Ramsar Information Sheet

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1. Date this sheet was completed: 14 April 1998

2. Country: Republic of Turkey

3. Name of wetland: Lake Burdur

4. Geographical co-ordinates: 37°44'N 30°11'E

5. Altitude: 854 m (average)

6. Area: 24,800 ha

7. Overview:
It has a length of 35 km and a width varying from 3 to 8 km. Northeast and Southwest ends of the lake are shallow. It has no outlet.
A part of lake Burdur, which is 12,600 ha, was designated to the Ramsar List in 1994. The new Ramsar area includes the whole of the lake, in west Anatolia.

8. Wetland type: Q

9. Ramsar Criteria: 1a, 2a, 2c, 2d, 3b, 3c

10. Map of site included: The map is attached to this report.

11. Name and address of compiler:
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12. Justification of criteria selected under point 9:
no information available

13. General location:
The lake is extending in northeast-southwest direction in the north of Burdur province.

14. Physical features:
It is a lake with a tectonic origin and it has no outlet. Water level rise during winter brings the total area of the lake to 20,000 hectares.
The lake has a total drainage area of 32,335 km^2. EC of lake water is 30,000-38,000 mho/cm. Direction of underground water flowing from formations located in the periphery of the lake Burdur is towards the lake.
Burdur lake has been formed after the tectonic depression of gutter pipe shape between the Sögüt mountain and the masses of Suludere-Yayladag, laying from north-east to south-west, has been filled with water. There are nummulitic phyllite at the west and north, neocenec calcers at the east, high masses formed by basic and ultra basic rocks such as serpentine and gabbro at the south and south west of the lake.
Because of the fault which lays along the west part of the lake, the water side of the lake is very narrow and the lake is very deep at this area. By piling up the alluvion sediments, the formation of the coast plain and delta, has started up in appearance of salty marsh covered with at the south and north.
It is one of the deepest lakes of Turkey. The depth of the lake reaches to 100 metres near the Kapi tip located at the north-west. Feeding of the lake is made by the rainfall of the lake area, permanent rivers and seasonal streams running to the lake, and subterranean current, and the emptying of it by evaporation. The main running waters feeding the lake are: Bozcay stream which enters the lake from

south-west point, and through east Kravgaz, Kurna, Çerçin, lengüme streams respectively and the Adalar stream which comes form the Keçiborlu district. The amount of flowing water of these running waters is low and some of them dry up in summer. The terrace and shore cliffs found at the coasts of the lake, which are 30, 40, 50 and 80 meters in depth, shows that the water level has changed several times from quaternary to now because of climatic changes. Since no flowing occurs through out side, the lake water level and area differs depending on to the rain falls, years and seasons.
Continental climate peculiar to the central Anatolia region prevails in the region. The annual average temperature is 13.1 °C with a relative humidity of 57 percent. Average wind speed is 2.2 m/sec. annual rainfall 424.9 mm and insulation is 7.5 hours.

15. Hydrological values:
Feeding of the lake is made by rainfall of the lake area, permanent rivers and seasonal streams running to the lake, and subterranean current, and the emptying of it by evaporation.
Since no outflow occurs through the side, the lake's water level and area varies depending on the rainfall, years and seasons. According to the observation period between the years of 195901996, the water level in May 1970 was 857.9 meters, and in May 1996 it was 848.15 meters. While the lake area has reached to 23,700 hectares, it was only 18.500 hectares when the water level was 848.15 meter. This drop in water level caused a wetland habitat loss and the shallow water areas, which are very important for the waterbirds, to dry out.
In spite of the one meter of oscillation of the lake water which occurs depending on the seasons, along with the Karamanli and Karatas Barrages and Tefenni and Belenli Dams, the draught observed last years has caused also aridness.

16. Ecological features:
Burdur Lake takes place at the Mediterranean floristic area by plant geography. Aquatic plants can not be seen in the lake water, because the amount of arsenic, sodium sulphate and chlorine in the lake water is high. Plants exist only at the south, between Yazikent and Karakent villages where the river water mixes with the lake and the saltiness of the water is less. The dominant plant cover at this area includes 6 species of Cyperacea family which are (*Cyperus* sp., *Carex diluta*), *Schoenoplectus lacustris*, *Bulboschoenus maritimus*, *Eieocharis palustris*, 2 species of Juncaceae family (*Juncus heldreichianus* subsp., *Juncus gerardi* subsp.), 2 species of Typhaceae family (*Typha laxmanii lepechin*, *Typha domingensis*) and of the Poaceae family *Phragmites australis*.

17. Noteworthy flora:
Juncus, *Hordeum*, *Lepidium* and *Rumex* species grow at places where creeks flow into the lakes.

18. Noteworthy fauna:
Aquatic fauna of the lake water is poor because it contains arsenic. *Aphanius burduricus*, which is a small fish and special for the lake, exists at the places where the river water mix with the lake. Along with the *Aphanius burduricus* , the existence of *Arctodioptomus burduricus* zooplankton species, which is also endemic to the lake, cause the region to gain importance in view of fauna.
The surroundings of the lake are highly rich in reptiles. The reptile species that have been recorded in the area are: *Testudo graeca*, *Lacerta trilineata*, *Lacerta saxicola*, *Ophisops elegans*, *Eryx jagulus*, *Typhlops vermicularis*, *Coluber caspius*, *Eirenis modestus*, *Elaphe quatuorlineata*, *Malpolon monspessularis*, *Natrix natrix L*. and *Vipera xanthina*.
Like all wetlands, the animal species seen frequently around the Burdur Lake are frogs. *Rana ridibunda* Pall. and *Bufo viridis* Laur. are the species seen mostly.
The bushes and forest areas located around the lake show differences in mammals. The main mammals existing in the area are *Erinaceus concolor*, *Talpa caece*, *Lepus europaeus*, *Canis lupus*, *Canis aureus* and *Vulpes vulpes*.
Burdur Lake is one of the most important lakes of Turkey by bird existence. Though it is a deep lake, it shelters over 100,000 birds each year during fall and winter periods. Some years this number reaches to 300,000. Since the lake waters do not freeze in winter, some species of ducks form crowded groups here. Wide and open water surface create a secure condition for the birds which pass the winter here. Shallow areas at the south-west and north-east parts of the lake and muddy plains near the shores provide possibility with their rich food stuff for birds to feed.
Many duck species in big numbers pass the winter at the lake. *Netta rufina*, *Aythya ferina*, *Aythya fuligula*, *Anas platyrhynchos* and *Anas clypeata* are among them. *Anser albifrons*, *Halieetus albicilla*

and *Serinus pusillus* are other bird species which pass the winter at the lake. From time to time in winter, *Aquila heliaca* is also seen at the lake.
Burdur Lake is very important for *Podiceps nigricollis* and *Fulica atra* both during fall migration and winter months. In October 1997, 27 075 *Podiceps nigricollis* and 252 726 *Fulica atra* have been counted at the lake. During the migration many *Chlidonias niger* and flamingos stay temporarily at the area.
Hoplopterus spinosus, *Tadorna ferruginea*, *Irania gutturalis* and *Emberiza caesia* are among the important species which breed at the lake. In addition, *Hoplopterus spinosus*, *Tadorna tadorna*, *Fulica atra*, *Himantopus himantopus* and *Podiceps cristatus* breed at the lake and its surroundings.
Real importance of the Burdur Lake is, that it holds 70% of the world population of *Oxyura leucocephala*, which is a species that is world-wide under the danger of extinction, during winter at the lake.
Although *Oxyura leucocephala* spread to an area form west Mediterranean to the Middle Asia steppes, the distribution of the species in that area is very uneven. Especially the diminishing of its population in Europe causes anxieties.

19. Social and cultural values:
The history of Burdur, which was located at a place named Psidia in the antique age, belongs to the distant past. The findings obtained from the archaeological diggings, which was done at the antique Tymbrianassos city near the Hacilar village 8 km to the south-west tip of the lake, has shown that since Neolithic age there has been occupation at the area. The antiques found during the diggings are displayed at the Burdur museum.
The area has been dominated by Hittites, Phrygians, Lydianes, Perions, Romans and Byzanthiums, and after 100 BC with the Anatolian Seljucks the area has been transferred to Turks domain.
There are many works of art belonging to the Anatolian Seljucks and Ottomans. The Muzafferiye library in the centre of the province built in Hamidogullari period is one of the oldest libraries of Turkey.

20. Land tenure/ownership of:
a) Wetland: The lake is public property.
b) Surrounding areas: Agricultural lands are owned by private persons while meadows, pastures and bushy areas are public property.

21. Current land use/principal human activities:
a) site: Bird observation is being performed.
b) Surrounding lands and catchment: Local people mostly do agriculture for a living. But, although the rate of the soils for cultivation is high, insufficient watering facilities, dominating natural conditions for agriculture, insufficient modern techniques limits the productivity and varieties. Main vegetal productions are wheat and barley. Beet sugar, rose an anise are the main vegetal industrial products. Vegetable productions is done at the places which can be watered. Fruit trade gaining importance, and depending on the climatic conditions, apple, pear, grape and pitch production are increasing.
Stock breeding is mostly accepted as a secondary job. Although the natural conditions suitable for stock breeding since maintenance and production techniques are not modern , the productivity is highly low.

22. Factors adversely affecting the site's ecological character, including changes in land use and development projects:
Main polluting sources include the sewerage network of Burdur City. The project of the treatment systems of Burdur city has already been prepared. And its construction will be started in the near future. There are Burdur sugar factory and milk factory near the east cost of the lake. These factories have treatment plants. The water from the plants reaches the lake.
Analyses of water samples taken from the lake and its tributaries have shown high zinc, potassium, tin, chromium and bromine contents. Further observations indicated that a large part of phosphate and nitrogen accumulating in the lake has come from sewerage networks and the lake has an oligotrophic structure in terms of phosphorus. All these results indicate that lake Burdur differs from the rest of the lakes in the region due to its alkaline and brackish water with a high element concentration which makes it unfit for survival of water creatures.

23. Conservation measures taken:

The area of 38.125 hectares at the Burdur Lake and its surroundings was declared as “Wild Life Protection Area”, by Ministry of Forestry, General Directorate of National Parks and Game Animals - Wild Life Protection in 1993.
Because the Burdur lake and its surroundings spared as “Wild Life Protection Area”, hunting has been totally prohibited within this area. Illicit hunting has been controlled by the Ministry of Forest. In addition, the members of the Burdur Municipality and Wild Life Protection Association contribute to the inspection work at the lake. As a result of forbidding the hunting at the lake and effective inspection, important increase at the number of waterbirds which pass the winter at the lake have been observed.

24. Conservation measures proposed but not yet implemented:
The whole of the lake and surrounding areas were proposed as First Degree Natural Site Area in May 1998.

25. Current scientific and research facilities:
A research on biological and ecological characteristics of the lake was made by Hacettepe University and sponsored by the Ministry of Environment.
The project of Management Planning for Lake Burdur is being carried out.
For protection of the living areas of *Oxyura leucocephala*, International Waterbirds and Wetlands Searching Association and Waterbirds and Wetlands Association have been executing and international searching and Protection Program since 1989 Turkey and Russia come first among the countries which are given most importance. Protecting the Burdur Lake is very important for this species to be able to continue its generation.

26. Current conservation education:
Posters and booklet published by the Municipality of Burdur and the Association for Conservation of Wildlife with the objective of promoting and protecting some species, particularly *Oxyura leucocephala*, is being distributed to local schools and hunting clubs.
A booklet for giving general information about Lake Burdur and surrounding areas published by the Ministry of Environment is being distributed to local schools and related institutions.

27. Current recreation and tourism:
Sheltering of the Burdur Lake the crowded bird groups during fall and winter periods; being an important winter passing area on earth for the cocked tail ducks which are under the danger of extinction, caused bird observers and ornithologists to intensify their interest in the Lake.
There are many Karstic Lakes, valleys, caves, chasms and corridors which can attract the interest of domestic and foreign tourists. The world wide famous Insuyu Cave is approximately 22 km. from the lake.
The lake and its surroundings have important potential for wildlife tourism. But, since a good advertisement can not be achieved, this potential cannot be used.

28. Jurisdiction:
The regional organisation of the Ministry of Forest
The State Hydraulic Works (DSI) Regional Organisation
Isparta Provincial Organisation of the Ministry of Environment
The Municipality of Burdur

29. Management authority:
The Ministry of Environment, General Directorate of Environmental Protection
The Ministry of Forest, General Directorate of National Parks and Game Animals - Wild Life Protection.

30. Bibliographical references:
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