Designation of a new Ramsar site ☑; or

b) Updated information on an existing Ramsar site ❑

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ❑

or

If the site boundary has changed:

i) the boundary has been delineated more accurately ❑; or

ii) the boundary has been extended ❑; or

iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
i**) a hard copy** (required for inclusion of site in the Ramsar List): ❑;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☑;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ☑.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.
The boundary of the Ramsar site is the same as the designated Borsodi Mezőség Protected Landscape Area (established 1989).

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8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.
The site consists of 3 parts (subunits) according to the designation of the landscape protected area:
"Mezőség puszta" 047°45'N 020°49'E;
"Alluvium at Tiszadorogma village 047°41'N 020°52'E";
"Oxbow lake of Tiszakeszi village" 047°46'N 020°58'E

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9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.
The Ramsar site is situated in North-Eastern part of Hungary, between the Tisza river and the Bükk Mts. (part of the Northern Hungarian Middle Range Mts.). Administration unit belongs to Borsod-Abaúj-Zemplén County and North-Hungary NUTS Region. Very sparse human population can be found in the site (only farmer cottages). Ten municipalities are associated with the Ramsar site, all situated on the boundary of the protected area (less than 30 000 inhabitants altogether). The nearest city is Tiszaújváros (approx. 14-25 kilometres distance).

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10. Elevation: (in metres: average and/or maximum & minimum)

Between 86-93 metres a.s.l.

11. Area: (in hectares)
17 932 hectares
Area of subunits: Mezőség puszta 16,932 ha
Alluvium at Tiszadorogma village: 702 ha
Oxbow lake of Tiszakeszi village: 298 ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.
The main feature of the site is a secondary grassland ("puszta"), nearly similar to the neighbouring well-known Hortobágy (national park, Ramsar Site, World Heritage Site, Biosphere Reserve) but with a smaller extent. The main wetland types are the permanent and intermittent marshes, hayfields and alkaline wet meadows which form a special mozaic vegetation pattern with the arid vegetation habitats (such as steppe grasslands on loess and sandy soil.). The extensive wetland habitats and their size is expected to grow, as a result of restoration projects run by the national park directorate. The nearness of the Bükk Mts. affected the distribution of the flora and the fauna due to the small rivers which run down from the hills (river corridors).
Beside the flora and fauna belong to wetland habitats the site has an outstanding significance for the preservation of the endangered species of Eurasian steppes (Saker, Imperial Eagle, Red-footed Falcon, Roller and Lesser Grey Shrike).

13. Ramsar Criteria:
Tick the box under 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). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☑	☑	☑	☑	☐	☐	☐	☐	☐

14. Justification for the application of each Criterion listed in 13 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 Borsodi Mezőség is the largest alkaline marshland complex on the right bank of the river Tisza. The extension of the wetland – grassland habitats is regarded as the second biggest grassland territory in the Tisza region, after the Hortobágy. A large proportion of its habitats have been preserved in good, natural condition, particularly the marshes that have been least affected by anthropogenic impacts. The nearness of the mountains enriches the ecological – hydrological values. It contains a representative, rare example of a natural or near-natural wetland type found within the Pannonic biogeographic region, such as the habitats listed on the Annex I. of the Habitats Directive (according to the Natura 2000 database for sites: HUBN10002 Borsodi-sík; HUBN20034 Borsodi Mezőség; HUBN20032 Tiszakeszi morotva) :
1530 Pannonic salt steppes and salt marshes
Representativity: good; conservation status: good; global assessment: good.
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation:
Representativity: good; conservation status: good; global assessment: good.
6440 Alluvial meadows of river valleys of the Cnidion dubii
Representativity: significant; conservation status: average; global assessment: significant.
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea
6250 Pannonic loess steppic grasslands:
Representativity: good; conservation status: good; global assessment: good.

2.,
Data on the most important vulnerable, threatened or endangered species from the Natura 2000 database for the Borsodi Mezőség site:

Habitats Directive Annex II species:
- Butterflies and moths:
Large Copper (Lycaena dispar) 1000 indiv.
Fisher's Estuarine Moth (Gortyna borelii lunata) 1000 indiv.
Southern Festoon (Zerynthia polyxena, Habitats Directive Annex IV.)

-Fish:
Spined Loach (Cobitis taenia)
Weather Loach (Misgurnus fossilis)
European Bitterling (Rhodeus sericeus amarus)
White-finned Gudgeon (Gobio albipinnatus)
Mudminnow (Umbra krameri) recolonized after the wetland restoration

- Amphibians:
Crested Newt (Triturus dobrogicus): (over 2% of the Hungarian population)
Fire-bellied Toad (Bombina bombina): (over 2% of the Hungarian population)

- Mammals:
Otter (Lutra lutra) 25 indiv.
European Souslik (Spermophilus citellus)
Southern Birch Mouse (Sicista subtilis) total known Hungarian population!

- Plants:
Habitats Directive Annex II species (from Natura 2000 database):
Small-flowered Thistle (Cirsium brachycephalum): <5000 individ.

- Birds (Birds Directive Annex I species):
Little Bittern (Ixobrychus minutus): 50 pairs (breeding)
Night Heron (Nyctocorax nycticorax): 3-300 indiv. (staging)
Squacco Heron (Ardeola ralloides): 30 indiv. (staging)
Little Egret (Egretta garzetta): 100 indiv. (s)
Great White Egret (Casmerodius albus): 250 indiv. (s)
Purple Heron (Ardea purpurea): 0-2 p (b); 10-20 indiv. (s)
White Stork (Ciconia ciconia): 25 pairs (b); 250-350 indiv. (s)
Black Stork (Ciconia nigra): autumn peaks of 100-150 migrant individuals in the Ramsar site
Spoonbill (Platalea leucorodia): 150-250 indiv. (s)
Glossy Ibis (Plegadis falcinellus): >10 indiv. (s)
Ferruginous Duck (Aythya nyroca): 15-25 pairs (s)
Smew (Mergus albellus): 5-10 indiv. (winter)
Imperial Eagle (Aquila heliaca): 5-6 pairs; 25-30 indiv. (s)
Saker (Falco cherrug): 12 pairs (b)
Black Kite (Milvus migrans): 1-2 pairs (s)
White-tailed Eagle (Haliaeetus albicilla): 5-10 overwintering indiv.
Marsh Harrier (Circus aeruginosus): 80 pairs
Hen Harrier (Circus cyaneus) 100-150 indiv. (w)
Montagu's Harrier (Circus pygargus): 3-5 pairs (b)
Red-footed Falcon (Falco vespertinus): 50 pairs (b)
Common Crane (Grus grus): 200-300 indiv. (s); 5000 migrant indiv.
Little Crake (Porzana parva): 25-30 pairs (b)

Spotted Crake (Porzana porzana): 30-40 pairs (b)
Corncrake (Crex crex): 5-15 pairs (b+s)
Golden Plover (Pluvialis apricaria): 400-500 migrant indiv.
Ruff (Philomachus pugnax): 5000-8000 migrant indiv.
Wood Sandpiper (Tringa glareola): 450 migrant indiv.
Common Tern (Sterna hirundo): 5-6 pairs (b); 10-20 pairs (s)
Whiskered Tern (Chlidonias hybridus): 200-400 pairs (b); 400-600 (s)
Black Tern (Chlidonias niger): 15-25 pairs (b)
Bluethroat (Luscinia svecica): 2-5 pairs (b)
Tawny Pipit (Anthus campestris): 30 pairs (b)
Roller (Coracias garrulus): 130 pairs (b)
Great Bustard (Otis tarda): 10 indiv. (b); >30 indiv. (s, w)

Other international protection :
Green-winged Orchid (Orchis morio) – EU CITES B(II)
Lax-flowered orchid (Orchis laxiflora subsp. elegans) – EU CITES B(II)
Water Chestnut (Trapa natans) – Bern Convention Appendix I
Prostrate False Pimpernell (Lindernia procumbens) – Habitats Directive Annex IV.

3.
Alkaline inland marshes only occur in the Carpathian Basin and adjacent territories (from S-Moravia to the salt marshes of Transsylvania (Roumania) eastward.
The natural habitats (see Criterion 1) as well as many of the species are important to maintain the biological diversity of the Pannonic Biogeographic region.
Flora and fauna are rich in endemics, subendemics, and specialists with continental distribution, mainly the Puccinellia grasslands, the Artemisia steppes, the alkali mud communities and the forest-steppe meadows.
Species: The Pannonian alkaline vegetation is characterised by a few endemic and several Pontic and Southern Eurasian species, like Aster tripolium subsp. pannonicus, A. sedifolius, Cirsium brachycephalum, Limonium gmelini subsp. hungaricum, Pholiurus pannonicus, Plantago schwarzenbergiana, P. tenuiflora, Ranunculus lateriflorus, R. polyphyllus, Trifolium angulatum, T.retusum. On the forest-steppe meadows on its host plant (Peucedanum officinale) lives the Fisher's Estuarine Moth. The undisturbed grasslands signify the only known actual habitat of the Southern Birch Mouse in Hungary. Some raptors with eastern distribution (such as Saker, Imperial Eagle, Red-footed Falcon) have significant strongholds in the site.

4.
The site has a significant role for migratory birds providing key staging habitats and waterbodies. The most noteworthy examples include the breeding populations of species listed under Criterion 2, but it is important to mention that the Borsodi Mezőség also provides refuge to several non-breeding birds in the migration period. The amount of the Common Crane is growing in the last decade (5000 indiv. in autumn period). The nearness of the Tisza river and Kisköre Reservoir ("Tisza Lake") ensures potential feeding territories for goose species (White-fronted Goose, Greylag Goose, Bean Goose, rarely Red-breasted Goose) altogether more than 10 000 individuals, as well as up to 200 Shoveler (Anas clypeata) and up to 1000 Garganey (Anas querquedula).

Thanks to the water restoration projects managed by the Bükk National Park Directorate the amount of the nesting waterfowl has grown sigificantly.
Naturally, the site is also important for many other species than birds (as listed under Criterion 2), but most of the other taxa are resident, and are thus present throughout the year, and not just in a certain period of their lifecycle. The size of the populations is very variable from year-to-year due to the variability in rainfall patterns.

15. 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):
European Commission DG Environment webpage

16. 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.
The Borsodi Mezőség is basically a flat, slightly sloping area on the alluvium of the Sajó and Hernád rivers. The floodplain was formed by streams originated from the Bükk Mts. (Ostoros-patak, Tardi-ér, Csincse-patak, Hór-patak, Kácsi-víz) during the Pliocene and Pleistocene eras. In the Quaternary the surface was modified by the small streams. The depth of the alluvial sediments at Tiszabábolna Village reaches 240 metres. Nowadays on the surface only Holocenic deposits can be found, mostly sand and loessy mud. The section of the depression along the Tisza River (called: Borsod Floodplain) ensures the active connection with the neighbouring landscape units. The completely flat plain is interrupted by small mesomorphological formations, such as abandoned riverbeds and sandy hills. The kurgans (mounds) are typical morphological features of the territory, but their origin is antropogenous.
The soil-types are very variable within the site. Along the river Tisza the alluvial meadow soil is the dominant type, but in the "puszta" unit the soil types are varied due to the scale of the alkalization within a small area from the fertile black earth on the loess ridges to the alkaline soil (mostly solonetz) which contain high accumulations of Na-salts (NaHCO3, Na2SO4, NaCl, Na2CO3) due to leaching (in periods of precipitation) and capillary rise of groundwater and salts (in dry periods).
The climate is semi-arid, semi-humid forest steppe, with average annual precipitation of 560-590 mm, the maximum of rainfall is concentrated to the end of the winter and early summer period. The mean annual temperature is about 9.8-9.9 °C, lower than the neighbouring landcape units of the Great Hungarian Plain (e.g. Hortobágy) due to the cooler spring period and the cold winter period.
The water was the key element of the site in the former geological era. The river Tisza occupied its depression 10.000 years before. The former abandoned riverbeds form the main wetland habitats of the present. The streams which originated from the Bükk Mts. formerly spread away on the plain and – in dry periods – did not reach the river Tisza forming extensive wetland habitats (in more than 20.000 hectares). The last section of the river Tisza was regulated in the Borsodi Mezőség between 1936-39. The effect of this work was negative from the viewpoint of the extent of the wetland habitats, especially which are closer to the line of the river Tisza. The water supply of the streams from the mountains is still continous and noteworthy. The second negative effect was caused by the canalization program when the main canals were built (Tiszavalki-main canal, Sulymos mail canal, etc.). The last – and final – pressure which led to drainage of the 'puszta' occurred when the Kisköre Reservoir ("Lake Tisza") was created (1980'). In the framework of this development the Csincse canal was built up to collect the natural streams originated from the mountains and to conduct water from the area, reducing the amount of area occupied by wetlands. For ensuing wetland restorations, see point 18.

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17. Physical features of the catchment area:
Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).
As a result of the regulation works during the last century the natural catchment area of the marshland and steppe units of the Heves-Borsodi-Plain site were fragmented and the natural watercourses flooding the marshes were cut off. The various agricultural projects implemented in the 1950-ies seriously decreased the local catchment areas to a further reduction of the already limited marsh area.
The water supply from the site is originated from the karstic Bükk Mountains. Therefore the water quantity and quality is naturally accessible. The higher protection level of the mountains can serve the wetland protection goals of the lowland territories.

The total catchment area of the Tisza River covers approximately the half of the Carpathian Basin (157 200 km²), from which Hungary has 47 000 km².

18. Hydrological values:

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

The regulation of River Tisza caused several negative effects on the site. The wetland restoration projects run by the Bükk National Park Directorate focus on the complex, ecologically sustainable water supply. Meanwhile the New Vásárhelyi Plan was planned and accepted by the Hungarian government (from 1998). The main aim is to reduce the costs of flood mitigation (extremely high floods have passed down the River Tisza 4 times in the last 10 years). The development proposal comprises a complex program, which goes beyond the creation of a higher level of flood safety; the improvement of the living standards of the rural and urban population in the region and the formulation and introduction of new types of agro-ecological land use in the area of the emergency flood retention reservoirs. In the vicinity of the Borsodi Mezőség one optional reservoir was planned, so the Bükk National Park Directorate had to take into consideration these plans for the restoration projects of the wetlands.
After a finished EU Life Project (LIFE ENV 03/H/00291), the framework of water conduction has been established (restoration of wetlands by (1) utilizing the natural streams from the Bükk; (2) retaining of inland waters; (3) relieving the floods of the River Tisza (water conduction using by flood gates).

19. 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 • <u>N</u> • <u>O</u> • P • Q • R • Sp • <u>Ss</u> • Tp Ts • U • Va •
Vt • W • <u>Xf</u> • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • <u>9</u> • 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.

Ss, N, O, Xf, 9

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The most important natural wetlands of the Borsodi Mezőség are the permanent and the temporarily inundated marshes, wet meadows and alkaline wetlands (such as reedbeds, Typha-, Glyceria-, Schoenoplectus-, Sparganium-beds, tall-sedge communities, wet hayfields). These treeless habitats form a special mixture of habitats with loessy and alkaline dry grasslands (such as Artemisia grasslands, steppe-meadows). A sanctuary oxbow lake of the River Tisza is situated at Tiszakeszi village. The free-floating and rooted submerged vegetation with Hydrocharition forms the characteristic habitat on this subunit.
The banks of the River Tisza are much more forested, altough the forest plantations (poplar and american ash) have greater extent than the natural forest habitats (riparian willow galleries). Threats of alien species have increased dramatically all along the River Tisza, such as Desert False Indigo (Amorpha fruticosa) and Boxelder (Acer negundo). Unfortunatelly, the slow colonization of these plants has started along the canals and diches in the "puszta" subunit. However, the invasive pressure on natural wetland and grassland habitats is still not remarkable.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, 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 flora and vegetation is characteristic and similar in many ways with the chain of lowland territories ("puszta") along the River Tisza. The flora is richer where the mosaic complexes of the dry habitats and wetlands occur together. On the loessy ridges and old anthropogenous formations (such as kurgans, borderlands between municipalities, dykes) a rich steppe flora blossoms (Phlomis tuberosa, Inula germanica, Adonis vernalis, Salvia spp.). The flora of the alkaline parts is not so diverse, but it has very specialized salt-tolerant species, mostly of an eastern distribution (Eurasian, Pontic, Pontic-Pannonian, Eastern-Mediterranean) pattern, such as Beckmannia eruciformis, Pholiurus pannonicus, Plantago schwarzenbergiana (endemic!), Cirsium brachycephalum (endemic, on Annex II of HD!), Artemisia santonicum, Limonium gmelini subsp. hungaricum (endemic!), Aster tripolium subsp. pannonicum (endemic!), Ranunculus polyphyllos (endemic). The most vulnerable habitats are the non-alkaline hayfields along the floodplain of the River Tisza, which were mostly degraded by the water regulation, intensive afforestation and the infection with alien species. The remnant and characteristic elements of this habitat are the following (all protected by national law): Gentiana pneumonanthe, Orchis laxiflora subsp. elegans, O. morio, Iris spuria, Peucedanum officinale, Clematis integrifolia). The floating vegetation communities are in expansion on the site due to the wetland restoration with such remarkable and threatened species like Nymphaea alba, Nuphar luteum, Nymphoides peltata, Stratiotes aloides, Utricularia australis. Originally they occur on ox-bow lakes but through the wide canals they have started to recolonize the "puszta" part also.

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22. 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.*

The transitional situation of the Ramsar site between the mountains and the plains is the main reason of the richness of the fauna generally. The research activities in the present and past have confirmed high diversity in different taxonomic groups. Birds are the most investigated group. They indicate sensitively and quite rapidly any land use changes and the water supply of the habitats. The first success of wetland restoration was indicated by the remarkable population grow of waterfowl (ducks, geese, grebes, herons and spoonbills). For some species the nearness of the River Tisza and Kisköre Reservoir provide optimal feeding places on the site (e.g. Night Heron, White and Black Storks, Great White Egret and Little Egret, Pygmy Cormorant). The vast wetland territories can maintain growing populations of Common, Whiskered and Black Terns. The water quantity differs from year to year due to variable factors, such as flood, inland water, precipitation, etc. In dry, arid years the nesting pair numbers are much lower for waterfowl.

The site also plays an important role in bird migration. The number of the Common Cranes has increased significantly in the last 5 years (5000 migrants plus 2-300 over summering individuals). In the 80'-ies very few and casual nesting of Greylag Goose was known. After the first phase of the wetland restoration the nesting population grew to 500 pairs which rise to more than 5.000 individuals in late summer. In autumn huge flocks of White-fronted Goose and Bean Goose visit the agricultural lands. Some easterly distributed and globally threatened birds have considerably strong nesting populations on the site (national and EU importance), such as Great Bustard, Saker, Imperial Eagle, Marsh Harrier, Red-footed Falcon, Roller.

The invertebrate fauna is poorly investigated. Research has mostly focused on species with EU nature protection importance. The Large Copper is a typical element of the wetland habitats where rich population of Rumex sp. grows. The Fisher's Estuarine Moth has a significant population on the "puszta", due to the prevalence of its host-plant (Hog's Fennel - Peucedanum officinale). The proper management of the meadows rich in this umbrelliferous plant is one of the key issues nowadays on the site. Some taxa (dragonflies, carabids, snails, etc.) which might be important in the monitoring resarch of the wetland restoration are still under-investigated.

Fish and amphibian monitoring (in the framework of the National Biodiversity Monitoring System) has started recently. The preliminary results already show positive correlation between the extension of wetland habitats and the increasing populations of fish and amphibians. The Mudminnow (Umbra krameri) recolonized the site after the wetland restoration quite rapidly, although, the invasive Amur Sleeper (Perccotus glenii) also shows an increase in the artificial canals.

The mammal fauna is also noteworthy. The Southern Birch Mouse is this most remarkable value on the site, as this is the only confirmed, remaining site for the species in Hungary. After a long pause lasting several decades, the first live individuals were trapped only in 2006. Before, this Eastern steppe mouse was only detected from owl pellets. The proper habitats for the Otter are situated along the River Tisza and the main drainage canals. The European Souslik population decreased in the last decades, because of the decline of extensive animal husbandry. Nowdays the populations are growing and are considered stable.

23. Social and cultural values:

a) Describe if the site has any general social and/or 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:
According to the archeological findings the territory was inhabited by humans in the Neolithic forming a chain along a higher ridge from the existent villages between Négyes and Ároktő. Remnants of later Avarian and Roman times were also studied by archeologists.
The most important cultural value of the Borsodi Mezőség (such as the neighbouring Hortobágy region) is the survival of ancient, traditional pastoral life. Extensive animal husbandry has been practised here for thousands of years, and pastoral traditions, tools and lifestyle have been preserved. Kurgans (tumuli) have also been found in the area.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ☑ and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
Traditional tools, methods and lifestyle of pastoral communities (herdsmen) have been maintained here in superb quality and provide a good example for the harmonious co-existence of man and nature. The spatially and temporally diverse grazing regimes prove the sustainability of the wetland – grassland complexes.

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:
The kurgans had a very important role in ancient times, due to their complex functions (e.g. sanctuary places, watchposts, former settlements). The people living here depended on the neighbouring wetlands (e.g. fishery, gathering foods).

24. Land tenure/ownership:

a) within the Ramsar site:
Owned by the Hungarian State and managed by BNPD (75%). According to Act 93 of 1995, the former co-operative lands (altogether 600 hectares) will be obtained by the BNPD in the nearby future. The private land ownership is not sigificant.

b) in the surrounding area:
In the surrounding area the portion of the private land is more significant.

25. Current land (including water) use:
a) within the Ramsar site:
Hay and reed harvesting, grazing of cattle, sheep and horse, ploughlands (small inclusions), fishing /traditional/, hunting, small-scale forestry

b) in the surroundings/catchment:
Ploughlands, water reservoir, hay and reed harvesting, grazing of cattle, sheep and horse, fishing /intensive & traditional/, hunting, small-scale forestry, highway utility.

26. 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:
The wetland restoration on the site ensures the potential regeneration of wetlands. The adequate ownership structure (with the water management and hunting management rights) is the key factor on the proper usage of the site.
Threats of alien species have increased dramatically all along the River Tisza, such as Desert False Indigo (Amorpha fruticosa) and Boxelder (Acer negundo). Unfortunately, the slow colonization of these plants has started along the canals and diches in the "puszta" subunit. However, the invasive pressure on natural wetland and grassland habitats is still not remarkable.

b) in the surrounding area:
On unprotected wetland areas subsistence of conditions is not yet ensured. Grasslands, wetlands and extensive forms of cultivation decline in the area. Water regulation, forestation and intensive grazing also have deteriorating effects. Specific threats in the area are hunting, spontaneous fires and arsons and power lines.
Invasive Plant species.

27. Conservation measures taken:
a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.
Borsodi Mezőség Protection Landscape Area (established 1989, enlarged in 1993) – the area of Ramsar site is the same as the enlarged PLA.
Special Protection Area (Natura 2000) was designated in 2004, as "Borsodi-sík" SPA (HUBN10002) – the area is bigger than the Ramsar (LPA) site.
2 sites of Community Importance (Natura 2000) were proposed in 2004, as HUBN20034 "Borsodi Mezőség" and HUBN20032 ".Tiszakeszi morotva". The subunit at Tiszadorogma village is part of the Tisza section of the "Hortobágy" SPA (HUHN1002) and "Tisza-tó" SCI (HUHN2002) sites. All SCIs were approved by the EU Commission in 2007.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ❑;Ib ❑; II ❑; III ❑; IV ❑; V ☑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?:
The management plan was already compiled, but not yet accepted by law. Newer enlargement plans were carried out by the BNPD, thus the management plan has to be modified.

d) Describe any other current management practices:
The Agro-environmental schemes are siginificant in the area (Borsodi-sík ESA, established 2002). The "flagship" element is the Great Bustard and its protection. One portion of the subsidies is for nature conservation goals.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.
See 27.c.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.
Sample areas of the Hungarian Biodiversity Monitoring System (run by the Ministry of Environment) were chosen for different taxa within the site (e.g. fish-, Fisher's Estuarine Moth monitoring). Standard habitat mapping was carried out in 2006 (25 sq km of the territory in 10 years repetition time). The habitat selection and management issues of *Sicista subtilis* is a continuous task.
EU Life Nature projects which embrace the site are the following:

- Integrated (Multi-level inundation) water management system solving flood-protection, nature conservation (LIFE03 ENV/H/000291)
- Conservation of Aquila heliaca in the Carpathian basin (LIFE02 NAT/H/008627)
- Conservation of Falco cherrug in the Carpathian basin (LIFE06 NAT/H/000096)
- Conservation of Falco vespertinus in the Pannonian Region (LIFE05 NAT/H/000122)
- Conservation of Otis tarda in Hungary (LIFE04 NAT/HU/000109)

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.
The PLA has no visitor centre. At Ároktő village a small informational point can be found where visitors receive information on the natural values and sights of interests. The main tourism in the area is concentrated to the River Tisza and the Kisköre Reservoir where the facilities are managed by the Hortobágy National Park Directorate. A booklet on the Borsodi Mezőség PLA was published by the BNPD from an INTERREG IIIA fund.

31. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.
Public tourism is insignificant within the site and will not be enlarged due to the management plan. Regular training courses are organised for locals, together with the Hortobágy NPD. Some ecotourism development activities are planned on the short term.

32. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.
The Észak-magyarországi Authority for Environmental Protection, Nature Conservation and Water Management (Miskolc) is the first instant authority of the Ministry for Environment and Water.

33. 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.
Bükk National Park Directorate
Hungary, Eger 3304 Sanc u. 6.
fax: 36-36-412-791
Jozsef Duska, director
Mihaly Bodnar, head of the Landscape Protection Area
András Schmotzer, research adviser & officer for Ramsar issues E-mail: schmotzer@bnp.kvvm.hu

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Aradi Cs. 1983: A Kishortobágy madárvilága (1983. évi felmérés). - Kézirat, Debrecen.
Barati A. 1991: A tiszadorogmai zsidó közösség szerepe a falu életében (a XIX. század elejétől a
Budai J. 1914: Adatok borsodmegye flórájához. - Magyar Botanikai Lapok 13: 312-326.
Cserkész T. (2007): High relative frequency of Sicista subtilis (Dipodidae, Rodentia) in owl-pellets in Borsodi Mezőség (NE Hungary). – Fol. Hist.-nat. Mus. Matr. 31: 173-177.
Cserkész T., Estók P. & Práger A. (2004): A magyar csíkosegér (Sicista subtilis trizona Petényi, 1882) – Állattani Közlemények 90(1): 41.55.
Endes M. 1985: Ritkaságok és jellegzetességek: bepillantás a tiszai Alföld növényvilágába. - Kézirat, Jászberény.
Endes M., Harka Á. 1987: A Heves-Borsodi-síkság gerinces faunája. - Eger.
Endrédy E. 1934: A borsodi-nyíltártér talajainak vizsgálata. In: Sajó-Trummer: Magyar Szikesek, Budapest: 127-144.,
Frisnyák S. 1962: Adatok Miskolc és Dél-Borsod régi vízrajzához. - Borsodi Szemle 2:
Frisnyák S., Boros L. 1986: Adalékok Dél-Borsod agrárföldrajzához. - Agrártört. Szemle 10: 275-306.
Molnár A. 1994: A Borsodi-Mezőség TK DK-i részének botanikai térképezése. - Kézirat, Debrecen.
Soó R. 1938: A Tiszántúl flórája - Flora Planitiei Hungariae Transtibiscensis. - Magyar Flóraművek 2, Debrecen.
Timkó I. 1934: A borsodi nyílt ártér szikesei. In: Sajó-Trummer: Magyar Szikesek, Budapest: 109-126.
Timkó I. 1934: A borsodi nyíltártér agrogeológiai viszonyai. - Vízügyi Közl. 16: 436-450.
V. Sipos J. 1982: Tájékoztató jelentés a Kishortobágy leendő tájvédelmi körzet növényzetének 1982. évi kutatásáról. - Kézirat.
V. Sipos J. 1983: Beszámoló jelentés a Kishortobágy növényzetének 1983. évi kutatási eredményeiről. - Kézirat.
Varga Z. 1982: Tájékoztató jelentés a Kishortobágy leendő tájvédelmi körzet rovarfaunájának 1982. évi kutatásáról. - Kézirat.
Varga Z. 1983: Kutatási beszámoló a Kishortobágy rovarfaunájának 1983. évi vizsgálatáról. - Kézirat.
Végh K. 1903: Ároktő és vidékének története. - Egri Egyházmegyei közlöny.
