

## 1.3 MAURITANIA

### Introduction

Mauritania has an area of 1 030 700 km<sup>2</sup>, a population of 1 781 000, and therefore a mean population density of 1.7 persons/km<sup>2</sup>. The country extends 1430 km from north to south between latitudes 14°46'N and 27°23'N, and 1275 km from east to west between longitudes 4°44'W and 17°04'W. It is bounded by Senegal and Mali in the south, by Mali in the east, by Algeria and Western Sahara in the north, and by Western Sahara and the Atlantic Ocean in the west. It has an Atlantic coastline of 815 km and a broad coastal plain below the 100 m contour. This extends inland for over 300 km in the south and 70 km in the north. East of this a tortuous scarp line rises abruptly to a flat interior peneplain lying 180-230 m asl. There are many inselbergs in the lowlands immediately to the west of the gullied and dissected scarp line. Other inselbergs are situated on the interior peneplain. The highest point in the country, 915 m asl, is reached at Kediet ej Jill (22°38'N/12°33'W) on the western central part of the interior peneplain. This comprises a number of plateaux separated by broad fossil wadis, e.g. the plateau of Adrar in the central region, and that of the Tagant to the southeast.

Most of the country is covered by skeletal soils with at least 50% being covered by sand dunes. The major dune fields cross the central region in parallel lines oriented SW-NE, and extend from the coast to the northeastern border with Mali. The western edges of the paleozoic sandstone plateaux of the Adrar and Tagant are deeply dissected and the many steep-sided gorges form dendritic systems leading to wide wadis. More often than not the wadi beds are partly choked by sand dunes.

Regular drainage occurs only in the south, where rains occur each summer, and is to the Senegal River which flows along the southern border. Rainfall over the rest of the country is extremely unreliable and falls in the north are often so light as to produce little run-off. However, occasional storms produce ephemeral floods in wadis, and these are either dissipated in large pans (sebkhet) in the interior, some of which hold large temporary ponds, or reach the coastal marshes via the depressions between lines of dunes. In some of the higher and more sheltered gorges, semi-permanent surface waters collect in pools (gueltas) or there may be springs.

### Climate

Mauritania is hot and extremely arid. North of the Tropic of Cancer, NE Trade Winds blow constantly from the Sahara, and for 8-10 months they prevail over the southern parts of the country as well. Their influence wanes in the south only as the intertropical convergence moves north in summer, bringing humid air to southern and central districts. The humid air mass persists over the southernmost regions for up to three months, but may reach the central districts only for a week or two. At Sélibabi (15°10'N/12°11'W) where the mean annual rainfall exceeds 550 mm, the rains may begin as early as June and persist until October. At Kiffa (16°37'N/11°42'W), where rain falls in the

July-September period the mean annual receipt is 350 mm. However, slightly farther north and to the west, Boutilimit (17°33'N/14°42'W) receives rain only in August and early September, and mean annual precipitation at Nouakchott, on the coast (18°06'N/15°57'W), is only 139 mm. Here mean monthly totals are 12 mm in July, 58 mm in August, 42 mm in September and 10 mm in October. Thus at this centre, 88% of the annual rain falls in 4 months and 72 % in August-September. In the central region, neither Tidjikdja (18°33'N/11°35'W) nor Atar (20°31'N/13°03'W) has a truly rainy month. Both these towns are situated on the edge of the peneplain. Atar receives a mean annual total of 103 mm of rain per year, and Tidjikdja 140 mm. At Atar the wettest months are August and September with mean monthly totals of 33 and 37 mm respectively, i.e. less than 1 inch per month. Still farther north, mean annual rainfall at Nouadhibou (20°54'N/17°04'W) is less than 50 mm, while Fddrik (22°41'N/12°43'W) and points farther north are virtually rainless. Annual rainfall variations are large throughout the country, e.g. at Kiffa 65 mm were received in 1924 and 663 mm in 1933.

The mean temperature of the coldest month at Nouakchott is 21°C and that of the warmest month 30°C. Farther north, but still on the coast at Nouadhibou the corresponding figures are 20°C and 26°C. Here the lower temperature for the warmest month reflects the influence of the cold Canary Current which flows close to the shore at Nouadhibou, but swings away westwards to the south. Mean temperatures for the coolest and warmest months at interior centres are 23°C and 34°C for Kiffa, 24°C and 34°C for Tidjikdja, 20°C and 35°C for Atar, and 18°C and 33°C for Fort Gouraud. The mean annual temperature at Akjoujt (19°44'N/12°20'W) is 28.4°C which makes it among the very hottest centres in the Sahara. Potential evaporation exceeds 3500 mm over most of the country and reaches 4500 mm in the north. Relative humidity is generally low 10-30% across the country, except during the rainy season in the south when values as high as 80% may be reached.

## **Wetlands**

Tidal wetlands occur in the Senegal River Delta and along the coast between Cape Timirist (19°23'N/ 16°33'W) and Nouadhibou, but mangrove vegetation reaches a northern limit in the vicinity of Tidra Island (19°38'N/16°23'W). Other, non-tidal, wetlands occur along the coastal strip immediately behind the beach; here drainage from the interior is impeded by the barrier beach with the consequent development of broad brackish marshes. However, economically, the most important wetlands in Mauritania are along the Senegal River. There are several large pans in the interior which may contain lakes of standing water for short periods after ephemeral rains, and the floors of some wadis occasionally contain running water. Surface water collects into semipermanent pools (gueltas) in the upper reaches of some gorges on the escarpments of the Adrar and Tagant. Some oueds have water tables sufficiently close to the surface, sufficiently often, to support arborescent vegetation, and there are springs (oases) in others.

### **List of Wetlands Described**

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2. Coastal Swamps & Marshes
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  - (b) Marshes of the Aftoilt es Saeli
  - (c) Coastal Pans
3. The Floodplain of the Senegal River

#### 4. The Senegal River Delta

#### 5. Natural Lakes

- (a) Lake Rkiz
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- (c) Mare du Diaouling
- (d) Mare de Nter
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#### 6. Interior Pans - Sebkhet

#### 7. Oases: Oueds, Gueltas & Springs

- (a) The Oum Lem Har Gorge
- (b) The Springs of Terjit
- (c) The El Berbera Oasis
- (d) The Tartega Gueltas
- (e) The Gamra Ouarbi Gueltas & Oued of El Housseiniya

#### 8. Artificial Impoundments

### 1. Tidal Swamps

**General:** There are close to 63 000 ha of tidal land in Mauritania, excluding mudbanks. Vegetated tidal land occurs in the far south of Mauritania, in the delta of the Senegal River, but is absent between there and Cape Timirist. Between these points the sandy beaches are backed by a high ridge and are exposed to strong wave action.

A small tidal swamp, of 200 ha, is situated immediately behind Cape Timirist, with other swamps at either side of the mouth of the Bay of Saint-Jean. Other tidal swamps are found half way along the southern shore of this bay, and also at the head of the bay where the Sebkhet Râs el Mâ is 3 km wide and tapers to a point 7 km inland. On the northern shore there is a small swamp, midway along, and another at the head of an arm of the bay which branches off from the north shore. Altogether there are about 3100 ha of tidal swamp and marshland on the bay, and several hundred hectares of mudbank near the mouth, which are exposed at low tide.

Immediately to the north, tidal swamps are well developed in the vicinity of Tidra Island (19°36'-19°49'N/16°18'-16°27'W). Such a swamp runs for 37 km along the eastern shore of the island covering 7400 ha. Other tidal swamps occur across the 2-6 km wide channel that separates the island from the mainland. Here there are some 1400 ha of mangrove swamp on emergent mudbanks and a further 1700 ha in bays on the mainland. A 2800 ha swamp lies behind the mainland beach in a 22 km long depression, oriented SW-NE, which is open to the sea at both ends. The seaward shore of Tidra Island carries a 20 km long, 1600 ha swamp, which is rather more than 2 km wide in places, while other swamps occur on Kîji (19°40'-19°44'N/ 16°27'-16°31'W) and 13 smaller islands. Some of the small islands are 5 km long and 1 km wide, and are all completely covered by mangroves, while the swamp on Kiji is 7 km wide and 2.5 km

wide at the southern end. To the northwest the two Arel Islands are also totally mangrove clad. A rectangular mudbank, 24x22 km, separates the Arel Islands (19°54'-19°57'N/16°30'-16°34'W) from Tidra and Kîji, most of which is exposed by the lowest tides. Excluding emergent banks, there are nearly 19 000 ha of tidal swamp in the Tidra area.

North of Tidra a tidal swamp, some 16 km long and 1-3 km wide, extends up the coast from latitude 20°00'N to Râs (Cape) Tafarit (20°08'N). North of this, the southern shore of the Bay of Tanoûdert is devoid of swampland, but the sea again inundates a low lying area beginning on the north shore of the bay near Tanoildert village (20°13'N) and extending northwest for 72 km, to the head of the Bay of Arguin (20°48'N). This long salt-marsh varies in width from a few hundred metres to over 5 km and comprises 18 000 ha of tidal land. Other salt-marshes, to landward of extensive mudbanks, occur on the shores of Marguerite, l'Ardent and d'Arguin Islands in the bay of Arguin. Other mudbanks and narrow salt-marshes extend for 18 km up the western bayshore from Cape d'Arguin to the bayhead. There are some 19 000 ha of tidal marsh in this coastal sector.

In the most northern coastal section, salt-marshes are well developed along the shores of the Bay of Levrier. Leaving Cape d'Arguin, the first 18 km of coastline, running NW, is of high relief, but thereafter 3 large salt-marsh blocks occur on the eastern bayshore. The southernmost (20°40'-20°48'N/16°38'-16°47'W) is 14 km long and 2 km wide in places; the second (20°49'-20°58'N/16°44'-16°47'W), separated from it by a 3 km stretch, is also 14 km long, but reaches a width of 6 km. A gap of 12 km intervenes between this and the final salt-marsh (21°02'-21°17'N/16°48'-16°58'W), which runs for 24 km round the head of the bay and extends inland for 13 km in a block 8 km wide. This is known as the Sebkhét Atouéfât. This last salt-marsh covers 14 600 ha. Other tidal marshes occur down the western shore of the bay to Nouadhibou in discontinuous fashion, and another small marsh occurs on the Atlantic side of the Cape Blanc Peninsula, north of Cape Blanc (20°46'N/17°03'W) in a depression behind Cape Dubouchage (20°51'N/17°06'W). There are more than 21 500 ha of salt-marsh on the Bay of Lèvrier.

**Hydrology:** Spring tidal range on the northern coasts is close to 2.1 m and as coastal slopes are gentle, the tide penetrates several kilometres inshore. However, a consequence of this is that at neap tides, with an amplitude of only 60 cm, vast areas of the marshes are unflooded for substantial periods and salts crystallise at the surface.

The landward fringes are therefore highly saline. The sea between Cape Blanc and Cape Timiris is remarkably shallow and is mostly less than 5 m deep at low tide. Direct precipitation over the salt-marshes is minimal, averaging less than 40 mm/yr.

**Flora & Fauna:** Mangroves occur on the Senegal River Delta where *Rhizophora racemosa* is dominant along creeks and *Avicennia africana* covers the back-swamps, with occasional specimens of *Conocarpus erectus* on sandy ridges. *Avicennia africana* forms monospecific tidal woodlands around Tidra Island and the mainland opposite. This species also dominates the tidal zones of the swamps on the Bay of Saint-Jean. North of Tidra, herbaceous vegetation covers tidal marshes which often contain large barren salinas. Vegetation is frequently confined to the landward fringe and a seaward belt subject to daily inundation. The middle zones, subject to infrequent inundation, are extremely saline. *Sesuvium portulacastrum* and species of *Salicornia* and *Suaeda* predominate. Some typical strand species, such as

*Ipomoea pescaprae* and *Sporobolus virginicus* occur on the margins of the salt-marshes. *Cymodocea nodosa*, *Halodule wrightii* and *Zostera* sp. dominate the lower mudflats, with *Spartina maritima* at upper levels immediately to seaward of the mangroves.

The shallow offshore waters are an important breeding ground for fish, and details of local fish populations can be found in the Bulletins of the Laboratoire des Pêches de Nouadhibou. Four species of turtle breed on the northern beaches, *Caretta caretta*, *Chelonia mydas*, *Dermochelys coriacea* and *Eretmochelys imbricata*. All are endangered.

The Banc d'Arguin is in the Atlantic flyway and it is estimated that several million waders, which breed in northern Europe, overwinter in the region each year, and quite possibly as many as 2 million birds frequent the Banc d'Arguin National Park. These include *Calidris alpina*, *C. canutus*, *C. ferruginea*, *Charadrius hiaticula*, *Limicola falcinellus*, *Limosa lapponica*, *Platalea leucorodia* and *Pluvialis squatarola*. Various African species breed on the islands, among them *Ardea cinerea*, *Chlidonias nigra*, *Egretta gularis*, *Gelochelidion nilotica*, *Hydroprogne caspia*, *Larus genei*, *Pelecanus onocrotalus*, *Phalacrocorax africanus* and *Phoenicopterus ruber*.

Most of the common wetland mammals associated with the West African and North African regions are absent in this transition zone. Other species, which extend into this zone on the Atlantic coast of the Sahara, have expanded their ecological amplitudes and occupied the niches of the absent species. Rodents are present in the landward parts of the marshes, and among the carnivores recorded in wetlands here are *Canis aureus*, *Felis lybica* (often referred to *F. sylvestris*), *F. margarita*, *Genetta genetta*, *Vulpes rupelli* and *Poecilogale albinucha*. *Monachus monachus* occurs on the coast around Cape Blanc.

**Human Impact & Utilisation:** Much of the coast is very sparsely populated and human interference is minimal. The peripheral wetlands are browsed by camels and goats. The offshore waters are fished intensively by an international fishing fleet and there is a concern in some quarters that a consequent reduction in the fish populations will adversely affect the aquatic bird populations.

**Conservation Status:** A very substantial area of the coast, including both mangrove and salt-marsh, is protected in the Banc d'Arguin National Park between 19°21'N and 21°51'N. This includes all the mangrove and salt-marsh in the Tidra district, and all tidal marshes in the Bay of Arguin.

## 2. Coastal Swamps & Marshes

### (a) THE MARAIS DE TOUMBOS

**Country:** Mauritania

**Coordinates:** 16°32' -16°47' N/16°18'-16°26'W

**Area:** c. 5000 ha (1400 ha permanent water)

**Altitude:** 1-2 m asl

**Nearest Towns:** Keur Massène (19 km E); Nouakchott (140 km N)

**General:** The swamps consist of a series of vegetated, permanently inundated depressions, situated in an area of wet sands parallel to the barrier beach. The swampy basin is 29 km long, with a SSW-NNE axis, and the largest of the flooded depressions, known



as the Marais de Toumbos, is 12 km long and up to 1.3 km wide. It is situated 2.8 km from the beach and is entirely surrounded by an area of permanently wet sands. Immediately to the south of this lake, an isolated shallow lakelet, known as Chott Boul, approaches to within 400 m of the beach. Flats subject to periodic inundation lie to the south of the system in the delta of the Senegal River, and also to the north along the Aftout es Sâheli where coastal marshes stretch up the coast for 140 km to Nouakchott.

**Hydrology:** The swampy basins are flooded semi-permanently although the water levels fluctuate considerably during the course of a year. Water is derived from direct precipitation, and from run-off and seepage from the hinterland, and collects behind the beach barrier. The water is generally brackish.

**Flora & Fauna:** The swampy lakes contain *Phragmites mauritianus* and *Typha domingensis*, and the surrounding sands support *Acacia nilotica* and *Tamarix senegalensis* as well as bushes of *Arthrocnemum*. The fauna is as for the Senegal River Delta.

**Human Impact & Utilisation:** Relatively undisturbed.

**Conservation Status:** Unprotected.

#### (b) MARSHES OF THE AFTOUT ES SAHELI

**Country:** Mauritania

**Coordinates:** 16°00' - 18°00' N/16°00' -16°30' W

**Area:** 120 000 ha

**Altitude:** 0-1 m asl

**Nearest Towns:** Nouakchott (at N end); Keur Massène (at S end)

**General:** The coastal strip known as the Aftout es Sâheli stretches from the Senegal River Delta to the vicinity of Nouakchott, 175 km north. The southern end of the strip encompasses the Marais de Toumbos, and thereafter it is subject to periodic inundation all the way to Nouakchott. The southern part of the strip is over 12 km wide, but the marshes narrow towards the north where they may be only 3-5 km wide. The wetland is a mosaic of vegetational zones which reflect the depth and duration of inundation. In general the side nearest the beach is subject to deeper and more prolonged inundation than the landward side, but the zones interdigitate. The most deeply flooded zones hold water for up to 6 months in some years. The hinterland is covered with scrubby savanna in the south and steppes in the north and comprises a lowland, 20-30 m asl, with a series of SW-NE oriented parallel ridges.

**Hydrology & Water Quality:** The waters rise following the late summer rains, between July and September. Much water is lost to the sea by seepage, and much more by evaporation, but there is a slow longshore flow to the south, to the Senegal River Delta. The surface waters are always brackish, and the soil water is saline. All the wells along the landward margin produce saline water.

**Flora & Fauna:** *Tamarix senegalensis* is very common locally, as are bushes of *Arthrocnemum glaucum*, and these two species dominate large areas subject to minimal inundation. Species of *Salicornia* and *Suaeda* are locally abundant on lower sites and *Juncus*, *Phragmites*, *Scirpus* and *Typha* occur where inundation is more prolonged. *Avicennia africana* grows on the fringes of these marshes in places, in non-tidal and very infrequently flooded sites. Fauna as described in the introduction for coastal wetlands.

**Human Impact & Utilisation:** The area is extremely sparsely populated and has been little interfered with. A road from Keur Massène and the delta towns runs along the landward side of

the marshes to Nouakchott, but there are few settlements along this.

**Conservation Status:** Unprotected.

### (c) COASTAL PANS

**Country:** Mauritania

**General:** The most important group of coastal pans occurs behind the beach between Nouakchott and Nouâmghâr (19°20'N/16°30'W) on the Plain of Inchiri where the SW-NE lines of dunes are less pronounced. There once were 4 separate major pans. From south to north these were the Sebkhet Te-n-Dghâmcha (18°19'-18°48'N/15°46'-16°07'W), the largest pan, some 6 km from the beach, two pans (18°56'-19°03' N/15°47' '-16°01'W) and (18°48' '-19°07' 'N/15°27' '-15°49'W), 15 and 25 km from the sea respectively, and the Sebkhet Te-n-Loubrar (19°01'-19°14'N/16°01'-16°16'W) right on the sea. Sebkhet Ten-Dghâmcha measured 55 km along a N-S axis parallel to the coast. It had a mean width of 15 km and an area of 37 500 ha. Altogether the 4 sebkhets covered more than 100 000 ha. However, there appears to have been some reduction in the size of the northern pans and the amalgamation of some of the southern pans in recent years.

**Hydrology & Water Quality:** All the pans are subject to shallow periodic and very temporary inundation, but small areas representing perhaps 1% of the total area, are subject to deeper and more prolonged inundation. When the pans are covered to depths of 5-10 cm these depressions form pools 1-2 m deep. These pans do not contain any fully permanent lakes. Water collects in the pans from direct precipitation, by seepage from the hinterland, and by direct run-off. All the pans are saline.

**Flora & Fauna:** The vegetation of these pans is halophytic and there are substantial barren areas. Genera such as *Arthrocnemum*, *Frankenia*, *Salicornia*, *Salsola*, *Suaeda* and *Tamarix* are in evidence. The fauna is as described for coastal wetlands in the regional introduction.

**Human Impact & Utilisation:** Unknown.

**Conservation Status:** Unprotected.

## 3. The Floodplain of the Senegal River

**Country:** Mauritania

**Coordinates:** 14°48' -17°11' N/12°14' 46°30' W

**Area:** c. 256 000 ha in Mauritania.

**Altitude:** 5-23 m asl

**Nearest Towns:** Kaedi (on floodplain); Sélibabi (70 km NE)

**General:** A floodplain is well developed along the right bank of the Senegal River in Mauritania all the way from Diogountourou (14°48'N/12°14'W) where the borders of Senegal, Mali and Mauritania meet, to the delta above St. Louis. The river forms the Senegal/Mauritania border continuously between Diogountourou and the sea. The floodplain is only 100 m wide at Diogountourou, but increases in width to 8 km opposite Semme (15°11'N/12°57'W). Thereafter it varies from 1-8 km wide all the way to the delta. Other floodplains occur on right bank tributaries such as the Niordé, Garta and the Gorgol and their affluents. The floodplain on this latter stream is the best developed and reaches 7.5 km in width over the lower reaches. It extends 75 km upstream, and thereafter for a further 60 km on each of two affluents, the Gorgol el Abiod

and Gorgol el Ahkdar. The main floodplain includes numerous oxbow lakes and lagoons at its lower levels. A detailed description of the floodplain is given in section 3.13.1.

**Flora & Fauna:** Lagoons and oxbow lakes are fringed by *Phragmites mauritianus* and *Typha domingensis*. *Phragmites mauritianus* also occurs along the banks of the affluents in their upper reaches. The floodplain supports typical floodplain grasses, with *Oryza barthii* at the levels of deepest inundation, and species such as *Echinochloa pyramidalis* at middle depths. *Andropogon gayanus*, *Oryza longistaminata*, *Panicum anabaptismum*, *Paspalum orbiculare*, *Vetiveria nigritana* and numerous other species occur on the margins. Strips of swamp forest occur along the river, dominated by *Cola laurifolia*, *Cynometra vogellii* and *Diospyros elliotii*. *Acacia nilotica* is however, the commonest riparian tree, but grows in sites subject only to seasonal inundation.

Few large native mammals now occur on the floodplain, having been ousted by domestic cattle. The fauna is as described for Soudanian river floodplains in the introduction to Region 3. Some crocodiles, both *Crocodylus cataphractus* and *C. niloticus* remain in the rivers, but both are scarce. Monitor lizards, *Varanus* sp., are more common and there are numerous snakes. Bird life is prolific and is dealt with in the introduction to Region 3. Small mammals are common in the river banks and reed beds and include species such as *Aonyx capensis*, *Atilax paludinosus*, *Dasymys* sp., *Lutra maculicollis* and *Thryonomys swinderianus*.

**Human Impact & Utilisation:** Numerous small centres of population along the margins of the floodplain depend for their existence directly on the floodplain, and plans to build dams across the river will doubtless have a fundamental effect upon the life of the floodplain. See section 3.13.1 for more detail.

**Conservation Status:** Unprotected.

#### 4. The Senegal River Delta

**Country:** Mauritania

**Coordinates:** 15°44'-16°29'N/15°35'-16°29'W

**Area:** 320 000 ha (c. 120 000 ha in Mauritania)

**Altitude:** 0-5m asl

**Nearest Towns:** Nouakchott (175 km N); Keur Massène (on N delta)

**General:** The delta comprises large areas of low lying, seasonally flooded land, some small areas of dry land, areas of semi-permanently wet sand, river channels, islands, and numerous lakes, some of which are 6 km long and 2-3 km wide. The main channel of the Senegal River constitutes the border with Mauritania through the delta. The river approaches the delta from the east and swings abruptly southwest at the head of the delta which is 74 km long and is sandwiched between a system of dunes, oriented SW-NE on the eastern, Senegal side, and a sandy barrier beach on the western, Mauritanian side. The delta has an unusual shape, being wider at the head (c. 40 km) than it is at the point where it reaches the sea (c. 24 km). This latter region, the Langue de Barbarie, south of Saint Louis, is an area of sandbars, tidal lagoons and saline mudflats. A string of small lakes lies in Mauritania between the main river channel and the western barrier beach, and among these, Lake Tianbrank and the Mares du Diaouling and Nter are dealt with individually in the next section (1.3.5. Natural Lakes).

**Hydrology:** The seasonal flood at the delta rises in August and persists through November.



Maximum flood depths are 1.5 m over the lowest lying areas.

**Flora & Fauna:** Floodplain grasses occur on the delta, and permanent reed swamps fringe some of the lakes and river channels. Some stunted trees occur on the dunes and levées, including *Acacia nilotica*, *A. seyal*, *Balanites aegyptiaca*, *Borassus aethiopum*, *Parkinsonia aculeata* and *Tamarix senegalensis*, but the area is saline due to the regular intrusion of sea water and has a harsh Sahelian climate with a severe dry season. Thus trees are not a prominent feature of the delta. For much of the year, only the vegetation fringing watercourses and waterbodies is noticeably green. At the river mouth, stable sandbars are colonised by littoral species such as *Alternanthera maritima*, *Ipomoea pescaprae*, *Sesuvium portulacastrum* and *Sporobolus virginicus*. Farther back in the delta *Sporobolus robustus* covers large areas subject to regular brackish inundation, and *Arthrocnemum glaucum* and *Salsola baryosma* occur on the fringes of the inundated zones.

Sandbars at the river mouth provide nesting sites for the marine turtles *Dermochelys coriacea* and *Chelonia mydas*, and both *Python sebae* and *Varanus niloticus* are common in the swamps. The many lakelets are important sites for the rich and prolific avifauna of the district, especially when the other delta wetlands dry up. The mangrove swamps support breeding colonies of *Ardea purpurea*, *Nycticorax nycticorax*, *Phalacrocorax carbo* and *Platalea alba*. Other species which breed in the delta include *Anhinga rufa*, *Ardeola ralloides*, *Bubulcus ibis*, *Casmerodius albus*, *Egretta garzetta*, *E. intermedia*, *Ibis ibis*, *Pelecanus onocrotalus*, *Phoenicopterus ruber* and *Threskiornis aethiopicus*. Other birds present include *Pandion haliaeetus*, which overwinters here, together with *Alopochen aegyptica*, *Anas acuta*, *A. angustirostris*, *A. clypeata*, *A. querquedula*, *Nettapus auritus*, *Plectropterus gambensis* and *Sarkidiornis melanota*. Manatees visit the delta, and almost the full spectrum of small aquatic mammals is present, as detailed in the introduction to Region 3, West Africa. *Felis caracal* and *Herpestes ichneumon* are known from the delta, and together with *Varanus niloticus*, prey upon young birds and their eggs. The last two species are present in large numbers. Dupuy (1971a,b,c; 1972) and Roux (1973a,b) give some account of the mammal and bird faunas of the delta.

**Human Impact & Utilisation:** Proposals to alter the flooding regime of the delta are recorded in section 3.13.1, The Senegal River Floodplain. Many dyke systems have been constructed in the delta to influence flooding patterns, and these have been detrimental to the wildlife of the delta. The various future programmes to control the hydrological regime (see sections 3.13.1 and 3.13.2) will all result in a reduction of flooding and a loss of wetland habitat in the delta.

**Conservation Status:** In Mauritania two areas encompassing Lakes Diaouling and Nter are projected Strict Nature Reserves, and a National Park has been proposed. In the Senegalese part of the delta important wetland sites are protected in the Djoudj and Langue du Barbarie National Parks and the Ndiel Bird Reserve.

## 5. Natural Lakes

### (a) LAKE RKIZ

**Country:** Mauritania

**Coordinates:** 16°45'-16°55'N/15°10'-15°27'W

**Area:** 12 970 ha (total wetland area)

**Altitude:** 1 m asl

**Nearest Towns:** Rkiz (on lakeshore); Rosso (50 km SW)

**General:** Lake Rkiz consists of a narrow semi-permanent lake fringed by marshland subject to inundation during the rainy season. The lake is 34 km long and up to 8 km wide at high water, while the permanent lake has a maximum width of 5 km. It lies in a depression oriented SW-NE, leading to the Senegal River. It is fed by several small streams and drains to the Senegal River via the Laouinga Stream.

**Flora & Fauna:** *Phragmites* and *Typha* fringe the lake and floodplain grasses including *Echinochloa pyramidalis* occur in the peripheral zone. A rich avifauna is present, as described for West African Coastal Wetlands in the introduction to Region 3. Snakes are abundant. *Crocodylus cataphractus* persists here, and there is an abundant small mammal fauna including such species as *Aonyx capensis*, *Atilax paludinosus*, *Dasymys incomtus*, *Lutra maculicollis* and *Thryonomys swinderianus*.

**Human Impact & Utilisation:** The lake is fished and reeds are cut for thatching. **Conservation Status:** Projected Nature Reserve.

#### (b) LAKE TIANBRANK

**Country:** Mauritania

**Coordinates:** 16°28'-16°29'N/16°22'-16°25'W

**Area:** 680 ha (open water)

**Altitude:** 1 m asl

**Nearest Towns:** Keur Massène (22 km NE); Rosso (59 km ENE)

**General:** Lake Tianbrank, on the Senegal River Delta, has an open water surface 5.9 km long and just over 1 km wide. It is a brackish lake with a water surface barely 1 m above mean sea level, which drains to the Mare du Diaouling through a channel 7 km long and 200-400 m in width. The lake is oriented E-W and is set against low banks of moist sand on its northern and western flanks, but with broad expanses of periodically inundated flatland immediately to the south and east. These latter extend to encompass the chain of Marigots de Bileyti to the southwest and the Mare du Diaouling to the southeast.

**Flora & Fauna:** The moist sandy banks support *Acacia nilotica*, *A. seyal*, *Balanites aegyptiaca* and *Borassus aethiopum*, while *Tamarix senegalensis* and *Arthrocnemum glaucum* bushes grow along the waters edge, along creeks, and on elevated sandy patches on the floodplain. The flats support *Echinochloa colonum*, *E. pyramidalis*, and other floodplain grasses, and in places, dense swards of *Sporobolus robustus*. The fauna is typical of the delta as described in the preceding section, 1.3.4.

**Human Impact & Utilisation:** The lake is fished and birds are hunted in the area.

**Conservation Status:** Unprotected.

#### (c) Mare du Diaouling

**Country:** Mauritania

**Coordinates:** 16°13'-16°28'N/16°18'-16°26'W

**Area:** 17 500 ha (total wetland area)

**Altitude:** 1 m asl

**Nearest Towns:** Keur Massène (18 km NE); Rosso (55 km ENE)

**General:** The so-called Mare du Diaouling lies in the northwestern part of the Senegal River Delta. It consists of an area of floodplain 31 km long and 13 km wide, with the small permanent mare, 6 km long and up to 2 km wide, in the north. Another small permanent lake and an open tidal creek lie to the south. The floodplain area is bounded on the east by the main channel of the Senegal River. The northern mare drains via an effluent stream which runs close to the western boundary of the floodplain to reach the Senegal River near its mouth, but the eastern part of the floodplain drains directly to the Senegal River.

**Flora & Fauna:** *Tamarix senegalensis* and *Arthrocnemum glaucum* occur on elevated patches of the floodplain, and *Acacia nilotica* is to be found beside the streams and lakeside in the north. However, much of the lower floodplain area is covered by the halophyte *Sporobolus robustus*, with fringes of *Salsola baryosma* on the margins and around raised 'islands'. A mangrove swamp in the south has *Rhizophora racemosa* along a tidal creek, with an expanse of *Avicennia africana* behind. The fauna is as described in the preceding section 1.3.4.

**Human Impact & Utilisation:** The lake is fished.

**Conservation Status:** Projected Strict Nature Reserve.

(d) Mare de Nter

**Country:** Mauritania

**Coordinates:** 16°21'-16°24'N/16°24'-16°27'W

**Area:** 1750 ha

**Altitude:** sea level

**Nearest Towns:** Keur Massène (25 km N); Ndiago (25 km S)

**General:** This is a small permanent lake at sea level in the Senegal River Delta. It is situated immediately to the west of the Mare du Diaouling. The waters are brackish and the surrounding area is subject to tidal inundation, especially during the rainy season when fresh waters back up behind the tide. The lake is long and narrow having the form of an inverted "V", with the main body of the lake, 2 km long and 2 km wide, situated on the eastern arm of the V. The lake drains from its western arm to the Senegal River near its mouth. The peripheral zone, subject to periodic inundation extends to the back of the barrier beach which is just 3 km distant from the nearest part of the lake.

**Flora & Fauna:** There is some mangrove vegetation, with *Avicennia africana* and *Rhizophora racemosa* on the tidal channel and on an arm of the lake, and *Tamarix senegalensis* and *Arthrocnemum glaucum* around the head of the lake. *Paspalum distichum* occurs in openings in the mangrove and along the tidal channels, while other halophytes such as *Salsola baryosma*, *Sesuvium portulacastrum* and *Sporobolus virginicus* occur on the margins of the tidally flooded zones. The fauna is typical of the delta and is as described in the preceding section 1.3.4.

**Human Impact & Utilisation:** The lake is fished.

**Conservation Status:** Projected Strict Nature Reserve.

(e) Lake D'aleg

**Country:** Mauritania

**Coordinates:** 17°02'-17°09'N/13°54'-14°04'W

**Area:** 4275 ha (including seasonal inundation zone)

**Altitude:** 30 m asl

**Nearest Town:** Aleg (on floodplain)

**General:** The small endorheic semi-permanent saline lake, 4 km long and just over 1 km wide, is situated some 10 km from the town of Aleg in the valley of the Oued Katchi. The lake is surrounded by a broad floodplain, 4-5 km wide and 21 km long which extends to Aleg.

**Flora & Fauna:** The lake is fringed by halophytic vegetation including species of *Arthrocnemum* and *Tamarix*. Some *Acacia nilotica* trees occur along the Oued Katchi, also *Adansonia digitata*, *Balanites aegyptiaca*, *Hyphaene thebaica* and *Tamarix senegalensis*. Baobabs also occur around the margins of the floodplain. Some halophytic grasses, including a species of *Sporobolus*, are found in the seasonally inundated zone.

**Human Impact & Utilisation:** Little information is available except that the lake has been fished intensively.

**Conservation Status:** Projected Nature Reserve.

(f) Lake Du Mal

**Country:** Mauritania

**Coordinates:** 16°55'-16°59'N/13°17'-13°26'W

**Area:** 870 ha (including peripheral inundation zone)

**Altitude:** 68 m asl

**Nearest Towns:** Kaedi (83 km S); MM (on lakeshore)

**General:** This small lake is situated near the source of the Guellouar River which flows through it. The lake lies immediately to the west of, and parallel with, a low SW-NE scarp line which rises 28 m over the lake to an altitude of 96 m asl. The lake has two basins, separated by about 2 km, and the Kaedi to Magta Lahjar road passes between them. The upper basin is 5.5 km long and up to 2 km wide, but contains no permanent water, being subject only to seasonal inundation. The lower basin is 11 km long and 2 km wide and contains a permanent lake, 5 km long at its lower end. The upper part of this basin is also subject to seasonal inundation.

**Flora & Fauna:** Gallery forest occurs on the Guellouar River, dominated by *Acacia nilotica*, and trees of this species are common around the margins of the seasonally flooded zone. Reeds fringe the lake proper while the zones of seasonal inundation are covered by typical floodplain grasses as described in the regional introduction. We have no information concerning the fauna.

**Human Impact & Utilisation:** The 'lakes' are fished on a small scale.

**Conservation Status:** Projected Nature Reserve.

(g) Mares de Kankossa

**Country:** Mauritania

**Coordinates:** 15°50'-16°00'N/11°30'-11°36'W

**Area:** 1540 ha

**Altitude:** 70 m asl

**Nearest Towns:** Kankossa (on lake); Kiffa (75 km N)

**General:** The Karakoro River, which rises from several intermittent tributaries in the vicinity of Kiffa, flows almost due south to the Senegal River in a flat floored valley edged by two escarpments. About 20-25 km to the west is a tall embayed scarp line which rises to heights of over 400 m and to 882 m in the vicinity of Kiffa. The eastern escarpment is 60 - 75 km distant from the river and rises to a maximum altitude of 373 m asl. The river is only a few metres wide, but as it flows past the town of Kankossa it widens over a 10 km stretch to some 250 m,

forming the so-called Mare de Kankossa. The river narrows below the town, only to swell again, almost immediately, into the Mare de Kaora. This is 7 km long and wider than the previous mare, reaching widths of 500 m. Over this latter stretch the river receives three intermittent tributaries, the Oued Niarhle, the Oued Oueringuel and the Haraj Kamdi, and these contribute to the local seasonal flooding. A shallow floodplain, 11 km long and up to 3 km wide, surrounds the Mare de Kaora.

**Flora & Fauna:** Thin and disturbed galleries of woodland occur along the watercourses and grasses occur on the floodplains, as discussed in the regional introduction. The banks of the river support reed beds dominated by *Phragmites mauritanus* and *Typha doringensis*. We have no information concerning the fauna.

**Human Impact & Utilisation:** The river is fished and the gallery woodlands have been cut for fuel.

**Conservation Status:** Projected Nature Reserve.

#### (h) Mare de Mamoude

**Country:** Mauritania

**Coordinates:** 16°18'-16°31' N/7°31' -7°44'W

**Area:** 40 000 ha (2000 ha open water + 38 000 ha floodplain)

**Altitude:** 185 m asl

**Nearest Towns:** Nema (38 km NE); Ayofin el Atrofis (212 km W)

**General:** The Mare de Mamoude is a seasonal lake, 6 km long and 4 km wide, situated at the end of an intermittent watercourse. The stream which feeds it may not flow every year, but once full, the lake persists as an open water surface for many months and during pluvial cycles the lake is perennial. High floods inundate over 40 000 ha of the sandy plain surrounding the lake, to depths of 50 cm or more, after which the sand tends to remain humid throughout the dry season. A number of smaller areas of humid sand occur in the district and they too are occasionally flooded.

**Flora & Fauna:** *Phragmites* and *Typha* occur around the mare, while floodplain vegetation occurs on the seasonally inundated areas, being best developed along the affluent water course. Here, *Acacia nilotica* and bushes of *Tamarix senegalensis* may be found. *Adansonia digitata*, *Balanites aegyptiaca*, *Borassus aethiopum* and *Hyphaene thebaica* occur around the periphery of the floodplain, and locally grow upon it.

**Human Impact & Utilisation:** No information.

**Conservation Status:** Projected Nature Reserve.

#### (i) Lake le Bheyr

**Country:** Mauritania

**Coordinates:** 16°33'N/12°05'W

**Area:** 1200 ha (high water)

**Altitude:** 77 m (high water)

**Nearest Towns:** Kiffa (70 km E); Selibabi (158 km S)

**General:** This perennial lake is situated in a sheltered depression at the foot of the western escarpment of a mountainous promontory which reaches south from the Tagant Plateau. It receives surface run-off from the highlands, but is believed to be springfed as well. At times of



high water, following heavy rains, when the lake reaches 6 km in length, there is overflow to an intermittent affluent of the Gorgol el Akhdar. By contrast, during dry seasons it contracts into 2 or 3 smaller lakes, thus having a season floodplain. The lake water is fresh, but turbid and eutrophic.

**Flora & Fauna:** The lake margins are virtually devoid of emergent macrophytes being heavily trampled by cattle, but the periphery supports floodplain vegetation dominated by *Piliostigma reticulata*. Ponds occur upstream in the gorges of some affluent streams and these support *Phragmites* and *Typha*. Dumont (1976) gives some account of the invertebrate fauna which includes mosquitoes and *Bulinus* sp., thus both malaria and bilharzia are indigenous in the district. Among fishes, *Clarias anguillaris*, *Oreochromis galilaeus* and *O. niloticus* are common. Species of *Bufo* and *Ptychadena* occur here, and while *Crocodylus niloticus* is believed to be extinct in the lake, it still survives, together with *Varanus niloticus*, on several watercourses in the area.

**Human Impact & Utilisation:** There are several permanent settlements close to the lake which is a centre for cattle grazing, and supports a fishery.

**Conservation Status:** Unprotected.

## 6. Interior Pans – Sebkhets

**General:** If rainfall in northern Mauritania is heavy enough to produce run-off, the water collects into watercourses which terminate in flat bottomed basins, which may then be flooded to depths of 10-50 cm for a period. Water is lost from these pans (sebkhets-sebkhas) by seepage and evaporation and their soils are inevitably saline. Some sebkhets contain temporary lakes and ponds. These arise in depressions where flood waters accumulate to depths of several metres. In general, sebkhets carry very little vegetation and tend to remain dry for long periods; those in the far north may not hold standing water for years on end. However, temporary ponds may carry a fringe of reeds, including *Phragmites* and *Typha* spp. Among halophytic plants sometimes found on pan floors are species of *Arthrocnemum*, *Salicornia*, *Suaeda* and *Tamarix*.

The most northerly area subject to occasional shallow inundation (26°40'N/8°00'W) is 6 km long and up to 3 km wide along the Oued el Haure. Farther south some small temporary lakes form in the Sebkhah Ouderat el Kiam (25°37'N/11°55'W) which is fed by several shallow wadis, and a large temporary lake, up to 18 km long, forms to the east at a point 25°53'N/8°55'W. Another large temporary lake, up to 18 km across, and four smaller lakes, develop at Gleibatte-n-Ebdar (25°00'N/10°10'W), here providing a potential water surface of 11 400 ha. The three largest northern pans are the Sebkhah Iguetti (24°59'-25°10'N/ 9°34'-9°48'W), fed principally by the Oued Kherir, the Sebkhah Oumm ed Drouf Telli (24°25'-24°28'N/11°08'-11°44'W) and the Sebkhah Oumm ed Drouf Guebli (23°55'-24°15'N/11°36'-11°52'W). The first contains some temporary ponds, but neither of the others support open water surfaces for any length of time. However, 2 temporary ponds occur in the smaller Sebkhah Iguel or Lakakine (25°00'N/9°48'W), and a small group of temporary ponds develops in the Sebkhah Bouir el Ahmar (24°44'N/8°40'W). A small temporary lake develops in the Sebkhah Oued el Ma, which receives the discharge of the Oued el Ma, one of the large interior watercourses. Another temporary lake forms in the Sebkhah Rhall Amane (23°35'-23°43'N/ 9°47'-9°54'W). Close to the border with Western Sahara, the Sebkhah ej Jill

(22°40'22°57'N/12°47'-12°53'W) is an almost barren salina.

## 7. Oases: Oueds, Gueltas & Springs

**General:** In some dry watercourses, strips of sandy soil along the thalweg may remain moist for considerable periods after rain and there may be supplies of subterranean water. Such places support perennial vegetation. The river or stream which flows in such a watercourse is known as an oued, but the watercourse *per se* may also be referred to as an oued. Gueltas are semi-permanent pools in the higher reaches of some sheltered gorge-like watercourses on the edges of the escarpments. Springs occur at faults on the walls and floors of canyons, or sometimes at the feet of dunes which have intruded into gorges. Any site of permanent water in the desert can be described as an oasis and there are a number on the edges of the Adrar Plateau near Atar, and others on the edge of the Tagant Plateau.

### (a) The Oum Lem Gorge

**Country:** Mauritania

**Coordinates:** 20°35 'N/13°07 'W

**Area:** a few ha open water – variable

**Altitude:** 245-450 m asl

**Nearest Towns:** Atar (10 km E); Akjoujt (160 km WSW)

**General:** The floor of the gorge descends from 450 m to 245 m over a distance of 6 km and contains many pools. The lower pools are small and tend to dry up between floods which may occur 2-3 times a year, while the upper pools are permanent although they may become stagnant between floods. They have maximum depths of 4-5 m between floods and mostly receive a constant small input of water from seepage. The pools show a decreasing gradient of salinity in passing up the gorge, the lower pools being highly saline before drying, while the upper ones are merely brackish.

**Flora & Fauna:** Species of *Equisetum*, *Juncus*, *Phragmites* and *Scirpus* grow around the upper gueltas, and 4 species of *Potamogeton* grow in them. *Adiantum capillusveneris* grows on the wet rocky walls and there is a report of relict *Ficus sycomorus*. Four species of fish, all of tropical affinity, have been recorded in the gueltas and 4 species of amphibians. The fish are *Barbus deserti*, *B. pobeguini*, *Clarias anguillaris* and *Oreo-chronzis galilaeus*, and the 4 amphibians are *Bufo maurianicus*, *B. regularis*, *Ptychadena occipitalis* and *Tomopterna cryptotis*. *Varanus griseus* is abundant and there are several species of snakes in the gorge.

**Human Impact & Utilisation:** *Phoenix dactylifera* has been planted around the upper pools, and wood gathering over the years has probably led to the disappearance of several tree species. Cattle and goats are occasionally brought into the gorge.

**Conservation Status:** Unprotected.

### (b) The Springs of Terjit

**Country:** Mauritania

**Coordinates:** 20°15'N/13°06'W

**Area:** c. 30 ha wetland

**Altitude:** c. 450 m asl

**Nearest Towns:** Atar (25 km NNE); Akjoujt (140 km WSW)

**General:** The main springs are situated at the foot of a fault across a gorge draining into the Oued el Abiod, but several minor seepages occur elsewhere in the gorge. A chain of pools, connected by a trickle of running water, stretches for about 1 km below the main springs. At least one of the springs is warm (32°C) and the waters are rich in calcium sulphate.

**Flora & Fauna:** Similar to that at the Oum Lem Har Gorge, but *Ficus syconzorus* is more abundant. *Barbus deserti*, *Bufo regularis* and *Ptychadena occipitalis* are present, together with a mollusc, *Bulinus guerne*, which transmits bilharzia.

**Human Impact & Utilisation:** There is a permanent settlement and an extensive *Phoenix dactylifera* plantation. Small scale gardening is carried out using traditional irrigation methods.

**Conservation Status:** Unprotected.

(c) The El Berbera Oasis

**Country:** Mauritania

**Coordinates:** 19°59'N/12°49'W

**Area:** c. 30 ha (total moist area)

**Altitude:** c. 380 m asl

**Nearest Towns:** Atar (68 km NNW); Akjoujt (162 km WSW)

**General:** A guelta some 30 m across and 6 m deep, is situated near the head of a narrow gorge, oriented SE-NW, which opens into the Oued Timinit. Springs in the wall of the gorge feed the pond, and the gorge widens gradually towards the oued for 3 km. Running surface water is found in the gorge below the guelta, but it is not continuous all the way down the gorge. The water is brackish and rich in sodium.

**Flora & Fauna:** *Phoenix dactylifera* has been planted along the gorge where once *Acacia* sp., *Ficus sycomorus* and *Hyphaene thebaica* prevailed, but the pond at the top is still fringed by *Phragmites mauritianus* and *Typha domingensis*, with some *Juncus* sp., and a sedge. *Barbus deserti* occurs in the stream below the pond. We have no information regarding the rest of the fauna, although the gorge is infested with mosquitoes, and *Varanus griseus* is common in most gorges of the Adrar Escarpment.

**Human Impact & Utilisation:** There is a permanent settlement on the rim of the gorge, and the floor is utilised for gardening and date production.

**Conservation Status:** Unprotected.

(d) The Tartega Gueltas

**Country:** Mauritania

**Coordinates:** 17°50'N/12°07'W

**Area:** 140 ha (maximum wetland + open water area)

**Altitude:** c. 350 m asl

**Nearest Towns:** Tidjikdja (117 km NE); Moudjeria (20 km NW)

**General:** This oasis is situated in the escarpment of the Tagant Plateau, in its southwestern extension towards Kiffa. A promontory over 500 m asl reaches south from the main plateau, falling 400 m by steep scarps to the lowlands on the western and eastern sides. In addition, the plateau dips gently inwards towards its centre from the rims, forming a broad wadi which opens to the lowlands in the northwest. However, at places, there are scarps falling to the interior wadi, and many of these are deeply gullied. The TartegaMatmata Gorge is situated on the western side of the broad interior wadi

wall. It is 7 km long and slopes from W-E to the wadi, with a floor 200 m wide and very steep walls. Water flows down the gorge from springs at the head and its floor is covered by ponds, springs, marshes and little streams. At the bottom these discharge into a permanent lake which is also fed by springs. Following rain this lake may have an open water surface of up to 30 ha. Its waters are always brown and turbid. The waters of the small ponds in the gorge are relatively fresh, as are those of the little stream, but the lake at the bottom of the canyon is quite saline with high sodium and chloride concentrations.

**Flora & Fauna:** The marshes of the gorge are covered by species of *Juncus*, *Phragmites* and *Scirpus*, and the ponds have peripheral reed beds. There are *Tamarix* bushes and relict *Ficus sycomorus*, but no palms in the gorge, and the main lake has no submerged macrophytes. *Clarias anguillaris* is common in the gorge, and *Crocodylus niloticus* still survived in the gorge and main lake in 1976.

**Human Impact & Utilisation:** There is little human interference. No horticulture occurs in the gorge, but sheep and goats are grazed there occasionally and crocodiles are hunted.

**Conservation Status:** Unprotected.

(e) The Gamra Ouarbi Gueltas & Oued of El Housseiniya

**General:** This system, which discharges to the Oued Bourraga is also associated with the southern promontory of the Tagant, discussed above, but is situated below the western outer scarp. According to Dumont (in press) Gamra Ouarbi is composed of a string of gueltas situated in the hollows of a cascading riverbed (17°44'N/12°23'W). El Housseiniya (17°38'N/12°23'W) is a powerful spring that flows into a riverbed several kilometres long, producing stagnant pools which persist through the dry season. Strong floods occur during the rainy season which flush the beds of both systems into the Oued Bourraga. The guelta waters are fresh.

**Flora & Fauna:** The Gamra Ouarbi gueltas are devoid of macrophytes, but contain algae, principally *Volvox rouseleti*. The ground about El Housseiniya supports a luxuriant growth of Juncaceae, with *Nymphaea* and *Potamogeton* spp. in standing water, while the whole valley floor has been planted with *Phoenix dactylifera*. Dumont (1979) describes the invertebrate fauna which includes species of *Bulinus*, the vectors of bilharzia. *Clarias anguillaris* is abundant in the system, especially at El Housseiniya. *Hemichronis binzaculatus* has also been recorded there. Species of *Bufo* and *Ptychadena* occur here, and *Varanus niloticus* is recorded from Gamra Ouarbi.

**Human Impact & Utilisation:** The system is used for date production and for limited horticulture. The system is fished for *Clarias* and the lush vegetation of the Oued Bourraga is grazed by sheep, goats, cattle and camels. Domestic cattle use the lower gueltas for water.

**Conservation Status:** Unprotected.

## 8. Artificial Impoundments

**Wetland Name:** The Reservoir of Foum Gleita

**Country:** Mauritania

**Coordinates:** 15°56'-16°18'N/12°24'-12°40'W

**Area:** 37 500 ha

**Altitude:** 40 m asl

**Nearest Towns:** Mbout (on lake); Kaedi (108 km W)

**General:** This reservoir is on the Gorgol el Ahkdar (Gorgol Noire) River, near Mbout. The river, flowing due west at this point, traverses the low N-S ridge of the Oua Oua Hills, and a barrage has been constructed on the eastern side to create a lake spreading 42 km N-S along the face of the hills and 36 km upstream.

**Flora & Fauna:** Reeds have become established on the lake margins near to the dam where water level fluctuations are not great.

**Human Impact & Utilisation:** A fishery has been established and water is used for irrigation.

**Conservation Status:** Projected Nature Reserve.