

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

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9<sup>th</sup> 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, 2<sup>nd</sup> edition, as amended by COP9 Resolution IX.1 Annex B). A 3<sup>rd</sup> 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.

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

Şerif HIZLI  
Ministry of Environment and Forestry  
General Directorate of Nature Conservation and National  
Parks  
Söğütözü Caddesi 14/E Söğütözü  
ANKARA/TURKEY  
e-mail: s\_hizli@yahoo.com  
Tel: 0090 312 2075908

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DD MM YY

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Designation date

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Site Reference Number

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### 2. Date this sheet was completed/updated:

December 2007

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### 3. Country:

Turkey

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### 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.

Gediz Delta

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

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted\*\*

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced\*\*

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

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

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7. **Map of site:**

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

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;
- ii) an electronic format (e.g. a JPEG or ArcView image) ;
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

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8. **Geographical coordinates** (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

38° 30' N, 26° 55' E

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9. **General location:**

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The Gediz Delta is 26 km from Izmir province, at the north west of the city. It lies in the eastern shore of the gulf of Izmir, in the shore of Aegean Sea.

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

The elevation of the delta is at sea level

**11. Area:** (in hectares)

14.900 hectares

**12. General overview of the site:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Gediz Delta which is adjacent to Izmir is one the most important wetlands not only for Turkey but also for the entire Mediterranean region. The delta extends to 40.000 ha. and includes a variety of different habitats including alluvium islands, seasonally flooded meadows, Mediterranean shrub lands, agricultural areas and saline pools. In the winter time, the Gediz Delta hosts 80,000 wetland birds. Among those, there are 28 globally and European listed endangered species. Moreover, year-round, the Delta provides shelter for 250 bird species. The Delta is not only unique for its biodiversity and ecological value but also for its economic and aesthetic importance. The Gediz Delta provides more than 1/3 of Turkey's salt production.

**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).

**Criterion 2:** Since the delta consists of salty and fresh water together, it provides breeding area for many bird species. In the delta Amongst them, many are protected according to the EU Habitat and Bird Directives. *Pelecanus crispus* and the *Falco naumanni* are in Vulnerable category of IUCN Red Data Book List. See also criterion 4

**Criterion 3:** The site plays an important role for maintaining the biogeographic diversity of the region. There are endemic species and/or sub-species in the Gediz Delta, such as *Puccinellia kociana subs. Anatolica*, *Stachys cretica subsp. Smyrnaea*, *Carex divisia*, *Sueda prostrate subsp. Prostrate* and *Salsola kali*.

Twenty species of fish, some species of Amphibians, more than ten species of Reptiles, more than ten species of Mammals, thirteen species of Polycheata, seven species of Mollusca and seven species of Crustacea live in the Delta..

Further more the Delta is an important breeding site for waterbirds for the entire Mediterranean basin. More than 200 bird species has been recorded in the area.

**Criterion 4:** The Delta is an important breeding site for entire Mediterranean basin, especially in terms of seabirds, such as Common Tern (*Sterna hirundo*) and Mediterranean Gull (*Larus melanocephalus*). Every year thousands of pairs of sea birds breed at the sheltered muddy islands of the Delta.

Greater Tern (*Sterna caspia*) breeds regularly only at the Gediz Delta within the whole coasts of the Mediterranean basin. On the other hand, the area is important in respect of providing

wintering sites during migration for thousands of coastal birds every year. Salt-pans, marshes, meadows, hills and gardens are other habitats increasing the richness of the area. The *Cicornia nigra*, *Phoenicopterus ruber*, *Holopterus spinosus*, *Glareola pranticola*, *Burhinus oedicephalus*, *Buteo rufinus*, *Sitta neumayer* and *Monticola solitarius*, *Phalacrocorax pygmaeus* can be given as examples for important species living in these habitats.

**Criterion 5:** The results of observations done between 1982-1997 shows that 207 bird species live in the delta. 57 species of them have been breeding in the area. Only the number of *Phoenicopterus ruber* species is 5000 at breeding time and can reach 25.000 individuals in winters. In addition to that, in the past two years 2000-3000 *Fulica atra* were observed during winter in the delta.

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**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:**

Mediterranean

**b) biogeographic regionalisation scheme** (include reference citation):

EEA – EU Habitats Directive (92/43/EEC)

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**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.

**Geology and Geomorphology:** The delta is surrounded by hills with changing elevation from 300 meters to 1100 meters. This high relief is mostly volcanic rocks. When we look at the stratigraphic stacks of these high areas surrounding the delta plain, we'll see these components from older to younger; Upper kretase fliş units, Neogen (Miosen) sedimenter units, Neogen (Miosen) volcanic units, Neogen (Miosen) volcanosedimentary units and Quaternary alluviums. The River Gediz has changed its bed frequently in the direction of west, south-west and south at its delta, causing to form lagoons, swamps and muddy areas.

**Origins:** Natural

**Hydrology:** The Gediz River is the second large river which flows into the Aegean Sea from Anatolia. The Gediz River is formed by joining of rivers coming from Murat and Taphane Mountains in the Central Western Anatolia. The river takes the streams of Kunduzlu, Selendi, Deliniş and Demrek from the north and little rivulets coming from the volcanic area of Kulu from the south, while it advances towards the west. The river enters the Gediz Plain through the Northeast of the district of Salihli and takes the stream of Nif coming from the plain of Kemalpaşa in the south and flows into the Izmir Gulf through the south east of the hills of Foca. The annual maximum rainfall is 1116 mm/m<sup>2</sup>, minimum rainfall is 327 mm/m<sup>2</sup>. The annual average flow of the river is 46,53 m<sup>3</sup>/sn.

**Soil type:** The delta consists of 8 types of soil in which lime less brown forest soil, lime less brown soil, rendzina type of soil, red-brown Mediterranean soil, red Mediterranean soil, salty alkaline soil, alluvium soil types.

**Water Quality:** The main water source of Gediz Delta is the Gediz River which generally consists of polluted water and the main reason for this pollution is wastewater discharge from industries and houses to the river. Below, there are 16 parameter values on water quality of water.

	Parameters	Min.	Max.		Parameters	Min.	Max.
1	Temp. (C <sup>0</sup> )	7,5	35	9	CO <sub>3</sub> <sup>2-</sup> (mg/l)	6	90
2	pH	7,17	9,93	10	HCO <sub>3</sub> <sup>-</sup> (mg/l)	12,0	1476,9
3	Salinity (‰)	0,6	52,6	11	NO <sub>2</sub> <sup>-</sup> (µgat/l)	0,0	90,06
4	Diss. O <sub>2</sub>	0,0	19,6	12	NO <sub>3</sub> <sup>-</sup> (µgat/l)	0,01	1542,3
5	Ca <sup>2+</sup> (mg/l)	18,14	793,60	13	PO <sub>4</sub> <sup>3-</sup> (µgat/l)	0,04	211,2
6	Ca <sup>2+</sup> hardness (mg/l)	60	1960	14	NH <sub>4</sub> <sup>+</sup> (µgat/l)	0,02	692,3
7	Total Hardness (mg/l)	200	9262	15	SiO <sub>2</sub> <sup>2-</sup> (µgat/l)	0,48	410,4
8	Mg <sup>2+</sup> (mg/l)	23,5	2096,3	16	Conductivity (µS 20 <sup>0</sup> )	264	988

**Climate:** The Mediterranean climate which is hot and arid at summers, warm and rainy at winters, is dominant in delta plain and its surroundings. Below there some parameter values of delta.

The annual average temperature: 16,8 C<sup>0</sup>

The average lowest temperature: 7,8 C<sup>0</sup>

The average highest temperature: 26,8

The average lowest evaporation: 45,1 mm.

The average highest evaporation: 266,1 mm.

The annual evaporation potential: 1547,3 mm.

The average highest humidity: 64,8 %

The average lowest humidity: 45,1%

The annual rainfall: 544,2 mm

#### 17. Physical features of the catchment area:

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

#### 18. Hydrological values:

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

Because of the geographic characters of the land forms surrounding the Mediterranean, most water flow into the sea without joining to form rivers with high flow rates. They form many small deltas. Therefore, each of the rare large deltas formed by some high flow rate rivers is a living area without alternative. During the formation of the delta, the Gediz River has frequently changed its course to the west, southwest and south and has formed many lagoons and mud plains towards the sea.

## 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.

There is no information about percentages of wetland types.

## 20. General ecological features:

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

The Gediz Delta which is a wetland with abundant food functions, as an open air museum with its rich and different habitats. There are large salt swamps in the delta that are very important for some bird species. These salt swamps are located in the Northeast of Kirdeniz Lagoon trap and between Bostanlı and Çilazmak fish traps. The old three beds of the Gediz River and the current mouth provide water birds and sea birds with reproduction, nutrition, wintering and sheltering. The Gediz Delta which accommodates temporary wet meadows, gardens, agricultural areas and small woody areas together with all above mentioned systems is a unique living environment, not only for that region, but also for all Mediterranean regions. The habitats of dune, halophilic, phrygana and rush are found in the Gediz Delta which is located in the Mediterranean floristic area in respect of flora.

## 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.*

From the point of plant geography, the Gediz Delta is located Mediterranean Flora Region and it is covered with salt marsh and fresh water marsh habitats. The result of a research about the flora of the area has shown that 308 taxons of the 206 genera and 60 familia of plants exist in the region. All of these taxons belong to the Spermaphyta division. Plants adapted to salt are generally at the saliferous habitats. There are *Phragmites australis* and *Thypa sp.* at the reedbeds and channels; *Tamarix sp.* at the sandy areas; and *Asphadelus microcarpos*, *Pistucia terebinthus*, *Quercus sp.*,

*Ficus carica* and *Coridothymus capitatus* at the hilly areas. At the coastal part of the delta, *Salicornia europea* can be observed in dense populations. From shores through the inner parts of the area, *Arthrocnemum spp.*, *Holcnemum strobilaceum* and *Halimone portulacoides* turn to be as dominant species. Moreover, There are endemic species and/or sub-species in the Gediz Delta, such as *Puccinellia kociana subsp. Anatolica*, *Stachys cretica subsp. Smyrnaea*, *Carex divisa*, *Sueda prostrate subsp. Prostrate* and *Salsola kali*.

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## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The Gediz Delta has a rich fauna, provides a living area for many animal species from numerous insect species to *Canis aureus* and *Sus scrofa*. However, the birds constitute the most important aspect of the fauna. More than 200 out of 450 birds species found in Turkey have been observed in this area. The delta provides many kinds of water birds with proper conditions for reproduction, nutrition, sheltering and wintering. Because of its convenient climatic conditions, fresh and salty water ecosystems and different rich habitats. The *Pelecanus crispus* and the *Falco naumanni* which are threatened species, reproduce in the Gediz Delta. The area is a reproduction site in all Mediterranean region, for sea birds especially for gulls and terns. Thousands of sea birds breed in sheltered small muddy islands in the Delta every year. The area is important in respect of providing wintering and accommodations during migration for thousands of coastal birds every year. Salt-pans, marshes, meadows, hills and gardens are other habitats increasing the richness of the area. The *Cicornia nigra*, *Phoenicopteru rubber*, *Holopterus spinosus*, *Glareola pranticola*, *Burbinus oedicnemus*, *Buteo rufinus*, *Sitta neumayer* and *Monticola solitarius* can be given as examples for important species living in these habitats.

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## 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 Leukai antique city located at Uctepeler which is an island in the Aegean Sea situated in the Delta was established by Takhos, a Persian Admiral who planned to rebel against the Persian King (352 BC). The city had not played an important role in history. However, it was mentioned during Hellenistic are, because of Aristoniskos, the illegal child of Eumenes II.

Larissa is an ancient city that never recovered after being destroyed in a war in the 3rd century B.C. German and Swedish archaeologists carried out excavations in this city in 1902 and 1934. Larissa is mentioned in Homer's Iliad. Larissa is on the Izmir-Canakkale highway, on the hill on the edge of Buruncuk village, the first village after Menemen. The Gediz River flows beside this hill.

The lower part of Panaztepe ancient city dates from the start of 2000 B.C., whereas the upper part dates from the second half of 2000 BC. Prof. Dr. Armağan Erkanal has been carrying out archaeological excavations at Panaztepe since 1985. Graves, burial jars and items inside them have been found in the excavations being carried out in the necropolis of the ancient city. Panaztepe is to the south of the Gediz River, near the town of Maltepe which lies between Menemen and Foca.

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

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

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- 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:

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**24. Land tenure/ownership:**

**a) within the Ramsar site:** The site is a public property

**b) in the surrounding area:** Surroundings areas are consist of agricultural lands owned by private persons and also meadows, pastures, bushy areas that are public property.

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**25. Current land (including water) use:**

**a) within the Ramsar site:** Salt production has been made in the area since 1863 which is one of the most important sea shore salt production centres and the largest salt production centre in Turkey. A salt production of 500.000 tons is realized annually by the Salt Works of the State Monopoly Authority in the salt-pans covering an area of 3300 hectares of the Delta. Two fish traps with an area of total 2400 hectares are located in the West and South of the Delta. The Homa lagoon run by Water Products Higher School of Ege University is quite rich in regard of fish species. There are blue and green tours in the Homa Lagoon. Moreover, there is a visitor centre in the Delta owned by Environment and Forestry Ministry. There, visitors can attend to special bird observation tours. In tours, not only bird observation is being performed but also giving information to the visitors about plants, wetlands and the formation of the Delta. In the centre, there is an exhibition hall that includes photos of some birds species seen in the delta and their living areas. Also, there is

**b) in the surroundings/catchment:** By design deltas have a deep soil layer as sediment gets accumulated at the mouth of the river. The soil at a delta is typical very fertile and for this reason Gediz Delta is an important agricultural area. Crops grown in the area include: wheat, corn, tomatoes, melons, and water melons. Cotton fields can be seen along the sea and olive trees in the middle of valley. In the coastal wetlands production decreases because of the poor drainage conditions. Many years ago in north side of valley rice was grown, but now cotton fields dominate the salt lands. Gediz River is the vital source of water for the agriculture in the region.



Some groundwater is also available. Three dams have been built on the river for water use and energy purposes.

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**26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

**a) within the Ramsar site:** The water of the Gediz River is the vital spot in the region for agricultural activities. First irrigation works started in 1940 and then three dams have been constructed on the River and its branches for irrigation and energy generation purposes. Asagi Gediz Irrigation Project has been started by the General Directorate of State Hydraulic Works to irrigate the plain of Menemen lying in the East-Northeast direction of the Delta. The natural system has been interrupted especially in regard of water regime, because of land improvements and irrigation network realized in an area of 23.000 hectares. In addition, an agriculture-originated pollution problem has been arisen together with beginning of irrigated agriculture.

**b) in the surrounding area:** The Gediz River heavily polluted by at least 130 industrial resources and virtually all household waste generated in its basin, however the effects of this on the wetland are unknown.

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**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.

1. Three lagoons in the west, hilly areas and near area and Çamaltı salt-pans were declared to be "Wild Life Protection Area" by the Directorate General of National Parks and Game Wild Life of the Ministry of Forest in 1980.
2. The same area (above) was declared to be a 1<sup>st</sup> Degree Site Area by the Decree No.611 of the Izmir Council for the protection of cultural and Natural beings.
3. The Leucaee antique city located in the salt-pan was declared and protected as an Archaeological Site Area by the Decree dated 18.07.1985 and dated 1284.

**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?:

**d)** Describe any other current management practices:

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**28. Conservation measures proposed but not yet implemented:**

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

The management plan of the delta has been prepared, also protected area borders of the delta have been plotted

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**29. Current scientific research and facilities:**

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

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**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.

A booklet for giving general information about Gediz Delta and surrounding areas published and distributed to local schools and related institutions. There is a visitor centre in the Delta owned by the Ministry Environment and Forestry. There, visitors can attend to special bird observation and research tours.

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**31. Current recreation and tourism:**

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

The visitor center organizes different tours such as blue tour, green tour etc. In tours, not only bird observation is being performed but also giving information to the visitors about plants, wetlands and the formation of the Delta. In the centre, there is an exhibition hall that includes photos of some bird species seen in the delta and their living areas. Also, cameras are placed at the different points of the Delta and visitors can watch live broadcast of the birds in the centre without interrupting them.

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**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, General Directorate of Nature Conservation and National Parks,

Address: Sogutozu caddesi No: 14/E 14.kat B-blok 06560 Bestepe/Ankara Turkey

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**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.

- Ministry of Environment and Forestry  
General Directorate of Nature Conservation and National Parks  
Department of Nature Conservation  
Wetlands Division.

Address :Sogutozu caddesi No: 14/E 14.kat B-blok 06560 Bestepe/Ankara Turkey

e-mail : s\_hizli@yahoo.com

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**34. Bibliographical references:**

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

- Wetlands Management Projects, The Gediz Delta Management Plan Subproject Vol 1-2 (1999)
- EKEN G. (1995), The Bird Paradise of İzmir, Çamaltı Salt Pan. News from Hermit Ibis. Issue 57 DHKD ISTANBUL
- EKEN G. (1997), The Breeding Population of Some Space of Water Birds at the Gediz Delta, Western Turkey. Zoology in the Middle East, Vol. 14. Max Kasperek Verlag, Heidelberg
- KACANCI, N. (1996), The project of Biologic and Ecological Research an Internationally Important Wetlands.
- KEYİKÇİ N. (1996) Flora of Izmir-Tuzla Bird Paradise. A Master Thesis. Ege University, Faculty of Science
- SIKI M. (1985), Çamaltı Salt Pan Homa Fish Trap Bird Species and Researches on the Biology of Some Species. Doctorate Thesis, Ege University, Faculty of Science IZMIR.
- YARAR M. MAGNIM G. (1997), Important Bird Areas in Turkey DHKD ISTANBUL.