

Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 28 January 2001
2. Country: Algeria
3. Name of wetland: Wetlands of the Guerbes-Sanhadja plains
4. Geographical coordinates:

36° 46' - 37° North latitude
7° 8' - 7° 25' East longitude

5. Altitude: 0–190 metres
6. Area: 42,100 hectares
7. Overview:

This is a large coastal plain bordered on the west by the Skikda coastal hills and to the east by the wooded coastal forest range of Chetaïbi. The altitude of this area is between 0 and 200 metres; 48.5 per cent of the land has a slope of less or equal to 3 per cent and the rest has a slope of 12.5 per cent. The main lithographic units are formed by aeolian and alluvial deposits. The outstanding characteristic of the fauna and flora of this region reflects at least three factors: its geomorphologic diversity, its soils and its role as a bioclimatic crossroads, creating high biological diversity. The continental dune formation of the Guerbes plain is a water reservoir of approximately 40 cubic hectometres, which has created a large number of depressions and valleys forming lakes and marshes (*garâas*) of several hectares to several tens of hectares. To the east and south of this area, the El-Kébir Oued and its tributaries, with many meanders (because of the slight slope), feed a series of natural or artificial water sumps (small dams or blocked hillsides). Contact between the dunes and the alluvial plains has created wet forests (alder groves) as large as 180 hectares. Finally, although most of these environments have a soil pH of acidic to neutral, often growing on bogs, the collected water is affected by the tides in the delta of the El-Kébir Oued, reaching several hundreds of hectares and is a migration route for wintering bird life with a soil pH clearly alkaline. There are four large systemic groups of specific fauna and flora (Samraoui and de Belair 1997).

8. Wetland type:

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

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

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

Please indicate the outstanding characteristic of this site: 1

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:

Criterion 1: The Guerbes plain contains sites of international importance that are representative examples of rare or unique natural wetlands, either for the Maghreb, North Africa, the sub-region of North Africa/Central Africa or the Mediterranean region. The Guerbes plain is a bioclimatic crossroads. Its continental dune range, a morphology of patterns oriented northwest to southeast and a system of depressions and dunal valleys, creates a cooler climate because of the prevailing winter winds and a humid heat in the summer. Furthermore, the thinning out of the vegetation on the dunes leads to a quick drop in temperature in the winter in several aquatic habitats. Also, individual sites or several sites several hundred metres apart can simultaneously have plant and animal species of tropical (5 per cent of the 234 species of flora, directly found in the wetlands), northern (28 per cent), sub-Saharan African (34 per cent) and Mediterranean (34 per cent) origin (Samraoui and de Belair 1997).

Criterion 2: The system of wetlands on the Guerbes-Sanhadja plain is of special importance because of the nesting of the *erismature à tête blanche*, whose population of 10 couples exceeds 1 per cent of the total world population, the ferruginous duck and the *poule sultane* and the presence of 23 very rare plant species.

Criterion 3: The Guerbes-Sanhadja plain plays a special role in the maintenance of biological diversity because of the richness and diversity of its fauna and flora. In an area of more than 28,000 hectares, approximately 234 plant species (out of a total of 1800 for North Africa) of varied biogeographic origin, representing 145 species directly linked to the aquatic environment, 50 species of birds and 27 species of odonates are found. Among the recorded plant species, 19 are rare and 23 are very rare.

Criterion 6: The nesting population of *erismature à tête blanche* in the Guerbes-Sanhadja plain system of wetlands is more than 1 per cent of the total world population. The first recorded sighting of nesting was in 1990–1991, when a population of 10 couples was recorded (Boumezbeur 1993).

Criterion 8: The wetlands of the Guerbes-Sanhadja plain are a place of migration and a feeding site for eels and other marine species not yet studied.

13. General location:

This system of wetlands on the Guerbes-Sanhadja plain is located in northeastern Algeria, in the wilaya of Skikda, to the west of Annaba and the el-Kala wetlands, in the wilaya of el-Tarf.

14. Physical features:

Geology and soils: The soils are aeolian deposits associated with poorly evolved alluvial soils. There are also brown soils, which are often leached. Most of the soils are found in relatively flat areas and, although their texture is variable, they are apt for intensive or semi-intensive use, but have limited capacity because the aeolian deposits are usually unstable and chemically poor.

Hydrology: The hydrological network is formed primarily by two large *oueds*: the el-Kebir Oued and the Magroune Oued. The first *oued* is the most important because of its extension and volume. Its width varies between 20 and 50 metres, and it empties into the Mediterranean at the Marsa beach. Eight other *oueds* of lesser importance also form the plain's hydrological network. Three water basins are found in this area (figure 1).

Figure 1. Volume of the water basins on the Guerbes plain

Water basin	Area (ha)	Flow (M of m ³)	Reservoir (M of m ³)	Groundwater reserves
East of Skikda	4927	16.5	202.5	19
El-Kébir Oued (west)	23046	27.5	181	10
West of Annaba	704	38	360	84.5
Total	28677	82	743.5	113.5

M of m³ = millions of cubic metres

Climate: The Guerbes plain is in a subhumid bioclimatic area with two variants: hot subhumid over 96.5 per cent of the total area, mild subhumid over the remaining 3.5 per cent.

There are four types of rainfall:

- type 1 in 72.3 per cent of the total area, receiving between 700 and 800 millimetres of annual rainfall;
- type 2 in 9.9 per cent of the total area, receiving between 600 and 700 millimetres of annual rainfall;
- type 3 in 17.4 per cent of the total area receiving between 800 and 900 mm of annual rainfall;
- type 4 in 0.4 per cent of the total area, receiving between 900 and 1000 millimetres of annual rainfall.

15. Hydrological values:

The system of wetlands of the Guerbes-Sanhadja plain, while not yet studied in detail, plays an important role in recharging the aquifers, flood prevention, capturing sediments and stabilization of shores.

16. Ecological features:

Several habitats are represented by examples of plant associations with rare species:

1. ponds of *Salvina natans* (Pteridophytes), *Lemna gibba* or *Wolfia arrhiza* and *Polygonum senegalense*; areas of water among the dunes with *Myriophyllum alterniflorum*, *Nymphaea alba*, *Potamogeton lucens*, *Ricciocarpus natans* and *Rorrip amphibia* (Bryophytes);

2. alder groves of *Alnus glutinosa*, *Campanula alata*, *Carex elata*, *Cladium mariscus*, *Eleocharis multicaulis*, *Ranunculus flammula*, *Rhynchospora glauca* and several orchids (*Dactylorhiza elata*, *Seraptas lingua* and *S. parviflora*);

3. areas of water on the alluvial plain with *Polygonum amphibium* and *Rumex algeriensis* associated with a sciophyte;

4. ponds with *Chrysanthemum clausonis* and *Isoetes velata*

5. swamps with and *Coronopus squamatus* and *Salicornia arabica*;

6. riparian forests with *Populus alba*, *Salix alba*, *Ulmus campestris* and *Vitex agnus-castus*.

17. Noteworthy flora:

Up to 234 plant species have been identified at the lake, of which 145 species are limited to the wetlands. This represents more than 14 per cent of the flora of North Africa and Algeria (1800 species). Mediterranean species represent one third of the recorded plants, cosmopolitan species represent only 14.4 per cent, while Euro-Mediterranean species represent 9.2 per cent. Among the 234 species recorded, 19 are rare and 23 are very rare.

18. Noteworthy fauna:

The Guerbes plain is the nesting site of two very rare species: the white-headed duck (*Oxyura leucocephala*), the ferruginous duck (*Aythya nyroca*) and probably a third, the *sarcelle marbrée*. In addition, there are *poule sultane*, *foulque macroule*, *grèbe huppé*, *grèbe castagneux*, *poule d'eau* and other waterfowl. The white-headed duck is considered to be threatened on a worldwide scale and its population is declining because of climate changes and the impact of humans on this species's habitat. Many other species visit the lake in winter. There are also many species of fish in the lake, including eel, *barbeau* and *mulet*. The marine area, however, has not yet been studied.

19. Social and cultural values:

No information is available.

20. Land tenure/ownership of:

All of the wetlands belong to the government and, according to the water code, are public property. The other wooded areas and farmland are private property.

21. Current land use:

The current use of the plain is primarily the use of shores for agriculture and grazing. The area suitable for agriculture represents 47.4 per cent (13,591 hectares) of the total area, including farmland, forestry and other crops in association (especially tomatoes and watermelons and other melons). The forests (maritime pine, eucalyptus, poplar, alder and several remnants of *liège* oak) of varying density represent 37.8 per cent (10,845 hectares). The pastures and fallow land represent 6.4 per cent (1,826 hectares), while the wetlands represent 8.4 per cent (2,415 hectares). The main land use is agriculture where tillable land dominates. The wooded areas are scrub forests.

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

Unplanned expansion of agriculture, the excessive use of plant products and waste water from the Daïra de Ben Azzouz and the villages located up stream threaten the site and the surrounding area. The clearing of wooded areas is carried out on a large scale in order to obtain land for seasonal crops with a high market value in this region (watermelon, melon, tomato and peppers). This inevitably leads to aeolian erosion, which, given the sandy nature of the soils, can lead to the desertification of all the area, including the lakes and depressions. Furthermore, because of the existence of sand (continental dunes), there is unplanned and sometimes illegal extraction. In the long run, this risks causing destabilization of part of the area and changes at the site.

23. Conservation measures taken:

At the present time, there is no specific conservation status for the area. The woods and wooded land are administered by the forestry service (forestry code), and the wetlands are the responsibility of the water service (water code), while agricultural land is under the aegis of the farm services (rural code).

24. Conservation measures proposed but not yet implemented:

In March 2000, following field studies, a project was drafted for creating a regional nature park of the Guerbes-Sanhadja plain between the Direction de la flore et de la faune (DGF-Alger) and the forestry department in Skikda. There are plans, in conjunction with the preparation of a draft management plan for the future regional nature park, to organize during 2000 a workshop to announce officially the beginning of studies and surveys for the creation of this protected area. Given the importance and the quality of the available

scientific data, the classification could be assigned in 2001, at the latest. An administrative decree creating the regional nature park of Guerbes-Sanhadja has been submitted to the Wali (réfet) for signature.

25. Current scientific research and facilities:

The area has benefited from a study to identify a project for the protected area “Edough-Fetzara-Guebes” under a project financed by the GEF-World Bank for the management plan for the El-Kala national park. Currently, there are no research facilities, but there is a large university 30 kilometres away in Annaba, which provides post-graduate training on wetlands.

26. Current conservation education:

Only one local NGO is currently active in education and promotion of awareness of conservation in the general public through the organization of field visits. But soon the forestry service in Skikda will begin the development of a large campaign to promote awareness as part of the project to designate the Guerbes-Sanhadja plain as a regional nature park.

27. Current recreation and tourism:

Located off the main communication axis, the Guerbes plain does not yet attract a large number of tourists. It is especially known for its agricultural products (industrial tomatoes, watermelon and melon). Only the beach area of Marsa, located on the edge of the plain, receives a large number of tourists during the summer.

28. Jurisdiction:

Territorial jurisdiction is the responsibility of the wilaya of Skikda, Daïra and the commune of Ben Azzouz. While the area is under the jurisdiction of the government, functional jurisdiction is ensured by the Ministère de l’agriculture, the Ministère des ressources en eau and the Ministère des travaux publics, de l’aménagement du territoire et de l’environnement.

29. Management authority:

Conservation of the forests of Cité des Frères Chebel, Skikda, Algeria.

30. References:
