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:

19. 10. 92

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Designation date

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Site Reference Number

2. Country:
MOROCCO

3. Name of wetland: LA BAIE DE KHNIFISS

4. Geographical coordinates: 28° N, 12°15' W

5. Altitude: (average and/or max. & min.) 30-50 metres

6. Area: (in hectares) 6,500 ha

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)
The lagoon at Khnifiss is the most important desert wetland in Morocco. The site has been shown to be important as a point of passage and a wintering ground for birds, since 80% of birds observed either winter there or pass through on their path of migration.

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:

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: _____

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:

Direction des Eaux et Forêts et de la Conservation des Sols
Rabat- Chellah, Morocco

***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).

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

The site lies 120 km south of TAN TAN and 70 km north of TARFAYA.

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)

Geology and geomorphology: The area is made up of carbonate-based sediment deposited during the Upper Cretaceous (during marine transgressions) and Quaternary deposits which form the coastal platform. These deposits are separated from the Hamada Plateau by a scarp. Pedogenesis has frequently produced slightly patterned sandy soils.

Climate: Annual precipitation varies between 40-50 mm, with minimum and maximum temperature ranges of 13°-19°C and 19°-24° C respectively.

Water quality: surface water analysis shows enrichment with nutritive salts, particularly phosphates. 2/3 of the lagoon waters are extremely salty.

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

The lagoon communicates with the Atlantic through Foum Aguitar, a narrow sound. High tide is rather persistent on the northern side of the Tazra Depression (Sebkha).

There is hardly any fresh water in the lagoon, although there is a significant concentration at Guelta El Aouina.

The lagoon is fed by precipitation, frequently falling in storms, and by underground and surface flows from Oued Aouedri.

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

The Khnifiss wetland has both Mediterranean vegetation, north of the Sahara, and tropical vegetation, to the south. The reg (desert) is covered with perennial woody shrubs which only rarely exceed 1·5m in height; and annual plants which only appear in winter. There are endemic species at the site. Several algae species have been identified.

The site is divided into the following biotopes on the basis of characteristic plant species:

- Reg (desert): typical species are *Zygophyllum gaetulum, Frankenia carymbosa, Echiochilon chozaliei*…
- Sebkha: these depressions are often covered with vegetation, except for the fringes of the Tazra Sebkha, which has halophytic species.
- Cliffs: the typical species here is *Astydamia latifolia*.
- Duneland: with *Halocnemum strobilaceum, Limonium tuberculatum*…
- Brackish water: with, in particular, *Tamarix gallica, Juncus maritimus*.
- Tidal zone: with *Halimium portulacoides, Salicornia* sp….

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

Presence of species from the west coast of Europe, such as *Spartina maritima* and *Zostera noltii*, with *Astydamia latifolia* as a species endemic to the Canary Islands.

Endemic plant species have been identified at the site. They are: *Opophytum gaussenii, Asparagus altissimus Munby, Anvillea radiata, Echiochilon chazaliei,Salsola glomerata, Helianthemum ellipticum*...

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

A study of the Khnifiss wetland has identified 179 species ,including 79 migratory species (*Podiceps nigrocollis, Podiceps ruficollis, Puffinus gresus*…), 65 wintering species (*Ardea cinerea, Anas strepera*…), and 6 chance visiting species (*Turdus torquatus*..).

18 harpacticoid copepod species have been found in the sandbanks, coastal sea water and the extremely salty water in the lagoon.. Endopsamimic species predominate in the lagoon sediment.

The study also examined the possibility that Khnifiss might be a spawning ground for several fish species, particularly *Mugil capurii , Mustelus mustelus, Sphyrna zygaena*…

*A herpetological study identified 15 species between the lagoon and Tarfaya. 15 (27) mammal species were noted, including the endemic *Crocidura tarfayensis*.

*this sentence garbled in the French original

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

There is as yet no notable human pressure on the site. Traditional line and net fishing is practised.

20. Land tenure/ownership of:

(a) site: State-owned maritime waters; collectively owned land

(b) surrounding area: collectively owned rangelands.

21. Current land use: (a) site: fishing (b) surroundings/catchment: rangelands

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: A monitoring system for the coastal regions has been set up by the provincial authorities. No notable changes have yet been observed.

Urban development through the building of tourist infrastructures cannot be ruled out.

(b) around the site: Overgrazing may well exacerbate desertification by shifting the sand dunes.

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)

Responsibility for management taken over by Laayoune forest service.

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

A management plan needs to be elaborated to conserve the site, even though no direct pollution has been observed.

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

None

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

None. The site could play an important role in the future for Tarfaya and Laayoune.

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

Major potential.

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

Ministère de l'Agriculture et de la Réforme Agraire
Direction des Eaux et Forêts et de la Conservation des Sols

29. Management authority: (name and address of local body directly responsible for managing the wetland)

Laayoune Forest Service

30. Bibliographical references: (scientific/technical only)

Mohamed DAKKI and Wilhelmina DE LIGNY (1988): The Khnifiss Lagoon and its surrounding environment (Province of Laayoune), Morocco).

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