

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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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

December 2007

3. Country:

Turkey

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.

Kızılırmak Delta (Kızılırmak Deltası)

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:

Serious Eutrophication in Lakes

Improper interventions and excessive pollution after agricultural chemicals resulted in increase in nitrogen and phosphorus amount in the water; which annihilates life in the lakes.

Loss of Galerîç Forest in Yörükler Province

Destruction and opening for secondary house structuring. In these areas, which are within Ramsar boundaries, construction of settlements is forbidden, and any kind of activity is subject to permission of Ministry of Environment and Forestry. Forest destruction and shanty settlements has started in 1990s and continued to accelerate towards present. Over 300 second houses are constructed on an area of 73 ha.

Coastal Erosion

Sediment movement by Kızılırmak River sharply decreased especially following the construction of Altınkaya Dam in 1987, and almost came to a stop after the recent construction of Derbent Dam. Prior to construction of dams (till the 1960) 23.1 million tons of sediments were carried by Kızılırmak, after the construction of Derbent dam this figure decreased down to 0.46 million tons (Savran and Dig, 2002)

Settlements Issue

Settlements concurrently increases illegal and unsupervised use of regional resources like sand and gravel, which results in destruction of coastal dunes.

Wind Erosion

High coastal dunes has formed on the west side of the delta. The coast line from Alacam to Kızılıram estuary is fully exposed to wind erosion. Dune movements in this region is a threat for settlements and agricultural fields.

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.

Existing protected areas (natural site, wildlife protection area).

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.

41°40' N, 36°05' E

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 Kızılırmak Delta is located along the Black Sea coast, between the cities of Sinop and Samsun and stretches from 41°30' to 41°45' N and from 35°43' to 36°08' E. Kızılırmak Delta is within the borders of Ondokuz Mayıs, Bafra and Alaçam counties of Samsun province.

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

Sea level

11. Area: (in hectares)

21, 700 ha (Ramsar area)

Delta surface area in total 56.000 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.

Wetlands are dynamic areas exposed to natural and human impacts. There is a need for conservation of biodiversity and natural resources of such areas and wise use of area resources. Being composed of habitats having different ecological characters such as the areas of sea, river, lake, reed-bed, bog, meadow, pasture, forest, sand dune, agriculture and, richness from the standpoint of food and suitable climate conditions, have provided the delta to have unique biological variation. There are several lakes in the delta. In the west side of the river are Karaboğaz lake and Mülk lake, in the east are Balık lake, Uzun lake, Gıcı lake, Tatlı lake, Cernek lake, Liman lake, Alımlı lake, Paralı lake, Tuzlu lake and Sülüklü lake are situated.

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).

Group A Criteria

Criterion 1 – Kızılırmak Delta is a very good example of well protected coastal wetland . This kind of ecosystem can be considered as representative habitat within the Black Sea biogeographic region

Group B Criteria

Criterion 2 – The Delta hosts a great number of endangered flora and fauna species together with endangered habitat types which harbours. (for Fish and Birds see criteria 4 and Annex I below)

Some endangered flora species has given in tables below (National and International IUCN Criterias and Bern Convention). This information is provided by data of Management Plan of Kizilirmak Delta.

Table 1. Important flora species in Kizilirmak Delta

Family	Name	IUCN criteria (Global)	IUCN criteria (National)	Bern Criteria
Aceraceae	<i>Acer campestre subsp. campestre</i>	-		-
Alismataceae	<i>Alisma lanceolatum</i>	-	-	-
Alismataceae	<i>Alisma plantago-aquatica</i>	-	-	-
Alismataceae	<i>Alisma plantago-aquatica</i>	-	-	-
Amaryllidaceae	<i>Pancratium maritimum</i>	-	EN	-
Amaryllidaceae	<i>Leucojum aestivum</i>	-	VU	-
Compositae	<i>Jurinea kilaea</i>		VU	-
Compositae	<i>Rhaponticum serratuloides</i>		EN	-
Thelypteridaceae	<i>Thelypteris palustris</i>		VU	-

Table 2. Distribution of Aquatic flora species in Lakes in Kizilirmak Delta

Species	Lake Name
<i>Lemna minor</i>	Cernek Lake
<i>Ceratophyllum demersum</i>	
<i>Potamogeton pectinatus</i>	
<i>Potamogeton bechtoldii</i>	
<i>Juncus articulatus</i>	
<i>Schoenoplectus littoralis</i>	
<i>Juncus heldreichianus</i> supsp	
<i>heldreichianus</i>	
<i>Butomus umbellatus</i>	
<i>Lemna minor</i>	Balıklı Lake
<i>Myriophyllum spicatum</i>	
<i>Ceratophyllum demersum</i>	
<i>Potamogeton crispus</i>	
<i>Potamogeton perfoliatus</i>	
<i>Potamogeton pectinatus</i>	
<i>Lemna minor</i>	Karaboğaz Lake
<i>Ceratophyllum demersum</i>	
<i>Myriophyllum spicatum</i>	
<i>Potamogeton natans</i>	
<i>Potamogeton berchtoldii</i>	
<i>Glycyrrhiza glabra</i>	
<i>Sparganium erectum</i>	
<i>Potamogeton pectinatus</i>	
<i>Phragmites australis</i>	
<i>Typha angustifolia</i>	
<i>Schoenoplectus littoralis</i>	
<i>Juncus littoralis</i>	
<i>Butomus umbellatus</i>	Gıcı Lake
<i>Lemna minor</i>	
<i>Ceratophyllum demersum</i>	
<i>Myriophyllum spicatum</i>	
<i>Potamogeton lucens</i>	
<i>Nymphaea alba</i>	
<i>Paspalum paspalodes</i>	
<i>Phragmites australis</i>	
<i>Sparganium erectum</i>	
<i>Typha domingensis</i>	
<i>Ceratophyllum demersum</i>	Tatlı Lake
<i>Myriophyllum spicatum</i>	
<i>Potamogeton lucens</i>	
<i>Myriophyllum spicatum</i>	Uzun Lake
<i>Ruppia maritima</i>	
<i>Chara sp</i>	
<i>Potamogeton nodosus</i>	
<i>Hydrocharis morsus-ranae</i>	
<i>Carex atrata</i>	

Criterion 3 – Delta, being the primary habitat for a great number of species in Black Sea meets this criterion.

Main habitat types which include important species are determined as 10 classes which has given as below ;

1. Sea
2. Salt lake mirror: Balık, Uzun, Cernek, Liman, Karaboğaz and Mülk Lakes have been classified as salt lakes by salt ratio. In Liman Lake, there are rich vegetation of rock plants from Characeae family .
3. Freshwater lake mirror: Tatlı ve Gıcı Lakes are in this habitat group. East lakes of Delta, many species of *Potamogeton* Family and other water plants are very rare. In coastal sides of lakes, *Phragmites australis* and *Thypha* sp. or *Juncus acutus* are seen.
4. River: This habitat includes Kızılırmak River bed, and Geleric Forest nearby of the river.
5. Wet meadow land: Some periods of the year, wet meadow land are accumulated with water where nearest the lakes. That is *Paspalum paspalodes meadow land*.
6. Reedy lands: This habitat group includes *Phragmites australis* and *Typha angustifolia*, *inpatches Schoenoplectus lacustris* groups.
7. Salty marshes: *Juncus littoralis* - *Artemisia santonicum* - *Tamarix* - *Vitex agnus-castus* and in saltier areas *Salicornia europaea* are dominant.
8. Mixed wide leaved forests: Generally, *Quercus robur* and *Carpinus betulus* species are composed these forests
9. Mixed wide leaved mangrove forest: In Geleric Forest, *Fraxinus angustifolia* - *Frangula alnus* - *Quercus robur* - *Smilax excelsa* are composed seasonally mangrove forest.
10. Coastal sand dune: *Euphorbia* sp and *Pancratium maritimum* *Verbascum* sp. And *Cyperus capitatus* are seen dominantly on sand dunes especially near Cernek Lake.

Criterion 4 – Kızılırmak Delta is an area where many avian species and fish species concentrates in particular periods (wintering, breeding, feeding, overnight stays) of their life cycles.

Water birds species are listed under Annex I while the fish species in Delta of Kizilirmak are the following:

Table 3. Fish Species in Kizilirmak Delta

Species Name	IUCN (Global)	IUCN National	Bern Conven.	EU Habitat Directive
VERTEBRATA				
SINIF: OSTEICHTHYES				
Acipenseridae				
<i>Acipenser gueldenstaedtii</i>	EN	EN		
<i>Acipenser nudiiventris</i>	EN	EN		
<i>Acipenser stellatus</i>	EN	EN	Annexe III	
<i>Acipenser sturio</i>	CR	NE	Annexe II	Annexe II
<i>Huso huso</i>	EN	EN	Annexe II	
Anguillidae				
<i>Anguilla anguilla</i>	NE	NE		
Clupeidae				

Species Name	IUCN (Global)	IUCN National	Bern Conven.	EU Habitat Directive
<i>Alosa caspia</i>	NE	NE		Annexe II
<i>Alosa pontica</i>	DD	NE	Annexe III	Annexe II
<i>Alosa tanaica (A. caspia tanaica)</i>	NE	NE		Annexe II
Cyprinidae				
<i>Barbus plebejus</i>	LC	NE	Annexe III	Annexe II
<i>Barbus tauricus escherichi</i>	NE	NE		
<i>Capoeta capoeta sieboldi</i>	NE	NE		
<i>Carassius gibelio</i>	NE	NE		
<i>Chalcalburnus chalcoides</i>	DD	NE	Annexe III	Annexe II
<i>Cyprinus carpio</i>	DD	NE		
<i>Rhodeus sericeus amarus</i>	LC	NE	Annexe III	Annexe II
<i>Scardinius erythrophthalmus</i>	LC	NE		
<i>Vimba vimba</i>	LC	NE	Annexe III	
Cyprinodontidae				
<i>Aphanius danfordii</i>	NE	(EN)		
Poeciliidae				
<i>Gambusia affinis</i>	NE	NE		
Syngnathidae				
<i>Syngnathus abaster</i>	DD	NE	Annexe III	
Gasterosteidae				
<i>Gasterosteus aculeatus aculeatus</i>	LC	NE		
Gobiidae				
<i>Knipowitschia caucasica</i>	LC	NE		
<i>Neogobius fluviatilis fluviatilis</i>	DD	NE	Annexe III	
<i>Neogobius melanostomus</i>	DD	NE		

Species Name	IUCN (Global)	IUCN National	Bern Conven.	EU Habitat Directive
<i>Proterorhinus marmoratus</i>	LC	NE	Annexe III	
Percidae				
<i>Perca fluviatilis</i>	LC	NE		
<i>Stizostedion lucioperca</i>	LC	NE		
Mugilidae				
<i>Mugil cephalus</i>	NE	NE		

Criterion 5 – Delta, harboring more than 20 000 water birds throughout the year. Species names are listed in Annex I.

All the information about birds have given under this criteria, so criterion 6 would be explained under this topic.

Table 4 . Bird species in Kizilirmak Delta

Criterion 6 – Delta, hosting % 1 of regional and/or world population of many avian species (such as *Aythya ferina*, *Anas crecca*, *Fulica atra*, *Netta rufina*) meets this criterion. This area is wintering place for these species.

- *Fulica atra*, 27.511 – 49.000 Individuals (1% is 20000 individuals in Europe)
- *Anas cracca*, 30.000 Individuals (1% are 10.600 individuals in Europe)
- *Netta rufina*, 1826 - 2496 Individuals (1% are 320 individuals sin Europe)
- *Aythya ferina*, 2772 – 14952 Individauls (1% are 10.000 individuals in Europe)

Criteria 7 Species are identified in criterion 4.

Beside, the Delta provides Indigenous species such as *Acipenser nudiventris*, *Acipenser stellatus*. There is no information about population of these species. But *A. nudiventris* , *A. stellatus* lives in big river systems.

Criterion 8 – The Delta harbours endangered fish species during critical stages of their life cycles. It is one of the 3 breeding areas of *Acipenser gueldenstaedtii*, *Acipenser nudiventris*, *Acipenser stellatus*, *Acipenser sturio*, *Huso huso*. There is no information about population of these species though.

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:

Black Sea

b) biogeographic regionalisation scheme (include reference citation):

Map of the biogeographic regions of Europe, after EEA's map.

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.

Hydrological Data

Kızılırmak River with drainage basin (82180 km²), second only to the Fırat River, is the most important watercourse in the region.

After 1950s drainage canals has been opened by State Hydraulic Works for combating malaria, making agricultural fields and irrigation.

Stated canals are located on west and east coasts of Kızılırmak Delta. 13 of the total 30 drainage canals are located on the east coast. These are; Badut, Bakıpınar, BDT-1, Boytar, Çorak, Düden, Hacelar, Hızır İlyas, Karaköy, Koşuköy, Kumsalçay, Peskeller and Üçpınar.

Of these drainage canals only Boytar and BDT-1 runs to Black Sea. The other canals feed the lakes in the delta. Koşuköy canal discharges drained waters to Tuzlu Lake, Hacılar and Çorak canals to Liman Lake, Badut and Düden canals to Cernek Lake, Bakıpınar and Peskeller canals to Gıcı Lake, Karaköy canal to Uzun Lake, Hızır İlyas and Karaköy canals drain to Balık lake.

There are 17 drainage canals on the west coast of Kızılırmak Delta. These are; Başat, Bedeş, Doyran, Fatsalılar, Fener, Göçkün A, Göçkün B, Gökçe, Göltepe, Harız, Hasanbey, Karadere, Karayel, Muamlı, Mülkboğazı, Paşaboğazı ve Selemağrı canals. Doyran, Göçkün A, Göçkün B and Gökçe canals drain to Black Sea. Başat, Fener, Mülkboğazı and Selemağrı drain to Mülk Lake. Others drain to Karaboğaz Lake.

The natural conditions that caused to the formation of delta and coast formation has also led to formation of many small and big lakes in Kızılırmak Delta. These are; on the east coast Balık Lake, Uzun Lake, Gıcı Lake, Tatlı Lake, Altınlı Lake, Paralı Lake, Cernek Lake, Liman Lake, Tuzlu Lake and Sülüklü Lake, on the west coast Karaboğaz Lake and Mülk Lake.

Geology

Following the construction of Altunkaya and Derbent dams considerable changes at coast and coastlines has been observed along with changes at delta lakes.

Kızılırmak Delta has an old plain character related to Kızılırmak River and sea, composed of gravel, sand, silt and clay with a low gradient. Delta rises in steps from sea to the south after a large alluvium plain. Pre-neogen and neogen rock formations for the south border of the Delta (roughly the part in the south of Samsun-Bafra-Alaçam road).

Climate

Climate of Kızılırmak Delta carries all the characteristics of climate of Samsun. Samsun has a generally temperate climate. However climate shows different characteristics at coastal and inland regions. At inland regions effect of Ak Mountain and Canik Mountains is observed. Coastal region

(Central District, Terme, Çarşamba, Bafra, Alaçam, Ondokuz Mayıs, Tekkeköy and Yakakent) is influenced by Black Sea. Therefore coastal region has warm and arid summers, warm and rainy winters, foggy and warm springs (Büyükgüngör, 1996).

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Hydrology

Kızılırmak Delta is formed where, Kızılırmak Basin reaches sea. Kızılırmak Basin has a length of 1355 km and area of 78.646 km², enclosing northeast of Central Anatolia and northwest of Eastern Anatolia.

Kızılırmak springing from Kızıl Mountain (3025) at the east of İmranlı District of Sivas Province; runs 1210 km through Sivas, Kayseri, Nevşehir, Kırşehir, Kırıkkale, Çankırı and Samsun before it reaches Black Sea.

Average flow of Kızılırmak River between 1962-2006 has been calculated as 188.08 m³/s. Nonetheless maximum flows recorded at İnözü station in March and April is 324.01 and 311.67 m³/s respectively. Minimum flow recorded is in August as 95.91 m³/s.

18. Hydrological values:

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

Following the transition to irrigated agriculture increase in irrigation water supply has severely adverse indirect effects on the structure of the delta. Altınkaya and Derbent dams constructed with purposes of energy, flood control and irrigation stopped the sediment movement by Kızılırmak hence the growth of the delta came to a halt. Delta even started to diminish thru coastal current and wave erosion.

Before the construction of the dams (till 1960) Kızılırmak was carrying 23 million tons of sediments to Black Sea, after the completion of Derbent Dam this amount decreased to a mere 0.5 million tons. Following the decrease in sediment flow Black Sea, roughest sea of Turkish coastline, started to erode the delta. Regression reaching up to 1 km has been observed in certain areas, as a precaution spurs are constructed in order to protect the estuary.

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 • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

About dominance, investigations are still going on within Management Plan of Kızılırmak Delta.

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.

There are 3 main habitat types in Kızılırmak Delta which are classified as threatened according to Bern Convention criteria: **Öksin saline swamps, South Black Sea permanent dunes, Southeast Europe ash-oak forests.**

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.*

- *Rhaponticum serratuloides*: (EN)
- *Ambrosia elatior*: Second record in Turkey.
- *Stachys maritima*: Present only in a few dune areas on Black Sea coast.
- *Jurinea kilaea*: (VU) First record in eastern Black Sea coast.
- *Pancratium maritimum*: (EN)
- *Leucojum aestivum*: (VU)
- *Thelypteris palustris*: (VU)
- *Corispermum filifolium*: Fourth record in Turkey.
- *Periploca graeca var. vestita*: Having limited distribution.

22. Noteworthy fauna:

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., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Summary of vertebrates

- 29 fish species (5 facing extinction, critical (CR): 1, endangered (EN):4 and 1 endemic)
- 7 frogs, 2 salamanders.
- 12 reptiles; 2 turtles (1 vulnerable (VU), 5 lizards, and 5 snakes.
- 33 mammals (no endemism, 1 vulnerable (VU)).
- 165 avian species has been recorded in the delta, totaling 300,000 counts.

323 recorded avian species.

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:

The first people who settled in the region were Kaşgas who migrated from the Central Asia around 4000 BC. It is known that there have been settlements in the region since the late Choleolithic age. In the investigations carried out in the region since 1971, 57 tumuluses, 6 plain settlement areas, 48 tumuluses, five rock graves, three graveyards, one bath, one bridge, and 25 findings belonging to the ancient age and just after it, have been found.

One of the oldest settlements determined in the region is İkiztepe which is in the west of the Kızılırmak River and have a distance of 7 km. to the black sea as the crow flies. It has been understood that İkiztepe was in the coast of the Black Sea when it was established and it has also been understood, as a result of the excavations carried out that the people has sustained their life by stock-breeding, hunting and fishing.

Phrygians, Cimmerians, Persians, Romans, Byzantines, Anatolian Seljuk and Ottomans had dominated in the region after the Hittites.

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:

- 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:
- 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:

24. Land tenure/ownership:

a) within the Ramsar site:

The possession of land within the Ramsar area can be categorized as; public property, private property, unregistered and appealed. Biggest problem on coastline, wetlands and surrounding areas are illegal settlements.

b) in the surrounding area:

Public property, private property, unregistered and appealed.

25. Current land (including water) use:

a) within the Ramsar site:

Field Agriculture

Rice is the most intensely cultivated agricultural product on areas close to water. Wheat is intensely planted on rice, vegetable and sugar cane fields in alteration. Cultivated industrial plants are sugar cane, sunflower and small amounts of tobacco.

Livestock and Pasture

Livestock production has an important place in income of local people, most common at the villages around the wetland. Water buffalo is an important element not only for dairy and meat products but also as a part of the wetland ecosystem, and there are important cultural connections between water buffalos and local people.

Fishery

The variety of water resources in the Kızılırmak Delta allows for both sea and inland water fishery. *Huso huso*, *Acipense sp.*, *Siluris glanis*, *Cyprinus karpio L.* and *Scadinus erytrobthalmus* are among the fish species found in Kızılırmak. There are 4 fishery cooperatives.

Reed Harvesting

Reeds can be harvested between 1 August – 28 February depending on weather conditions. Reed harvesting is an income source for people leaving around wetlands.

Gathering

Frogs and leeches are collected from lakes *leucojum aestivum* is collected on land. 10 years ago these wild plants were being collected to the amounts reaching 25 tons, today this amounts to 1-1,5 tons.

b) in the surroundings/catchment:

As a result of intense chemical fertilizer applications not based on soil analysis serious problems has been encountered in soil and subsurface water.

Agriculture

Agriculture is the most common land use practice in Kızılırmak Delta. Agricultural production is expected to increase particularly after irrigation and drainage systems are finished.

Rice is one of the most intensely cultivated product at areas close to water with a plantation of 6.375 ha. Wheat is intensely planted on rice, vegetable and sugar crane fields in alteration. In recent years with the increase in seed quality yield of wheat production raised to 600kg/decar.

Production of summer and winter vegetables has considerably developed following irrigation and drainage works.

Livestock and Pasture

Livestock production has an important place in income of local people. In 1995 there were 16,679 cattle and 20,426 sheep in the region, 2007 figures are 16,551 cattle and 16,420 sheep. There are also 500 wild horses and 2 camels (Anon, 2007b). Kızılırmak has Turkey's largest wild buffalo population. Number of water buffalos decreased sharply in last 15 years, from 10,000 in 1995 to 2,800 in 2007.

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:

There is an ongoing irrigation project by State Hydraulic Works.

b) in the surrounding area: Ramsar alanı dışındaki alanındaki yatırımlar.

Dams Constructed on Kızılırmak River

The natural progress of Kızılırmak Delta which started forming about 10 thousand years ago particularly slowed down after construction of Altinkaya Dam in 1987 and almost came to an end after the construction of the late Derbent Dam.

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.

Kızılırmak Delta has primary, secondary and tertiary Natural Site, Wildlife Development Area and Ramsar Area statuses.

Natural Sites: A large part of the delta has been designated as I, II, III. Degree Natureal Site as of 21.4.1994.

Wildlife Development Area: Cernek Lake and surroundings has been designated as Wildlife development Area as of 1979, the areas has been enlarged in 2005.

Ramsar Area: Delta has been included in the Ramsar list in 1998

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?:

Being prepared.

d) Describe any other current management practices:

Ministry of Culture and Tourism:

Ministry and its local branch are responsible for the “Natural Site” status of the area, perform publicity studies.

Samsun Regional Board for Protection of Cultural and Natural Entities:

Any kind of practices in the area must have approval of the board because of the Natural Site status.

State Hydraulic Works (DSİ):

Responsible for preparation and implementation of irrigation, drainage, well drilling, hydraulic energy projects. Any activities within Ramsar area is subject to permission of Ministry of Environment and Forestry.

Ministry of Agriculture and Rural Affairs:

Ministry is responsible and authorized for all the agricultural practices in the area.

Local Administrations:

Municipalities and governership are nvolved in the inspection of activities within Natural Site zones as stated in the bylaw.

28. Conservation measures proposed but not yet implemented:

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

Official Management Plan is currently being prepared. Protection zones are expected to be established within a year.

29. Current scientific research and facilities:

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

Staff of Ondokuz Mayıs University, located within Samsun, are performing numerous scientific studies.

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.

Management plan will bring a variety of activities.

31. Current recreation and tourism:

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

There are no recreation activities as yet. Tourism potential is being determined.

32. Jurisdiction:

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

Ministry of Environment and Forestry

Ministry of Environment and Forestry is responsible for management of wetlands in Kızılırmak Delta. Determination, monitoring and supervision of activities and usage within the boundaries that is established according to the international Ramsar Convention is within the ministry's authority and obligation.

Ministry of Environment and Forestry,
General Directorate of Nature Conservation and National Parks
B Block, Office: 4
Söğütözü Caddesi 14/E
Bestepe/ANKARA, TURKEY

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.

Fatih BULUT DKMP Engineer

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Nature Conservation and National Parks (DKMP)
19 Mayıs Ward Agabali Street No:13/A
55040
Samsun/TURKEY

samsun@cevreorman.gov.tr

34. Bibliographical references:

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

Kızılırmak Delta management plan 1st final report.

IUCN Red Data Book List, (<http://www.iucnredlist.org/>)

Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
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