



# Ramsar Information Sheet

Published on 8 March 2017

Update version, previously published on : 1 January 2007

## Hungary

### Lake Fehér at Kardoskút



Designation date	11 April 1979
Site number	184
Coordinates	46°28'22"N 20°37'29"E
Area	492,00 ha

## Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

## 1 - Summary

### Summary

Lake Fehér at Kardoskút is an alkaline steppe lake in Southern Hungary. As a former branch of river Maros, the area has been subject to a gradual salt accumulation resulting in a typical steppe fauna and flora on the wetland site. The wetland is one of the most fragile and valuable nature reserves in Hungary, along with several archaeological remains. Lake Fehér at Kardoskút has a fundamental role in the migration of thousands of birds in Eastern Hungary.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Compiler 1

Name	Bota Viktória
Institution/agency	Körös-Maros National Park Directorate
Postal address	H-5540 Szarvas, Anna-liget 1., Hungary
E-mail	viktorja.bota@kmp.hu
Phone	+36 66 313-855
Fax	+36 66 311-658

#### 2.1.2 - Period of collection of data and information used to compile the RIS

From year	2007
To year	2014

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Lake Fehér at Kardoskút
Unofficial name (optional)	Kardoskúti Fehértó

#### 2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary Yes  No

(Update) B. Changes to Site area No change to area

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS? No

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

b) Digital map/image  
<1 file(s) uploaded>

Former maps 0

Boundaries description (optional)

The boundary follows the land parcel boundaries that contain the wetland and the surrounding natural habitats.

### 2.2.2 - General location

a) In which large administrative region does the site lie?	Békés County
b) What is the nearest town or population centre?	Orosháza

### 2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes  No

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes  No

### 2.2.4 - Area of the Site

Official area, in hectares (ha):

Area, in hectares (ha) as calculated from GIS boundaries

### 2.2.5 - Biogeography

#### Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
EU biogeographic regionalization	Pannonian

#### Other biogeographic regionalisation scheme

European Commission DG Environment webpage  
[http://ec.europa.eu/environment/nature/natura2000/sites\\_hab/biogeog\\_regions/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/sites_hab/biogeog_regions/index_en.htm)

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

- Criterion 1: Representative, rare or unique natural or near-natural wetland types

Other reasons

As a specific wetland type, Lake Fehér at Kardoskút is rare in the appropriate geographical region. The vast salt steppes have international importance as they cannot be found west of Hungary.  
Habitat types that can be found here and are listed in Annex I of the Habitats Directive: Pannonic salt steppes and salt marshes (HD habitat code:1530) and Pannonic loess steppic grasslands (HD habitat code: 6250)

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

A special habitat of Lake Fehér at Kardoskút is Agrostio-Caricetum distantis on solontchak soils otherwise known from the Danube-Tisza Interfluvium and unknown from elsewhere east of the river Tisza. The better quality lands around the lake have long been cultivated, so the potentially large loess grasslands (Salvio-Festucetum rupicolae) have nearly all disappeared, and there is only one remaining patch of this community.

- Criterion 4 : Support during critical life cycle stage or in adverse conditions

- Criterion 5 : >20,000 waterbirds

Overall waterbird numbers	average of 22963 waterbirds
Start year	2007
Source of data:	zoological database of the Körös-Maros National Park Directorate 2009-2014.

- Criterion 6 : >1% waterbird population

#### 3.2 - Plant species whose presence relates to the international importance of the site

Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
<i>Cirsium brachycephalum</i> 	Small-flowered Thistle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	Habitats Directive Annex II and IV	Criterion 2: The site supports this rare and endangered species.
<i>Festuca rupicola</i> 	loess grasslands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		Criterion 3: This species has nearly all disappeared, and there is only one remaining patch of this community.

Species listed under Criterion 3 which are not yet included in the Catalogue of Life:  
 Agrostio-Caricetum distantis: This species is unknown elsewhere east of the river Tisza.

### 3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion			Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification	
			2	4	6	9	3	5	7									8
<b>Birds</b>																		
CHORDATA / AVES	 <i>Anas crecca</i>	Eurasian Teal; Green-winged Teal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	425			LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 5: Pop. size average between 2007-2010. See taxonomic list for further information on population size.
CHORDATA / AVES	 <i>Anas platyrhynchos</i>	Mallard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3855			LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Anser albifrons</i>	Greater White-fronted Goose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9050		8.2	LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Anser erythropus</i>	Lesser White-fronted Goose	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Aquila heliaca</i>	Asian Imperial Eagle; Eastern Imperial Eagle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Botaurus stellaris</i>	Eurasian Bittern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Branta ruficollis</i>	Red-breasted Goose	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Charadrius alexandrinus</i>	Kentish Plover; Snowy Plover	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Charadrius morinellus</i>	Eurasian Dotterel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Chroicocephalus ridibundus</i>	Black-headed Gull	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6683				<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Circus macrourus</i>	Pallid Harrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Falco cherrug</i>	Saker Falcon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				EN 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Falco vespertinus</i>	Red-footed Falcon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.

Phylum	Scientific name	Common name	Species qualifies under criterion			Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification	
			2	4	6	9	3	5	7									8
CHORDATA / AVES	 <i>Grus grus</i>	Common Crane	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14880		16.5	LC 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species. Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years).
CHORDATA / AVES	 <i>Himantopus himantopus</i>	Black-winged Stilt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Limosa limosa</i>	Black-tailed Godwit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	551		1.5	NT 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Numenius arquata</i>	Eurasian Curlew	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	288			NT 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Numenius phaeopus</i>	Whimbrel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1746		1.3	LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Numenius tenuirostris</i>	Slender-billed Curlew	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				CR 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Criterion 2: The site supports this rare and endangered species. The species was regularly observed until early 1980s.
CHORDATA / AVES	 <i>Philomachus pugnax</i>	Ruff	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2453			LC 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
CHORDATA / AVES	 <i>Recurvirostra avosetta</i>	Pied Avocet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Birds Directive Annex I	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AVES	 <i>Vanellus vanellus</i>	Northern Lapwing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3000			NT 	<input type="checkbox"/>	<input type="checkbox"/>		Criterion 4: The site provides to migrant birds during spring and autumn, and forms an important stopover site (particularly in wet years). Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012.
<b>Others</b>																		
CHORDATA / AMPHIBIA	 <i>Bombina bombina</i>	Fire-bellied Toad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Habitats Directive Annex II and IV	Criterion 2: The site supports this rare and endangered species.
CHORDATA / MAMMALIA	 <i>Lutra lutra</i>	European Otter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Habitats Directive Annex II and IV	Criterion 2: The site supports this rare and endangered species.
CHORDATA / MAMMALIA	 <i>Mustela eversmannii</i>	Steppe polecat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Habitats Directive Annex II and IV	Criterion 2: The site supports this rare and endangered species.
CHORDATA / AMPHIBIA	 <i>Triturus dobrogicus</i>	Danube crested newt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Habitats Directive Annex II and IV	Criterion 2: The site supports this rare and endangered species.

1) Percentage of the total biogeographic population at the site

Criterion 4: See taxonomic list for further information on population size.

*Grus grus*, Common crane, additional information under Criterion 4: Numbers of birds fluctuate to a great degree depending on water conditions. Pop. size average between 2007-2012. See taxonomic list for details.

Criterion 5:

*Anser albifrons*, Greater White-fronted Goose, See taxonomic list for further information on population size.

*Anas platyrhynchos*, Mallard, See taxonomic list for further information on population size.

*Grus grus*, Common crane, See taxonomic list for further information on population size.

*Vanellus vanellus*, Northern Lapwing, See taxonomic list for further information on population size.

*Chroicocephalus ridibundus*, Black-headed Gull, See taxonomic list for further information on population size.

Criterion 6:

*Anser albifrons*, Greater White-fronted Goose, Biogeographic region: Western Siberia/Central Europe

*Grus grus*, Common Crane, Biogeographic region: North-east & Central Europe/North Africa

*Limosa limosa*, Black-tailed Godwit, population range from 150-1870, between 2007 - 2012. Biogeographic region: Eastern Europe/Central & Eastern Africa

*Numenius phaeopus*, Whimbrel, population range from 27 – 3300 , between 2007 - 2012. Biogeographic region: Northern Europe/West Africa

Bibliographical reference: zoological database of the Körös-Maros National Park Directorate 2009-2014.

### 3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

## 4 - What is the Site like? (Ecological character description)

### 4.1 - Ecological character

A pioneer community of the deepest parts of the salt lakebed adapted to the extreme conditions is *Crypsidetum aculeatae*. Zonally, the next community of the lakebed, slightly higher situated, is characterised by *Suaeda maritime*. The most saline parts in the margins of the lakebed is typically covered by *Camphorosmetum annuae* community that can be homogenous or mixed with *Suaeda maritima* and *Puccinellia limosa*. The transition zone between the lakebed and the shores is formed by *Phragmites communis* and *Bolboschoenus maritimus*. Where this zone dries out slowly and salinity does not decline significantly the plant community is nicely enhanced by *Aster tripolium*, forming *Astero-Bolboschoenetum maritimi*.

A special habitat type of the lake is *Agrostio-Caricetum distantis* on solonchak soils otherwise known from the Danube-Tisza Interfluvium and unknown from elsewhere east of the river Tisza. In the area it only occurs on the margin of the eastern side of the lakebed.

Natural habitats around the lake are characterized by salt steppes. North and south of the lake a chain of dry salt grasslands (mainly *Achilleo-Festucetum pseudovinae*) connects to the major grasslands of southeastern Hungary, marking the most important flyway of waterbirds in the Carpatian Basin. These dry steppes are intersected by temporarily flooded pans and creeks whose outer marginal zone is covered by *Agrostio-Alopecuretum pratensis*. Deeper areas are dominated by *Agrostio-Beckmannietum eruciformis*. These pans are surrounded by *Camphorosmetum annuae* providing a special habitat to several animal species.

The better quality lands around the lake have long been cultivated, so the potentially large loess grasslands (*Salvio-Festucetum rupicolae*) have nearly all disappeared, and there is only one remaining patch of this community.

### 4.2 - What wetland type(s) are in the site?

#### Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Saline, brackish or alkaline water > Lakes >> R: Seasonal/ intermittent saline/ brackish/ alkaline lakes and flats		1		Rare
Saline, brackish or alkaline water > Marshes & pools >> Sp: Permanent saline/ brackish/ alkaline marshes/ pools		2		Rare

### 4.3 - Biological components

#### 4.3.1 - Plant species

##### Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Crypsis aculeata</i>		Important species
<i>Salsola soda</i>		Important species
<i>Suaeda pannonica</i>		Important species
<i>Tripolium pannonicum</i>		Important species

##### Invasive alien plant species

Scientific name	Common name	Impacts	Changes at RIS update
<i>Erigeron canadensis</i>		Potentially	No change

#### 4.3.2 - Animal species

##### Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/MAMMALIA	<i>Erinaceus concolor</i>	eastern European hedgehog;Southern White-Breasted Hedgehog				Nationally protected species
ARTHROPODA/ARACHNIDA	<i>Lycosa singoriensis</i>					Nationally protected species
ARTHROPODA/INSECTA	<i>Mantis religiosa</i>					Nationally protected species

### 4.4 - Physical components

#### 4.4.1 - Climate

Climatic region	Subregion
C: Mbist Mid-Latitude climate with mild winters	Cfb: Marine west coast (Mild with no dry season, warm summer)

The annual mean temperature is 10.5°C, total precipitation is approximately 550-600 mm yearly.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Tisza River

The lake itself is isolated from other water bodies, having neither inlet nor outlet on the surface. It has important ground water connections to the ancient riverbeds of the river Maros.

4.4.3 - Soil

Mneral

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes  No

Please provide further information on the soil (optional)

There are soils associated with riverine soil types and alkaline solonetz types.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually seasonal, ephemeral or intermittent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from groundwater	<input type="checkbox"/>	No change
Water inputs from rainfall	<input type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Feeds groundwater	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels largely stable	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The lake itself is isolated from other water bodies, having neither inlet nor outlet on the surface. It has important ground water connections to the ancient riverbeds of the river Maros.

4.4.5 - Sediment regime

Sediment regime unknown

<no data available>

4.4.6 - Water pH

Alkaline (pH>7.4)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

4.4.7 - Water salinity

Hyperhaline/Hypersaline (>40 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Unknown

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar  ii) significantly different  site itself:

- Surrounding area has greater urbanisation or development
- Surrounding area has higher human population density
- Surrounding area has more intensive agricultural use
- Surrounding area has significantly different land cover or habitat types

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	Low
Spiritual and inspirational	Cultural heritage (historical and archaeological)	Medium
Scientific and educational	Educational activities and opportunities	
Scientific and educational	Major scientific study site	High
Scientific and educational	Long-term monitoring site	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium

Other ecosystem service(s) not included above:

Groundwater recharge plays an important role in water regime of the site.

Ruins of Csomorkány and the windmill of Székkutas are examples of cultural heritage of the region.

Detailed hydrological, hydrobiological, botanical, paleoecological, entomological and ornithological surveys have been carried out in the past 30 years. At the site a meteorological station has been set up in recent times. Hydraulical research is done by ten observer wells that serve groundwater level data automatically. Biomonitoring researches are the followings: amphibians, reptiles, waterbirds, protected plant species like *Sternbergia colchiciflora* and some associations like *Camphorosmetum annuae* and *Crypsido-Suaedetum maritimae*.

Visitors and researchers can use three observing towers. There is a museum at Kardoskút, Pusztaközpont. "Day of Lake Fehér" is celebrated each year.

There are no significant recreational activities on the site or on its surroundings.

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes  No  Unknown

4.5.2 - Social and cultural values

- i) the site provides 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) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland
- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
- iv) 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

<no data available>

4.6 - Ecological processes

<no data available>

## 5 - How is the Site managed? (Conservation and management)

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

##### Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input type="checkbox"/>

##### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Cooperative/collective (e.g., farmers cooperative)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other types of private/individual owner(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

**a) within the Ramsar site:**

Most of the area belongs to the Hungarian State and is managed by the Körös-Maros National Park Directorate (80 %). The rest is partly private property (14 %), partly the property of the local council (6 %).

**b) in the surrounding area:**

The neighbouring areas mostly belong to private owners (95%).

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Körös-Maros National Park Directorate

Provide the name and title of the person or people with responsibility for the wetland:

Greksza János

Postal address:

H-5540, Szarvas, Anna-liget 1

E-mail address:

janos.greksza@kmnp.hu

## 5.2 - Ecological character threats and responses (Management)

### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

#### Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Drainage	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

#### Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Non specified	Low impact	High impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

#### Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species	unknown impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

#### Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Agricultural and forestry effluents			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Please describe any other threats (optional):

a) within the Ramsar site:

Drainage of the former extensive wetland system has a fairly negative impact on the area.

b) in the surrounding area:

Next to the area intensified agricultural activity may have an adverse impact on the wetland in the future.

## 5.2.2 - Legal conservation status

### Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
EU Natura 2000	Lake Fehér at Kardoskút		whole

### National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Park	Körös-Maros		partly
Nature Reserve	Lake Fehér at Kardoskút		whole
Special Area of Conservation	Hódmezővásárhely környéki és csanádi-háti puszták		partly
Special Protection Area	Csanádi puszták		partly

## 5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve

Ib Wilderness Area: protected area managed mainly for wilderness protection

II National Park: protected area managed mainly for ecosystem protection and recreation

III Natural Monument: protected area managed mainly for conservation of specific natural features

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

## 5.2.4 - Key conservation measures

### Habitat

Measures	Status
Hydrology management/restoration	Proposed
Habitat manipulation/enhancement	Implemented

### Human Activities

Measures	Status
Management of water abstraction/takes	Implemented

### Other:

Planned management measures: restoration of previous water regime of Lake Fehér at Kardoskút.

The management plan of the Lake Fehér at Kardoskút is under preparation.

The main management problems of the site have been solved. Grasslands and reedbeds are managed in harmony with the purposes of nature conservation.

In recent years the following restoration works have been implemented in the area: (1) restoration of the environment of Lófogó creek by eliminating drainage channels; (2) restoration of grasslands.

### 5.2.5 - Management planning

Is there a site-specific management plan for the site? In preparation

Has a management effectiveness assessment been undertaken for the site? Yes  No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes  No

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

Visitors and researchers can use three observing towers. There is a museum at Kardoskút, Pusztaközpont. "Day of Lake Fehér" is celebrated each year.

### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

Further information

Planned management measures: restoration of previous water regime of Lake Fehér at Kardoskút.

In recent years the following restoration works have been implemented in the area: (1) restoration of the environment of Lófogó creek by eliminating drainage channels; (2) restoration of grasslands.

### 5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Plant community	Implemented
Animal community	Implemented
Water regime monitoring	Implemented

Biomonitoring researches are the followings: amphibians, reptiles, waterbirds, protected plant species like *Sternbergia colchiciflora* and some associations like *Camphorosmetum annuae* and *Crypsido-Suaedetum maritimae*.  
Hydraulical research is done by ten observer wells that serve groundwater level data automatically.

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

See additional document for bibliographical references.

#### 6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<1 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

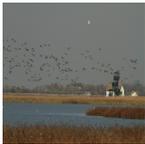
<no file available>

vi. other published literature

<1 file(s) uploaded>

#### 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



The Research Station by  
Lake Fehér at Kardoskút (   
Antal Széll ; Körös-Mecsek  
National Park Directorate,  
31-10-2010 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 1979-04-11