

Information Sheet on Ramsar Wetlands

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

NOTE: It is important that you read the accompanying *Explanatory Note and Guidelines* document before completing this form.

1. Date this sheet was completed/updated:

18-03-1997

FOR OFFICE USE ONLY

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Designation date

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Site Reference Number

2. Country:

Islamic Republic of Iran

3. Name of wetland: Shadegan Marshes and mudflats of Khor-al Amaya and Khor Musa

4. Geographical coordinates: 30°30'N 48°45'E

5. Altitude: (average, max., min.) 0 - 15 m

6. Area: 400,000 ha

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

The largely seasonal floodplain wetlands of the Dez, Karun and four other rivers and the adjacent tidal mudflats at the head of the Persian Gulf in the Khuzestan lowlands of south-western Iran. There are fresh to brackish marshes in the north and barren tidal saline mudflats, creeks, sandbars and low muddy islands to the south. To the north there are more fertile lands with rice paddies, date palm groves and associated settlements. The site is extremely important for wintering waterfowl, especially *Marmaronetta angustirostris*, and also for breeding and passage waterfowl of a wide variety of species.

8. Wetland Type (please circle the applicable codes for wetland types as listed in Annex I of the *Explanatory Note and Guidelines* document.)

marine-coastal: A . B . C . D . E . F . G . H . I . J . K

inland: L . M . N . O . P . Q . R . Sp . Ss . Tp . Ts
. U . Va . Vt . W . Xf . Xp . Y . Zg . Zk

man-made: 1 . 2 . 3 . 4 . 5 . 6 . 7 . 8 . 9

Please now rank these wetland types by listing them from the most to the least dominant: G Ss M N Sp A F

9. Ramsar Criteria: (please circle the applicable criteria; see point 12, next page.)

1a . 1b . 1c . 1d | 2a . 2b . 2c . 2d | 3a . 3b . 3c | 4a . 4b

Please specify the most significant criterion applicable to the site: 2c, 2b, 1a

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

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits).

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

Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. Justification of the criteria selected under point 9, on previous page. (Please refer to Annex II in the *Explanatory Note and Guidelines* document).

1a: Shadegan Marshes and the tidal mudflats of Khor-al Amaya and Khor Musa are outstanding examples of floodplain wetlands and coastal mudflat ecosystems characteristic of the Persian Gulf.

1c: The wetlands play a significant hydrological and ecological role in the natural functioning of the northern Gulf.

2a: The marshes provide wintering habitat for some 30-60% of the world population of the globally threatened bird *Marmaronetta angustirostris*, and appreciable numbers of three other threatened species: *Pelicans crispus*, *Aythya nyroca*, and *Aquila heliaca*.

2b: The wetlands support a very diverse flora and fauna, and thus play an important role in maintaining the genetic and ecological diversity of the region.

2c: The seasonal marshes and mudflats are important breeding and nursery grounds for various fish species, and support large breeding colonies for several species of birds.

3a: The lakes regularly hold well in excess of 20,000 waterfowl.

3c: The wetland supports over 1% of the regional Middle East breeding populations of the waterbirds *Larus genei*, *Gelochelidon nilotica* and *Sterna albifrons*. During the migration seasons they hold over 1% of the regional population of *Anas querquedula* and in winter over 1% of the regional populations of *Ciconia ciconia*, *Phoenicopterus ruber*, nine species of Anatidae, *Haematopus ostralegus*, *Himantopus himantopus*, *Recurvirostra avocetta* and *Larus ridibundus*.

13. General location: (include the nearest large town and its administrative region)

Shadegan Marshes and the mudflats of Khor-al Amaya and Khor-Musa are situated in the Province of Khuzestan, at the head of the Persian Gulf near Abadan, 50-150 km south of the city of Ahwaz. This is a location at the southern frontier with Iraq on the Gulf. There are several small settlements in the area.

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

The wetland comprises the southern portion of the extensive floodplain and delta system of the Karun, Dez and several other rivers which rise in the northwest Zagros Mountains of western Iran. The better drained areas in the north support fresh to brackish marshes which give way to halophytic vegetation in the central floodplain and bare, dry mudflats in the south. The bottom of the wetland is muddy. Shoreline relief is typically a narrow or indistinct beach with vast silt or sandy tidal flats, up to 10 km wide in some places. Numerous small islands exist, and additional islands are forming as a result of deposition from the Karun river and Shatt Al Arab. There are creeks, mudflats and sandbanks between the islands. Autumn and winter rains in the Zagros Mountains cause extensive flooding throughout the delta, creating a vast complex of shallow lagoons with extensive sedge marshes. These dry out gradually during the long, hot summer, and the entire area may be completely dry by the end of the summer. The area is characterised by extremely high temperatures. Frosts are rare. Run-off is at its maximum in late winter, when discharge of the Karun River may increase tenfold over late summer levels.

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation etc)

The delta region is fed by overflow channels from the River Karun, seepage, irrigation canals, and to a lesser extent by local rainfall and run-off. The water level is higher following spring floods, but drains into the Gulf. The maximum water depth is 1 m., the average is very variable.

16. Ecological features: (main habitats and vegetation types)

The extensive seasonal freshwater marshes in the north are dominated by *Schoenoplectus* sp., and there are only small patches of reeds and reedmace. The brackish and saline areas further south are dominated by glasswort and other salt marsh species, with patches of tamarisk scrub on higher grounds. The wetland is bordered by barren flats to the east, northwest and north, and in the north there are also some sedge marshes that almost dry out during summer. To the northeast there is a large area of rice fields, date gardens and settlements.

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc)

The only flora mentioned are some reeds *Phragmites australis* and reedmace *Typha* sp., extensive *Schoenoplectus* dominated areas in the freshwater marshes in the north, and fresh to brackish sedge marshes dominated by *Scirpus* also in the north.

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

Shadegan Marshes and the mudflats of Khor-al Amaya and Khor-Musa are an extremely important wintering habitat for a wide variety of waterfowl, especially dabbling ducks, and also a very important breeding and staging area for various species. The Shadegan Marshes are the most important site in the world for marbled teal (*Marmaronetta angustirostris*), regularly supporting 10,000-20,000 in winter, which is 30-60% of the world population. A few pairs probably breed. Other noteworthy concentrations of wintering waterfowl have included 1,340 white stork (*Ciconia ciconia*), 2,080 greylag goose (*Anser anser*), in excess of 500,000 dabbling ducks (mainly common teal *Anas crecca* and northern pintail *Anas acuta*), and over 15,000 gulls (mainly black-headed gull *Larus ridibundus* and slender-billed gull *L. genei*). The wetland is also an important wintering habitat for Dalmatian pelican *Pelecanus crispus*, with at least 75 birds present. The mudflats at the head of the Gulf hold many thousands of shorebirds in winter, including large numbers of Eurasian oystercatcher (*Haematopus ostralegus*), bar-tailed godwit (*Limosa lapponica*), Eurasian curlew (*Numenius arquata*) and common redshank (*Tringa totanus*). Breeding waterfowl include various herons and egrets, a few pairs of ferruginous duck (*Aythya nyroca*), various shorebirds, 40-800 pairs of *Larus genei* and colonies of five species of terns. The vast sedge marshes are the stronghold of zitting cisticola (*Cisticola juncidis*) in Iran. Raptors are abundant in winter, and include black kite (*Milvus migrans*), white-tailed eagle (*Haliaeetus albicilla*), imperial eagle (*Aquila heliaca*), greater spotted eagle (*A. clanga*), saker (*Falco cherrug*), peregrine (*F. peregrinus*) and merlin (*F. columbarius*). Breeding birds include marsh harrier (*Circus aeruginosus*), white-throated kingfisher (*Halcyon smyrnensis*), pied kingfisher (*Ceryle rudis*), moustached warbler (*Acrocephalus melanopogon*) and clamorous reed warbler (*A. stentoreus*). A variety of landbirds typical of the Gulf coastal plain occur in the surrounding scrub and date gardens. At least 149 species of birds have been recorded in the reserve. A list of waterfowl counting results is attached.

Golden jackal (*Canis aureus*) and wild boar (*Sus scrofa*) are common in the reserve.

19. Social and cultural values: (e.g. fisheries production, forestry, religious importance, archaeological site etc.)

The harvest of reeds is of considerable importance in the local economy and there is some subsistence fishing and livestock grazing. In the south the river is used for shipping traffic.

20. Land tenure/ownership of:

(a) site: The National Government owns the major part of the area, with about 1,000 ha of privately-owned rice fields in the north.

(b) surrounding area: no information available

21. Current land use:

(a) site: There is some subsistence fishing going on, reed-cutting on a large scale in mid-summer to provide materials for thatching and weaving, and extensive grazing by domestic livestock. Part of the wetland is cultivated in privately owned rice paddies. A major oil terminal is located at Bandar Shahpur to the southeast, and there is a considerable amount of shipping traffic in the south, and from the ports of Khorramshahr, Bandar Mashur and Bandar Shahpur. Large areas of mudflats in the south are extremely difficult to access and not used at all.

(b) surroundings/catchment: there are a few small settlements with date gardens. The main highway from Ahwaz to Abadan passes along the west side of the site, while the main highway from Abadan to the port of Bandar Shahpur runs from west to east across the southern edges of the marshes.

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

(a) at the site: The principal long-term threat to the marshes is diminished water supply as a result of diversion of water for irrigation schemes further north. An irrigation scheme along the Karun River to the north has already reduced the inflow of freshwater into the marshes, and some of the area has been degraded to sterile silt flats by soil deterioration resulting from poorly managed irrigation schemes in the past. Some oil pollution has been reported on the beaches around Bandar Shahpur in the southeast. Illegal hunting occurs throughout the area, and there is little control by Department of the Environment personnel.

(b) around the site: Shadegan Marshes are situated in a military zone close to the border with Iraq. The Iranian National Reports of 1987 and 1990 indicated that the wetlands in the border areas had been severely polluted by bombardments with chemical weapons during the Iran/Iraq war in the 1980s. It was estimated that about 10% of Shadegan Marshes had been destroyed in that way. The marshes may also have suffered some damage as a result of "acid rainfall" during the Gulf War of 1991.

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made: management practices; whether an officially approved management plan exists and whether it has been implemented)

A wildlife refuge of 296,000 ha, encompassing all the main wetland areas and the coastal mudflats in the south, was established in 1972 and has remained unchanged since then. Hunting is prohibited at the site. The site is placed on the Montreux Record because of the damage done during the Iran-Iraq war.

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

Harrington (1976b) proposed that several of the islands between the Arvand River and Cape Bahrgan in the southeast should be appended to the Shadegan wildlife refuge. Most important among these are Bune and Dara Islands.

25. Current scientific research and facilities: (e.g. details of current projects; existence of field station etc.)

The Ornithology Unit of the Department of the Environment has carried out annual mid-winter censuses since 1971, and breeding-season surveys have been undertaken on several other occasions.

26. Current conservation education: (e.g. visitors centre, hides, information booklet, facilities for school visits etc.)

no information available

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

no information available

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

Department of the Environment
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15875 Teheran
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29. Management authority: (name and address of local body directly responsible for managing the wetland)
Department of the Environment, address as mentioned above (28)

30. Bibliographical references: (scientific/technical only)

- Carp, E. (1980). *A Directory of Western Palearctic Wetlands*. IUCN, Gland, Switzerland.
- Evans, M.I. (1994). *Important Bird Areas in the Middle East*. BirdLife International, Cambridge, United Kingdom.
- Harrington, F.A. Jr. (1976b). Iran, Surveys of the Southern Iranian Coastline with Recommendations for Additional Marine Reserves. In: *Promotion of the Establishment of Marine parks and reserves in the Northern Indian Ocean including the red sea and Persian Gulf. Proc. Regional Meeting, Tehran, Iran, March 1975*. IUCN Publications new series no. 35: 50-75.
- Mansoori, J. (1983). *National Report on Iran's Wetlands of International Importance as Habitat for Waterfowl*. Prepared for the Groningen Conference, Netherlands, in May 1984.
- Scott, D.A. (1976). *A List of the Wetlands of Iran*. Internal Report. Department of the Environment, Teheran, Iran.
- Scott, D.A. (1995). *A Directory of Wetlands in the Middle East*. IUCN, Gland, Switzerland and IWRB, Slimbridge, United Kingdom.
- WCMC (1990). Iran. In: Spagnesi, M (ed.), *Proceedings Conference on the Conservation of Wetlands of International Importance especially as Waterfowl Habitat, Cagliari, Italy, 24-29 November 1980*. *Supplemento alle Ricerche di Biologia delle Selvaggina*. Vol.III (1): 741-747.

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**List of bird species including counting results
Shadegan Marshes and mudflats of Khor-al Amaya and Khor Musa**

waterfowl

- globally threatened species

<i>Marmaronetta angustirostris</i>	10-20,000 w
<i>Pelecanus crispus</i>	w

- 1% or more of Middle East population

<i>Anas acuta</i>	237,000 w
<i>Anas clypeata</i>	16,980 w
<i>Anas crecca</i>	348,000 w
<i>Anas penelope</i>	9,050 w
<i>Anas platyrhynchos</i>	9,500 w
<i>Anas querquedula</i>	61 w
<i>Anas strepera</i>	10,000 w
<i>Anser anser</i>	3,500 w
<i>Ardea cinerea</i>	670 w
<i>Ardeola ralloides</i>	100 br
<i>Aythya ferina</i>	10,050 w
<i>Aythya nyroca</i>	br/10 w
<i>Casmerodius albus</i>	200 w
<i>Ciconia ciconia</i>	1,340 w
<i>Egretta garzetta</i>	100 br/350 w
<i>Haematopus ostralegus</i>	1,820
<i>Himantopus himantopus</i>	60 br/800 w
<i>Larus genei</i>	600 br/5,000 w
<i>Larus cachinnans/argentatus</i>	3,000+ w
<i>Larus ridibundus</i>	12,000 w
<i>Limosa lapponia</i>	2,120
<i>Limosa limosa</i>	750 w
<i>Numenius arquata</i>	950 w
<i>Nycticorax nycticorax</i>	140 w
<i>Recurvirostra avocetta</i>	br/883 w
<i>Sterna albifrons</i>	150-250 br
<i>Sterna hirundo</i>	60-100 br
<i>Sterna nilotica</i>	100-200 br
<i>Tadorna tadorna</i>	3,720 w
<i>Tringa totanus</i>	1,260 w
<i>Vanellus leucurus</i>	60+ br/320 w
<i>Vanellus vanellus</i>	600 w

other birds:

<i>Acrocephalus melanopogon</i>	br
<i>Acrocephalus stentoreus</i>	br
<i>Aquila clanga</i>	9 w
<i>Aquila heliaca</i>	19 w
<i>Ceryle rudis</i>	550 br
<i>Circus aeruginosus</i>	40 br/70 w
<i>Falco cherrug</i>	w
<i>Falco columbarius</i>	w
<i>Falco peregrinus</i>	w
<i>Halcyon smyrnensis</i>	br
<i>Milvus migrans</i>	370 w
<i>Haliaeetus albicilla</i>	4 w

all counts individual birds

br = breeding, w = wintering

sources: Evans, 1994 and Scott, 1995