

Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 28 February 2001

2. Country: Algeria

3. Name of wetland: Chott Merouane and Khrouf Oued

4. Geographical coordinates:

33° 50' - 34° 00' North latitude

6° 00' - 6° 20' East longitude

5. Altitude: 40 metres below sea level to 40 metres above sea level

6. Area: 337,700 hectares

7. Overview:

Chott Merouane and Khrouf Oued are permanent saltwater wetlands, which receive water from the Khrouf Oued, and are the outlet for excess irrigation water from the palm groves and sewage water from the communes of Touggourt and Djamâa (rise in the water table). Located in a region of steppes characterized by an arid climate, Chott Merouane is an appropriate biotope for sedentary and migratory bird life of international importance. It is also an important source of food for local fish, still poorly known, and a breeding area.

8. Wetland type:

Marine/coastal: A, B, C, D, E, F, G, H, I, J, Zk(a)

Continental: L, M, N, O, P, Q, R, Sp, Ss, Tp, Ts, U, Va, Vt, W, Xf, Xp, Y, Zg, Z(b)

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

Types of wetlands by decreasing order of importance:

Permanent streams (M)

Permanent saltwater and brackish lakes (Q)

Ponds and permanent brackish marshes (Sp)

Seasonal ponds and brackish marshes (Ss)

Sources of fresh water (Y)

Land irrigated by canals (3)

Sites used for extracting salt, salt marshes and salt ponds (5)

Canals and drainage ditches (9)

9. Ramsar criteria: 1, 2, 3, 4, 5, 6, 7, 8

Criteria that best characterize the site: 5

10. Map of site included? Please tick yes -or- no

11. Name and address of the compiler of this form:

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12. Justification of the criteria selected under point 9, on previous page:

Chott Merouane perfectly meets two specific criteria (5 and 6), taking into account waterfowl. It is not only the usual habitat for more than 20,000 waterfowl but also the habitat for more than 1 per cent of the western-Mediterranean population of pink flamingos (*Phoenicopterus ruber roseus*). Furthermore, it is the habitat for most or more than 1 per cent of the western-Mediterranean population (30 specimens) of a vulnerable species, the *sarcelle marbrée* (*Marmaronetta anguostriis*) listed on the IUCN Red List. This is also the case of the *tadorne casarca* (*Tadorna ferruginea*). In addition, Chott Merouane meets specific criteria 7 and 8, taking into account fish, however, the absence of reliable data makes it impossible at this time to describe this in greater detail.

13. General location:

The Chott Merouane and Khrouf Oued wetlands are located 9 kilometres from El-Meghaïer in the wilaya of El-Oued, an area called Oued-Righ. It is bordered on the east by the commune of Hamraya and R.N. 48, to the west by the village of Ourir, commune of El Meghaïer, on the north of the commune of Nguibra and Stil and by R.N. 48 and on the south by Aïn Chikh, commune of Sidi Khelil. There are two accesses to the *chott*: El-Meghaïer–Nsigha, a 7-kilometre paved road with 2 kilometres of track from Nsigha to the *chott* and El-Meghaïer–Nsigha by R.N. 3, a 14-kilometre paved road and Nsigha–Chott Merouane after 2 kilometres of gravel road. Chott Merouane covers a total area of 27,000 hectares, of which 70 hectares are used by a company extracting salt (ENASEL).

14. Physical features:

Geology and geomorphology: The water basin of Oued Righ has recent Quaternary continental formations composed of ancient alluvial deposits constituting the only soils apt for farming. This wetland's valley is composed of limestone, sandstone and clays. There are *dayas*, *hamadas (reg)* and shifting dunes (*erg*).

Topography: The topography is homogeneous with several sand dunes and low *hamada*. There have been changes in the soil because of the accretion of organic material, and this has led to scattered Saharan vegetation in the valleys and the oasis. Chott Merouane forms a basin with a steep slope toward lower

altitudes, which drops to 40 metres below sea level, which has given it the name of inland sea.

Soils: The hydromorphic and humus-poor soil can be divided into four types:

1. Chalky soil with a crust of a minimum depth of 30 centimetres and a maximum of 120 centimetres. Saline, its texture is silt-sand.
2. Deep gley soils with the presence of gypsum and with a silt-sand texture.
3. Saline aeolian soils with a depth of 70 to 120 centimetres, with a sand-silt texture.
4. A pseudo-gley saline soil with the presence of gypsum to a depth of 70 to 120 centimetres with a texture silt-sand.

Climate: The continental climate is characterized by high temperatures in summer, with a sirocco (hot wind) blowing from the northeast, and by cold winters accompanied by sands storms from the southeast.

Bioclimate: Arid with cold winters

Rainfall: 80 millimetres per year

Temperature: Minimum of 4° C, maximum of 47° C, average of 21° C (data for 1975–1984)

15. Hydrological values:

Still poorly known, the hydrological importance of Chott Merouane is characterized by storage and supply of water to areas of use, recharging of the underground water, support for the tropic chain and salt extraction over an area of 70 hectares, with an annual production of 100,000 tons. The theoretical production of salt for all Chott Merouane is estimated to be 1 million tons of salt per year, with a salinity of 121 g/l to 299 g/l. Sediments are trapped and external toxic substances are absorbed from drainage water and open waste water channels throughout the region. The tributaries to the *chott* flow primarily from Khrouf Oued at the mouth of the Aïn Chikh, which widens to 300 metres, reaching a maximum flow of 4.2 cubic metres/second and a minimum flow of 3 cubic metres/second. The water quality of the Khrouf Oued is turbid, because of the large number of drains for excess irrigation water from the palm groves and from the sewage system. There are 14 outlets in the region of Touggourt and 5 in the region of Djamâa. The outlets of the region of El-Meghaïer are 7, through Oued Ellah, which empties into Chott Merouane between El-Meghaïer and Nsigha. Two drains are being constructed in the region of Touggourt.

16. Ecological features:

The site has the following habitats:

1. A habitat represented by several bodies of open salt water, both stagnant and moving, characterized by low variation in water level. This habitat is represented by the *sebkhas*, totally lacking vegetation.

2. A habitat represented by the edges of the *sebkhas*, called *chott* (or littoral of the *sebkha*). This habitat is characterized by important changes in water level depending on the season and the amount of external precipitation, especially rainfall. The ground is covered with a halophyte vegetation represented by the *Salsolaceae*.

3. A habitat represented by Rosales (*phragmitaies*, *typhaies*, *scirpaies* and rushes) characterized by large changes in water level.

4. A habitat represented by wet grasslands serving as grazing areas, characterized by the presence of sparse vegetation, scattered around the site.

5. A habitat represented by palm groves scattered around the *chott* and here and there by vegetable gardens.

The spatial distribution of vegetation is determined by parameters linked to the permanence of water and soil salinity.

17. Noteworthy flora:

Distribution of the flora is conditioned by the hydrophilicity and salinity of the soil, which create the following spatial stratification of vegetation:

- *Phragmitaea* represented by *Juncus* spp., *Phragmites australis* and *Typha elephantina*. This vegetation is more or less grazed by the livestock, but is used more by the local inhabitants for constructing roofs and for creating shade.

- *Atriplex*, a forage appreciated by livestock;

- *Retam* and the *jujubier*, also used for livestock;

- Tamarisk is used for fixing the sand dunes and for firewood;

- Large areas of *Salsolaceae*.

Still little studied, this flora is represented by the following species: *Atriplex halimus*, *Cyndon dactylon*, *Juncus* spp., *Lymoniastrum guyoninaum*, *Phragmites communis*, *Salsola* spp., *Tamarix articulata* and *Typha elephantina*.

18. Noteworthy fauna:

Chott Merouane is a habitat for a wide diversity of bird life. In 1999, more than 28,000 birds were surveyed, including more than 14,000 pink flamingos. The quality of this bird life is especially represented by ducks: *Anas platyrhynchos*, *siffleur*, *souchet*, *pilet*, *tadorne casarca* and *sarcelle marbrée* and its quantity by the pink flamingo. Although little data is available, Chott Merouane has not yet

been completely studied by qualified ornithologists, but it appears that there is 1 per cent of the world population for these two species. The pink flamingo often exceeds 1 per cent of the world population. The pink flamingo is represented by an important population, probably the largest in Algeria. Surveys have recorded more than 14,000 specimens, always present in summer during the nesting season. There are also *Circus aeruginosus* and *balbuzard pêcheur*, which are migratory species. Furthermore, mammals are represented by the wild boar (*Sus scrufa*), the golden jackal (*Canis aureus*), the hare (*Lepus capensis*) and the fennec (*Vulpes zerda*). The fish, reptiles and amphibians and insects are not yet well known.

19. Social and cultural values:

Chott Merouane has the following important social and cultural values:

1. Local tourism of 500 to 600 persons per year
2. Livestock grazing area with an annual production of forage of 219,000 kilos for 300 head of livestock (production per hectare/per year is 25,000 kilos)
3. Sport fishing

20. Land tenure/ownership of:

Land tenure in Chott Merouane is 80 per cent in the public domain, the rest, 20 per cent of the land, belongs to private farmers whose primary activity is cultivation of the date palm, except for a few small plots used for subsistence farming.

21. Current land use:

The soils of Chott Merouane are primarily a purely aquatic environment with only a small area for livestock. The rest is a trail around the shore and 70 hectares of the lake used for the production of salt. Only 20 per cent of the remaining land is occupied by palm groves; a very small part is used for vegetables, usually among the palm groves.

Figure 1. Distribution of grazing land

Commune	Grazing area (ha)	Available pasture (ha)
El-Meghaïer	134,640	61
Stil	64,834	8
Oum toyour	200,793	37.95
Sidi khelil	64,100	9
Total	464,367	115.95

Figure 2. Estimate of animals/hectare

Categories	Charge
Sheep	3 ha/head/year
Cattle	25 ha/head/year
Goats	2.1 ha/head/year
Camels	27 ha/head/year

According to a study made by the BNEDER in 1990, the number of animals per hectare is low, given the scarcity of flora in the area.

Figure 3. Production of private land (data from the Services Agricoles d'El-Oued 1998-1999)

Commune	Date palms	Market gardening		Cereals		
	Area (ha)	Production (qx)	Area (ha)	Production (qx)	Area ha)	Production qx)
El-Meghaier	4193.56	181,189	215.08	24,196	40	160
Stil	296	6,602.5	8.0	830	40	160
Oum toyour	824.48	38,801.2	62.8	6,264.3	130	520
Sidi khelil	1316.1	56,925.2	23.58	2,505	-	-
Total	6630.14	283,517.9	309.46	33,795.3	210	840

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

All the excess drainage water from irrigation of the palm groves and sewage water from the surrounding regions flows without any treatment into the Khrouf Oued, which in turn empties into the *chott*. This form of water pollution, not yet surveyed, risks affecting in the long run the ecological characteristics of the *chott*. Poorly organized hunting is practised year round and affects all wildlife. Overgrazing accelerates the disappearance of several plant species as does wind erosion.

23. Conservation measures taken:

No conservation measures have yet been taken.

24. Conservation measures proposed but not yet implemented:

Organization of hunters into associations for hunting has been proposed in order to provide for monitoring and enforcement of a hunting plan, and there is a proposal to create a hunting reserve, including training and the establishment of anti-poaching game wardens.

25. Current scientific research and facilities:

Only the steppe and the palm groves have been studied for many years by the Université d'Alger and the Université des sciences et de la technologie Houari

Boumediène d'Alger (USTHB). This research covers primarily the flora. The fauna has not yet been studied.

26. Current conservation education:

A programme was begun for forest conservation in the wilaya of El-Oued in order to survey wildlife resources, monitor the evolution of bird life, protect Chott Merouane, organize days for the promotion of awareness in Oued Righ and celebrate world wetlands day.

27. Current recreation and tourism:

Hunting and fishing are common during the whole year by local hunters, especially on holidays and rest days (from 500 to 600 persons per year). Fishing is carried out in the spring and summer. Tourism by the local and sometimes regional inhabitants in the form of open-air camping is practised only in the summer and by a very small number of persons.

28. Jurisdiction:

Jurisdiction over the wetlands is the responsibility of the government through the Ministère des ressources hydriques and the water service of the wilaya of El-Oued. The surrounding areas are considered to be forests under the jurisdiction of the forest service of the wilaya of El-Oued.

29. Management authority:

Management is shared by the water service of the wilaya of El-Oued and the forest service in application of the water and forestry codes.

30. References:

Documents and administrative reports

Annex

Chott Merouane and Khrouf Oued (El-Oued)

Survey of waterfowl

Species	Scientific name	Survey period (winter)				
		1996	1997	1998	1999	2000
Pink flamingo	<i>Phoenicopterus ruber</i>	3000	11250	-	14500	22000
Ducks		1600	1000	2000	100	-
Waders		-	8014	-	50	-
<i>Busard des roseaux</i>	<i>Circus aeruginosus</i>	-	1	-	-	-
<i>Aigrette garzette</i>	<i>Egretta garzetta</i>	-	1	-	-	1
<i>Canard colvert</i>	<i>Anas platyrhynchos</i>	-	2	-	-	-
<i>Becassine des marais</i>	<i>Gallinago gallinago</i>	-	1	-	-	-
<i>Heron cendré</i>	<i>Ardea cinerea</i>	-	3	-	3	3
<i>Ibis falcinelle</i>	<i>Plegadis falcinellus</i>	-	5	-	-	-
<i>Echasse blanche</i>	<i>Himantopus himantopus</i>	-	24	-	-	-
<i>Grand cormoran</i>	<i>Phalacrocorax carbo</i>	-	-	-	45	-
<i>Avocette</i>	<i>Recurvirosta avosseta</i>	-	-	-	-	800
TOTAL		4600	20301	2000	14698	22804

2. Recorded sightings of fauna

Birds:

Scientific name	Common name	National status
<i>Himantopus himantopus</i>	<i>Echasse blanche</i>	protected
<i>Circus aeruginosus</i>	<i>Busard des roseaux</i>	protected
<i>Anas spp.</i>	Ducks	-
<i>Phoenicopterus ruber</i>	Pink flamingo	protected
<i>Recurvirosta avosseta</i>	<i>Avocette</i>	protected
<i>Plegadis falcinellus</i>	<i>Ibis falcinelle</i>	protected
<i>Limicoles spp.</i>	Waders	protected

Mammals:

<i>Sus scrofa</i>	wild boar
<i>Canis aureus</i>	jackal
<i>Lepus capensis</i>	hare
<i>Vulpes vulpes</i>	fox
<i>Vulpes zerda</i>	fennec
<i>Gerbilus gerbilus</i>	gerbil
<i>Mus spretus</i>	black mouse

2.3. Reptiles: giant lizard, lizard, snake

2.4. Batrachians: toad, frog

2.5. Fish: several species