

## RAMSAR WETLANDS CONSERVATION SCHEDULE

Ratified by the Conference of parties by Rec. C.4.7 in Montreux, Switzerland - July 1990.

1. Contry : Republic of Turkey 2. Date : 3. Ref. 7 TR 001

4. Name of wetland : Delta of Göksu

5. Ramsar criteria : (State and justify which Ramsar criteria as adopted by Rec C.4.15 of the Montreux conference are applicable):

-A wetland should be considered internationally important if it is particularly a good example of a specific type of wetland characteristic of its region.

-It supports an appreciable assemblage of rare vulnerable or endangered species or subspecies of plant or animal or an appreciable number of individuals of any one or more of these spscies,

-It regularly supports 20,000 waterfowl,

-It regularly supports substantial numbers of individuals from particular groups of waterfowl indicative of wetland values, productivity or diversity,

6. Wetland type :(as presented in guidelines, based on Montreux Rec.c 4.7)

Freshwater Lake, Saltwater Lake, Delta

7. Date of selection for Ramsar:17.05.1994.
8. Geographical coordinates : 36° 20' North, 33° 59' East.
9. Altitude (average and/or maximum or minimum):0-5
10. Area (in hectares):15,000 ha.
11. General location (e.g. administrative region and nearest large town):

The Delta of Göksu Special Environmental Protection Zone is located on the strandplain formed by the River Göksu to the south of Silifke district in İçel which is on the piedmont of midrange Taurus Mountains.

12. Overview (general summary, in two or three sentences, of the wetland's principal characteristics):

The wetland ecosystem of the Delta of Göksu includes Paradeniz Lagoon and Akgöl Lake which were formed as a result of bed displacements of the River Göksu and sea movements. The ecosystem also covers reedlands, marshes, swamps, meadows and agricultural fields in the surrounding area, and sand-dunes between the lake, lagoon and the sea.

13. Physical features (e.g. geology, geomorphological origin - natural or artificial; hydrology; soil type; water quality; water depth; water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate:

Paradeniz Lagoon is relatively salty owing to its opening to the sea. Salinity decreases up north where freshwater flows into it.

The region displays a folded and faulty structure, and thaw gaps as a result of fault and karst formations owing to the intensive movements throughout its geological evolution.

The region is abundant in underground and surface water sources. Many sources are karst groundwater used for irrigation. Groundwater is found at 5-15 meters.

As the Delta of Göksu is located on the Mediterranean coast region, it shows the typical characteristics of the Mediterranean climate: warm and dry summers, mild and rainy winters.

- Highest average temperature: 38.8°C
- Highest temperature: 43.0° (25.08.1958)
- Lowest average temperature: 4.9°C
- Number of warm days: 183 days
- Yearly average temperature: 18.5°C

- Date of strongest wind: West-Northwest, February 1967, 125 km/h
- Minimum and maximum sea temperatures: 16.0°C and 26.0°C
- Minimum humidity: 12%
- Maximum humidity: 87%
- Average humidity: 66%
- Yearly average precipitation: 643.4 mm/m<sup>2</sup>

The region is rich in soil structure. Four types of soil are dominant: Alluvium, Colluvium, Brown Earth and Red Mediterranean. The soil structure comprises 3/4 alluvium. Colluvium and other types form the remaining 1/4.

14. **Ecological features (main habitats)** : Total square area of reedlands, marshes and lakes in the Delta covers 2130 hectares. Sands and salty steppes cover an area of up to 5300 hectares. In particular, the northern parts of Akgöl Lake are covered with intensive and thick reedlands of 50 to 200 meter wide. The passages between the reedlands and the sand-dunes and salty steppes have sea reed (Balbus

choenus maritimus), short bushes (Genistrasp) and bulrushes.

Salicornia species are dominant around Paradeniz Lagoon. Sporadic reedlands are also present.

The various habitats of the region of agricultural fields, reeds, salt and freshwater ecosystems, wide and dense reedlands, marshes, barren lands and wide dunes have helped the formation of rich and diverse vegetation, and settlement of many species which require different habitats.

**15. Land tenure / ownership of:**

**a) Site**

The area is government property.

**b) Surrounding area:** Private property agricultural fields.

**16. Conservation measures taken (national category and legal status of protected areas-including any boundry changes which have been made;management**

ptacties; whether an officially approved management plan exist and whether it has been implemented)

The Delta of Göksu was designated a Special Environmental Protection Zone pursuant to a Cabinet Decision dated 2 March 1990. Moreover the area of 4350 hectares including Akgöl Lake and Paradeniz Lagoon is a water birds protection and reproduction zone.

17. Conservation measures proposed but not yet implemented(e.g. management plan in preparation; officially proposed as a protected area,etc.)

The Private Environmental Protection Institute and Society for the Protection of Wild Life continue cooperative studies to prepare a wetlands management plan for the Delta.

18. Current land use:

a) **Site:** Paradeniz Lagoon and Akgöl Lake are sites for fishing. Recently developing tourism activities have become a significant source of income for the local people. Ornithotourism also develops in the delta which is one of the

most important bird zones in the Eastern Mediterranean.

- b) **Surraundings/catcment:** The main sources of income in the area are agriculture, fishery, tourism and industry.

The primary agricultural products are lemon, wheat, grape, groundnut, olive, apple, orange and banana. Besides the lakes, coastal fishing and recently developing open sea fishing are important sources of income. Owing to its being an old settlement, the region is also rich in history and culture. Tourism is a recently growing activity.

19. **Disturbances/threats, including changes in land use and major development projects (factors which may have a negative impact on the ecological character of the wetland):**

- a) **at the side:Area:** Organic materials carried to the lakes in waters from agricultural fields constitute the biggest threat to the lakes and reedlands in the Delta.

Tourism, which constitutes another threat, has been taken under control after the designation of the area a Special Environmental Protection Zone.

Another activity which may affect the wetland ecosystem is the dams planned for the River Göksu. An Environmental Impact Assessment report has been drawn up for Kayraktepe Dam, which is the most important dam planned. However, the Ministry for the Environment has found the report inadequate and returned it for revision.

b) **suraundings/catchment:** Touristic buildings, pollution, fishing and intensive hunting constitute the major threats Tourism activities on the Mediterranean coast also effect the Delta of Göksu. Denizkent Holiday Village to the east of Taşucu town and northwest of the Delta is the greatest settlement unit. Drainage from this holiday village imposes a threat. Moreover, solid wastes from the village's garbage are left near Akgöl Lake. In 1988



construction works started for another holiday village by Paradeniz Lagoon. However this was suspended in 1989.

Another plan involves the construction of an airport in the north of Paradeniz Lagoon. The project has been postponed for revision as a result of the objections raised by voluntary organizations.

The paper and integrated wood facilities of SEKA in Taşucu pollute the western parts of the Delta. Although its negative effects are not known at present, it is clear that these will turn out to be dangerous in the future.

**20. Hydrological and biophysical values (ground water recharge, flood control, sediment trapping, shoreline stabilisation, etc)**

The Delta is fed by the River Göksu, which flows from the north and forms the Delta, as well as rains.

Discharge occurs as a result of vaporization and usage of water for irrigation.

21. **Social and cultural values(e.g fisheries production , forestry, religions importance, archeological site,etc.)**Agriculture, animal husbandry and fishing play an important role in the Delta of Göksu.

80% of the population works in agriculture, whereas 20% works in tourism, industry, fishery and other various sectors.

The Delta of Göksu and its surroundings are quite rich in nature, history and culture. Settlements dating back to 2000 B.C. were discovered in archaeological excavations.

It is estimated that the city of Silifke, which is located on both banks of the River Göksu, was established in the 3rd century B.C. Many remains and historical items dating back to antiquity, Hittite, Roman, Byzantium and Anatolian Seljukian civilizations have been found in and around the city.

Taşköprü bridge on the River Göksu, Silifke Castle with 23 towers and 4800 m. circumference, Amphitheater, Necropolis and the ancient city of Seleucia are the major historical remains in Silifke. The castle, theatre, arch, church, necropolis and the bath with the depiction of the three beauties (Hera, Athena and Aphrodite) to the 22 km east of Silifke date back to the Late Roman period.

Furthermore, the Caves of Heaven and Hell, which are subsidence formations, are areas of both natural beauty and historical richness with their ancient remains.

22. **Noteworthy Fauna** (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

The Delta of Göksu, which is a very important wetland on the migration route of various species, is a shelter for large flocks of birds, especially when the lakes in Central Anatolia and Lakes Region are frozen in harsh winter conditions. Up to date,

327 different bird species have been observed in the Delta (The Society for the Protection of Wild Life). This is the greatest number ever observed in a wetland in Turkey. Some of these species are endangered all around the world.

Some of the endangered species in the Delta of Göksu are as follows:

Name of Species

- Podiceps cristatus
- Podiceps ruficollis
- Podiceps grisegena
- Podiceps nigricolli
- Puffinus puffinus
- Sula bassana
- Phalacrocorax carbo
- Phalacrocorax aristotolelis
- Phalacrocorax pygmaeus
- Pelacanus onocratalus
- Pelecanus crispus
- Botarus stellarise
- Nycticorax nycticorax
- Bubulucus ibis

- *Egretta garzetta*
- *Egretta alba*
- *Ardea cinerea*
- *Ciconia ciconia*
- *Platalea leucorodia*
- *Phoenicopterus ruber*
- *Cygnus olor*
- *Pyrhocorax pyrhocorax*
- *Corvus corone conix*
- *Corvus corax*
- *Strunus vulgaris*
- *Passer domesticus*
- *Fringilla coelebs*
- *Serinus serinus*
- *Carduelis carduelis*
- *Carduelis chloris*
- *Emberiza cia*
- *Emberiza schoeniclus*

It is clear that the geographical location as well as ecological structure of the Delta of Göksu are major factors in the diversity of the fauna in the area. Its notable ornithological status and its

being one of the main turtle nesting zones in the Mediterranean make the Delta\_ significance.

Survey results show that birds use the region for both passing the winter and brooding and that certain species are domestic ones. Especially Purple Gallinule (*Porphyria porphyria*), found only in certain parts of the Mediterranean and diminishing day by day, is one of the most important species in the surveyed fields and has nearly become the symbol of this region.

The ornithological studies conducted up to date in the Delta of Göksu indicate that there is a significant increase in bird population and the variety of species, particularly during the winter and migration seasons.

The Delta of Göksu also bears great Herpetological (reptiles and amphibians) value. These species form one of the primary links in the food chain of water birds and stand as a particular group to keep the system in a healthy cycle.

As a result of the studies conducted to determine the types and distribution of reptiles and amphibians in the Delta, 34 species were found. Four of these are land and water frogs (Anura), six are tortoises and turtles, fourteen are lizards (Scauria), and ten are snakes.

The Delta of Göksu is one of the main nesting areas in the Mediterranean where *Caretta caretta* and *Chelonia mydas* turtles lay their eggs. Moreover, softshell Nile Turtle (*Trionyx tringuis*) can also be found in the region. Turtles were observed to nest particularly in the southwest of the Delta. The length of shores where turtles lay their eggs reach 10.5 km.

23. Noteworthy flora (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.): Typical Mediterranean plants are dominant. Towards inner parts, forests become more qualified and turns into real forest pattern.

Dominant heath species of the dunes are;

*Murtus communis*

*Nerium oleander*

*Salix* sp.

*Onanis usicosa*

*Sarca poterium*

*Paliurus spine-christi*, and

*Inula crithmoides*.

The northern part of the lake Akgöl covered by thick reed beds with 50-200m. width. The main reed species are *phragmites australis*, *Arunda donax* and *Thypa* sp. There are also *Bolbas choenus maritimus* and *Juncus* sp.

The water plants at Paradeniz and Akgöl depends on the salinity and water regime. *Patomogeton pectnas* and *Salicornia* sp. are the dominant species which provides nutrients for the hibernating waterfowl.

24. Current scientific researches and facilities (e.g. details of current projects; existence of field station, etc.):



The Society for the Protection of Wild Life conducts studies in the Delta of Göksu so as to draw up an integrated management plan which will constitute the model for other wetlands in the Eastern Mediterranean. The target is to reconcile all the economic activities in the region with the principle of protecting the ecosystem, and thus to ensure reasonable utilization of wetlands. Residents, local and central administrative units and scientific institutes actively contribute to the project which continues with financial support from the European Union since 1995.

25. **Current conservation education(e.g. visitors centre ,information booklets, facilities for schoolvisits hides,etc.):** Visitors Center, booklets, facilities for school visits.

26. **Current recreation and tourism(state if the wetland used for recreation/tourism ; indicate type and frequency/intensity):**

The Delta will probably develop a great potential for rapidly growing ecological tourism owing to its natural values and status. Being one of

the rare wetlands in the Mediterranean it is notable in terms of tourism and recreation. Moreover, the climate conditions permit tourism and recreation activities for a period of 8 months.

As a coastal wetland the Delta of Göksu enjoys many special features in terms of tourism and recreation.

**27. Management authority (name and address of body responsible for managing the wetland)**

Ministry for the Environment

- Directorate of Special Environmental Protection Institution
- General Directorate for the Conservation of the Environment
- İçel Provincial Directorate for the Environment

**28. Jurisdiction: (territorial e.g. state/region and functional e.g. Dept of Agriculture/Dept. of environment etc.)**

- Ministry for the Environment, İçel Provincial Directorate for the Environment

- Ministry of Forestry, Regional Directorate
- Ministry of Agriculture, Provincial Directorate of Agriculture
- General Directorate of State Hydraulic Works, Regional Directorate
- Directorate of Special Environmental Protection Institution

**29. Bibliographical references (scientific/technical only):**

- Türkiye'nin Kuş Cennetleri (Bird Sanctuaries of Turkey), 1995, Ministry for the Environment, 1995
- Türkiye'nin Sulak Alanları (Wetlands of Turkey), The Environment Foundation of Turkey
- Özel Çevre Koruma Başkanlığı, Özel Çevre Koruma Bölgesi Tanıtım Serisi (3), ÖZER Ali, SEVİM Fatma.
- Papers in the International Seminar on the Environmental Development of the Delta of Göksu, March 1993.

**30. Name and address of complier:**

The Ministry for the Environment

The General Directorate for the Conservation of

the Environment

Eskişehir Yolu 8.km ANKARA

31. Map of the region (please attach the most detailed and accessible one updated-preferably at a scale of 1:25.000 or 1:50.000) .