Information Sheet on Ramsar Wetlands (RIS)

KIZÖREN OBROUK / Republic of Turkey

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2. Date this sheet was completed/updated

31.01.2006

3. Country:

Republic of Turkey

4. Name of the Ramsar Site

Kızören Obrouk

5. Map of Site included

A site map of 1:25 000 scale and providing the characteristics indicated in the Annex III of this guideline is included in this package.

a) **Hard Copy**: YES
b) **Digital (electronic) Format:** YES

6. Geographical Coordinates:

33°20E, 38°20N [ED 50 UTM Zone 36) **5**16^{300} E., **42**25^{400} N]

7. General Location:

Turkey is separated into 82 administrative districts. As regards areal extension, Konya is the largest district of Turkey. It's also the 4th biggest city with approximately 2 million habitants. Kızören Obrouk is situated in Konya district. The distance of it to the center of the city is approximately 70 km (towards the east of the district). The subdivision in which the Kızören Obrouk is located, is Obruk and it's 2 km far from the site.

8. Elevation:

970 m (the elevation of the plain on which the Obrouk was formed)

9. Area:

127 hectars

10. Overview:

Kızören Obrouk is situated in the middle of huge Central Anatolia steppic plains. That's why it's an important water point in this arid region. This special morphologic element can be described as "the window of the Earth", because its water is not an ordinary one, it's groundwater. The Kızören Obrouk is a non-typical example of karst morphology. One can identify it as "doline",

however it differs from dolines with its formation mechanism. The mechanisms of its formation is explained with details in following sections.

Around the site a typical step flora can be observed. As regards the vegetation cover, the plain on which the Kızören Obrouk is situated (Obrouk Plain) is very important. It contains a lot of IPA and Bern Convention species.

11. Ramsar Criteria

1	2	3	4	5	6	7	8

12. Justification for the application of each Criterion listed in 11. above

Criterion 1

Obrouk is a special element of karst hydrogeology. Kızören which is a good example of Anatolian obrouks, is a deep freshwater (actually groundwater) lake formed in a karstic depression. In fact, the main factor controlling its formation is karstification. That's why Kızören Obrouk can be identified as "Subterranean Karst & Cave Hydrogeological System" with Ramsar's "Zk" code. It is designated as a Ramsar Site according to Criterion 1.

Dolines are recharge elements of karst hydrologic systems. Their diameters are greater than their depth and this is their main difference from ponors (sinkholes). They have two main types; solution dolines and collapse dolines.

Dolines and other karstic depressions (sinkholes, poljés) are common in every country having large fields with carbonate rocks. However it's rare to see collapse dolines on Neogeneous formations. Generally this kind of geomorphologic elements occurs on Mesozoic (or older) limestones having an intensive tectonic history. On Neogeneous formations, karstification is not expected to be well developed because of the lack of major tectonic movements (i.e. Alpine orogenesis). But in Central Anatolia, the volcanic activities increased the carbonic acid concentration and then the aggressivity of groundwater. Thus the karstification developed in two direction (downwards; from the surface towards the ground, through minor cracks and joints by infiltration., upwards; from the karstic underground cavities towards the surface, through minor cracks and joints by evaporation). This mechanism accelerated the unexpected intensive corrosion. This kind of dolines (formed by both mechanisms) are called Obrouks. Kızören is a good example of obrouks in which one can observe the groundwater.

Criterion 2

As regards the vegetation cover, the plain on which the Kızören Obrouk is situated (Obrouk Plain) is very important. It contains a lot of IPA and Bern Convention species.

The site contains 9 globally threatened plant species (including 2 species of Bern Convention Annex I). These are;

Acantholimon halophilum, endemic
Allium sieheanum, endemic,globally threatened
A. Vuralii, endemic, Bern Convention Annex I liste
Astragalus cicerellus, endemic,globally threatened
Gladiolus halophilus, endemic,globally threatened
Lepidium caespitosum, endemic,globally threatened
Limonium lilacinum, endemic,globally threatened

Sphaerophysa kotschyana, endemic, Bern Convention Annex I liste
Verbascum pyroliforme endemic,globally threatened
(see also section 19 of the RIS)

13. Biogeography
a) biogeographic region:
Mediterranean Xeric Continental (Bioclimate), Lower Dry Lower Supramediterranean (Bioclimatic Zone)
Anatolian (Council Directive 92/43/EEC)

It represents Iran – Touran Biogeographical Region's characteristics with temperate grasslands (steppes) and semiarid – arid climate.

b) biogeographic regionalisation scheme:
http://www.runet.edu/~swoodwar/CLASSES/GEOG235/biomes/main.html/#tabcont
Kılıç, T., Eken, G., Turkey's Important Bird Areas 2004 Update., Doğa Derneği, Birdlife Int., 2004
Council Directive 92/43/EEC

14. Physical features of the site
Kızören Obrouk is situated in the southern part of the Konya Closed Basin. Until Miocene age of geological times, this basin was a freshwater lake of 25 m depth. Following Miocene climatic changes, the media turned to be semiarid and this huge wetland dissapeared. Relict parts of it are represented by several small shallow lakes such as Tersakan, Bolluk, Kulu etc..That's why now the main geomorphology is a totally flat plain. The main geological unit is neogene limestone which was deposited by this paleo-lake. As this region was not affected from major tectonic movements, sedimentary stratum is horizontal. However the existence of some volcanic intrusions increased the H_2CO_3 concentration of the groundwater and accelerated the unusual karstification in the area. Thus the main physical units are some karstic collapses (obrouks), 7 small volcanos and the steppic plain which seems like endless.

Hydrogeological units around the site are neogene karst aquifers and the alluvial cover. Related to the drought and the past over-usages, groundwater level of the alluvial unconfined aquifers decreased significantly. That's why actually there's no exploitation in this unit. For agricultural purposes (irrigation etc.) and other human originated usage, the groundwater obtained from the karstic aquifers by deep wells is being used.

15. Physical features of the catchment area
Main geomorphological elements and the lithology of the basin are the same with the vicinity of the site. Except this similarity, in different parts of the Konya Closed Basin, some shallow lakes (relict ponds of the Miocene lake) can be seen. The altitude of the basin varies between 950 m and 1100 m.

For large human settlements (Konya, Çumra, Ereğli, etc), small stream waters on which small dams (Altinapa, Apa, May, etc..) have been installed are being used. The majority of these small streams are temporary and one can say that the fluvial regime in the basin is negligible. The main water movement is the karstic groundwater flux towards the eastern boundary of the basin (Tuz Gölü – Salt Lake) and it forms the main discharge unit.

16. Hydrological Values
As regards hydrogeological functioning, Kızören Obrouk is very important for its region. As it was mentioned above, this ecosystem is situated on a huge, arid steppic plain and around its

vicinity, Kızören Obrouk is the only freshwater source. That's why State Water Institute (DSI) installed a pump in order to provide freshwater for human use.

Neogeneous limestone aquifer on which the obrouk was formed extends towards Tuz Golu (Salt Lake) and its groundwater is one of the major recharge elements of this great wetland ecosystem. Thus, the equilibrium status between the usage of this groundwater for human use and the natural discharge to Tuz Golu has vital importance for Konya Closed basin.

17. Wetland types

a) presence

Kızören Obrouk is a window-like karst morphological element in which one can observe groundwater. As regards Ramsar Classification, it can be identified as "inland karstic wetland ecosystem"

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:

Obrouk lake : permanent freshwater lake – O – 2,5 hectars
Connected caves and related cultural elements: Zk (b) 120 hectars – 125 hectars

18. General ecological features

Within the Ramsar site, the dominant vegetation cover is mainly formed by steppic plants, resistant to arid climatic condition and which can survive even if the chemical content of the soil is calcium carbonate dominant. These are *Frankenia hirsuta, Lepidium cartilagineum ssp. Crasssifolium, Panderia pilosa* and *Suaeda altissima*. On the other hand there is 9 globally threatened (and also endemic) taxon making this site globally important; *Acantholimon halophilum, Allium sieheanum, A. Vuralii, Astragalus cicerellus, Gladiolus halophilus, Lepidium caespitosum, Limonium lilacinum, Sphaerophysa kotschyana, verbascum pyroliforme* (Important Plant Areas of Turkey., 2003., WWF Turkey).

19. Noteworthy flora:

The site contains 9 globally threatened plant species (including 2 species of Bern Convention Annex I). These are;

Acantholimon halophilum, endemic
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20. Noteworthy fauna:
In the nearest proximity of the Ramsar site, *Otis tarda* (Great Bustard) and *Tetrax tetrax* (Little Bustard) are told to be observed. Infact, the entire plain is one of the last surviving area of these species. This existence makes this site globally important as regards ornithological values. Besides, Northern Wheatear (*Oenanthe oenanthe*), Mallard (*Anas platyrhynchos*), Marsh Harrier (*Circus aeruginosus*), Coot (*Fulica atra*), Black – winged Stilt (*Himantopus himantopus*), Lapwing (*Vanellus vanellus*), Ruddy Shelduck (*Tadorna ferruginea*), Teal (*Anas crecca*), Redshank (*Tringa totanus*) are species that anyone can watch there irregularly.

21. Social and cultural values
As the site is an important water point for the region, during the history a lot of civilization installed their settlements around it. The known history goes back to the Byzantine time. Just near to the obrouk, a caravanserail for passengers was installed during that time. The dimensions of this caravanserail shows the importance of this point for Silk Road.

After Byzantine Empire, Seldjukis came to this land and established a village around this caravanserail. The mosque with a short, thick minaret is a typical example of Seldjuki architecture. There are some houses reflecting the influence of that time. Then, the area became Ottoman territory like entire Anatolia and its surroundings. During Ottoman Empire, the caravanserail passed a restoration and continued to its functioning. Now this historical structure waits for a full restoration.

22. Land tenure / ownership:
(a) Within the Ramsar site:
The entire Ramsar site is governmental lands, there's no private property.

(b) in the surroundings/catchment:
In the surrounding area, there are cultivated private properties and also governmental steppic lands.

23. Current land (including water) use:
(a) Within the Ramsar site:
There are some private properties, but the majority of the area is governmental. Governmental lands are non-used areas. The main water use is being realized by DSI (State Water Inst.). DSI takes water for irrigational purpose.
(b) in the surroundings/catchment:
There are deep groundwater wells around the area and they're being used for irrigation. The agricultural pattern is mostly wheat which doesn't require huge amounts of water.

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:
As regards demographical density, the area on which the Ramsar site is situated is one of the weakest places in Turkey. That's why there's no significant pressure on it.

(b) in the surroundings/catchment:
In the surroundings, as it's seen in entire Konya Closed Basin (or let's say Central Anatolia), a geohydrological problem is very obvious. The hydrologically dry period contiued longer than ever (8 years), the farmers used groundwater more than they should do and an unexpected humanmade disaster (the climate change) occured. Then the groundwater

levels of the unconfined aquifer overlaying the basin decreased significantly. Now only the water of the confined karstic aquifer can be used for irrigational purposes.

25. Conservation measures taken

The area containing Kızören Obrouk was declared "Archaeological SITE of 1st Degree" by Ministry of Culture & Tourism. With this protection status, all activities (except educational and scientific activities) were restricted. The Ramsar boundary is larger than these boundaries and they're included in it.

26. Conservation measures proposed but not yet implemented

Actually no plan has been developed for the future. The reason of this application is that, there is no any land use scheme in the area. These protection status are enough to organize existing and future interests and improve conservation - wise use of Kızören Obrouk.

27. Current scientific research and facilities

The basis of all scientific knowledge was established by different scientists. On the other hand, a local university (University of Selcuk, Konya) is currently implementing research activities on different disciplines (geology, hydrogeology, biology, chemistry, etc.). Also, the area is regularly being observed by ornithologists and bird watching groups.

28. Current conservation education

Following the designation of Kızören Obrouk as a Ramsar Site, relevant educational and touristic guides and materials will be prepared. A visitor center is planned to be established on the ruines of the Caravanserail (by means of restoration). The site will be promoted to primary schools in order to be included in their annual field trip schedule and to tourism agencies.

29. Current recreation and tourism

Obrouk village is located just on the famous "Silk Road". Each year, many tourists come to this location to see the Caravanserail. Also there is a "Anatolian Wild Sheep" conservation zone (Boz Tepe) approximately 20 km far from the Obrouk. This existence also becomes a reason to see the area. Following the declaration of this location as Ramsar site, some indicators and arrows will be installed on main routes in the area and it's obvious that the number of these visitors will be increased.

30. Jurisdiction

The area is under responsability of different authorities;

The Ministry of Environment & Forestry (Department of National Parks) is responsible because of the "Ramsar Site" status

The Ministry of Environment & Forestry (Department of Nature Conservation) is responsible because of the "Anatolian WİId Sheep Conservation and Reproduction Area"

The Ministry of Culture & Tourism is responsible because of "Archaelogical SIT area of 1st Degree" status

However the National Wetlands Committee (the uppermost decision making mechanism on wetlands) is the main responsible and it also provides the coordination among these authorities. The Governor of Konya District implements the legislation with the name of these authorities.

31. Management authority

- Ministry of Environment & Forestry, General Directorate of Nature Conservation and National Parks, Wetlands Division: Nilda Ozen ERGUR (Agricultural Engineer, M.Sc), Istanbul Cad. No:98, Iskitler Ankara TURKEY, Tel: 0090 312 3840510, Fax: 0090 312 3842476., email: *nildaergur@cevreorman.gov.tr*

- Provincial Directorate of Environment & Forestry of Konya., Konya Çevre ve Orman Müdürlüğü., Meram Eski Yol No:4., Tel: 0090 332 3226872., Fax: 0090 332 3216171., email: *ilcevre@konyacevre.gov.tr*

32. Bibliographical references

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