

1. Source: Service de la Protection des Ressources Naturelles; Direction Générale des Forêts et de la Chasse; Ministère de Développement rural et de l'Agriculture; B.P.71; Bissau; Guinée-Bissau

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2. Date: 1 March 1990

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3. Name of site: Lagoa de Cufada (Lake Cufada)

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4. Country: Guinea Bissau

5. Reference number: 1Gw001

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6. Date of Ramsar designation: 4 May 1990

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7. Geographical coordinates: Lagoa de Cufada: 11°43'N, 15°02'W; limits of Ramsar site: Fulacunda 11°46'N, 15°09'W; Uana Porto 11°51'N, 15°04'W; Canture 11°47'N, 14°49'W; Buba Tombo 11°39'N, 15°01'W.

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8. Location: On the south bank of the Rio Corubal 65 km ESE of Bissau, in Fulacunda and Buba Sectors, Quinara Region. The site is bounded to the north by the Rio Corubal, to the west by the road from Uana Porto to Fulacunda, to the south by the road from Fulacunda to Buba Tombo, and to the east by the road from Buba Tombo to Canture and the Rio Corubal.

National mapping system: Guine Portuguesa 1:50,000 series  
Norte C28 - XXI 4b (Empada), XXI 4d (Fulacunda),  
XXII 3a (Xitole), XXII 3c (Xime).

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9. Area: 39,098 hectares

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10. Altitude: Lagoa de Cufada and the floodplain wetlands are about 4 metres above sea level; the maximum elevation in the Ramsar site is about 30 metres above sea level.

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11. Overview: The site includes Lagoa de Cufada, a shallow, permanent freshwater lake with abundant aquatic vegetation and extensive fringing marshes, two smaller freshwater lakes, Lagoa Bionra (permanent) and Lagoa Bedasse (seasonal), a large area of seasonally flooded marshes and grassland extending from these lakes to the Rio Corubal, about 14km of the south bank of the Rio Corubal with its narrow fringe of mangrove and extensive intertidal mudflats, and adjacent areas of savannah, dry forest and patches of sub-humid forest. Lagoa de Cufada is one of the few significant freshwater lakes in this region of West Africa; it remains in relatively pristine condition, and is situated in a forested area noted for its

diverse fauna and flora. The lake supports a small fishery, and is an important breeding area and dry season refuge for a wide variety of waterfowl, mainly Afrotropical species. The mangroves and mudflats along the shore of the Rio Corubal support the typical estuarine fauna of this region and are of some importance for migrant herons, shorebirds and terns.

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12. Physical features: Lagoa de Cufada (413.5ha) is a natural, eutrophic, freshwater lake situated in a shallow depression on the floodplain of the Rio Corubal. During the dry season, most of the lake is less than 1.5m deep. The lake receives its water from local run-off during the rainy season, and drains north through a short channel (the Rio de Ancamba) into the Rio Corubal. Almost the whole of the catchment area lies within the Ramsar Site. Lagoa Bionra (32.5ha) and Lagoa Bedasse (18.7ha) lie in two smaller depressions to the west. The former remains wet throughout the year, but the latter dries out during the dry season. Both lakes drain northeast via the Rio Bionra into the Rio Corubal. There are large areas of seasonally flooded marshes and grasslands extending from all three lakes along their respective outflow streams to the Rio Corubal. A portion of the floodplain along the south side of the Rio Corubal has been converted to rice paddies and is cultivated during the rainy season. The Rio Corubal is fringed by a narrow belt of mangrove forest (about 10-30 metres wide), which extends for a few hundred metres along the lower courses of the Rio de Bionra and Rio de Ancamba. The Rio Corubal is 2.0-2.5km wide at this point and subject to wide tidal and seasonal fluctuations in water level (the mean tidal range near Bissau is between 3 and 4 metres). Extensive mudflats are exposed at low tide, and these are currently accreting and being invaded by mangroves. The wetlands are situated in a region of laterite soils. No information is available on the physico-chemical characteristics of the lakes or river.

The total area of wetland habitat within the Ramsar Site at the height of the wet season is approximately 9,950ha.

The climate is tropical and characterized by a long dry season (NE trade winds) from November to April or May and a pronounced wet season (southwest monsoon) from May to October. The average annual rainfall is reported to be over 2,000mm. The mean annual temperature is about 26C; the mean in the coolest months (December and January) being about 22C, and that in the hottest (April and May) about 28C.

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13. Ecological features: No detailed botanical surveys have been carried out. Lagoa de Cufada supports an abundant growth of submerged and floating aquatic vegetation, notably Nymphaea sp. which covers much of the surface of the shallower portions of the lake. The mangrove vegetation along the shore of the Rio Corubal is dominated by Avicennia africana. Other wetland habitats include permanent freshwater marshes, principally around Lagoa de Cufada and Lagoa Bionra and along the Rio de Ancamba and Rio Bionra, seasonally flooded marshes and grassland, seasonally flooded gallery forest along the watercourses, rice paddies and intertidal mudflats. The original dominant vegetation in surrounding areas was broad-leaved

moist forest and "semi-dry" broad-leaved forest with a shrub layer of lianas and clumped bushes. As a result of repeated fires, most of the primary forest has now been replaced with a secondary vegetation type of woodland and tree savanna. Much of this secondary forest has been severely degraded by slash-and-burn agriculture, and some areas have been commercially logged or cleared for the cultivation of cashew nuts, dry rice and other crops. Some small pockets of relatively pristine moist forest still survive in remote stream valleys.

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14. Land tenure: The whole area is state owned, although local tribes have traditional rights of land use.

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15. Conservation measures taken: As early as 1948, the Lagoa de Cufada area was proposed as a faunal reserve (Pereira, 1948). In 1980, the lake and surrounding area (totalling some 42,500ha) were declared an "aire protégée" under Article 9 of the Hunting regulations (Decree No.21 of 1980). The limits of this reserve are the Rio Corubal in the north, the Buba to Xitole road in the south, and the road from Buba to Fulacunda and Uana Porto in the west (Miranda, 1989). All hunting is "permanently" prohibited in this "aire protégée". However, it seems that the reserve was never formally established, and the present understanding of the local villagers and DGFC Forest Guards is that only Lagoa de Cufada and its shoreline are a non-hunting area.

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16. Conservation measures proposed: At the invitation of DGFC, B. Limoges and M-J Robillard of the Centre Canadien d'Etudes et de Coopération Internationale and Alliance Mondiale pour la Nature carried out a survey of the Cufada area in 1989 and have made various recommendations concerning management (Limoges & Robillard, 1989). They recommend the establishment of a National Park extending from the Rio Corubal in the north to the Rio Grande de Buba in the south, and fringed by two "zones de chasse". The National Park would include a "réserve intégrale" extending from Lagoa de Cufada in the west to the Sacred Forest near Incassol in the east. However, Lagoa Bionra, Lagoa Bedasse and their associated marshes would lie outside the National Park, in the western "zone de chasse". The report of Limoges and Robillard is currently being considered by DGFC. Scott and Pineau (1990) support this proposal for the establishment of a National Park, but advocate that the boundary be extended westwards to include the whole of the Ramsar Site.

Limoges & Robillard (1989) list a variety of management objectives for the area, including management of Lagoa de Cufada to permit rational exploitation of the fishery resources. This might include the establishment of no-fishing zones within the lake. They suggest that the park headquarters be sited at Cantanha (near the south shore of the lake), and that observation facilities for visitors be constructed at the lake.

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17. Land use: The principal tribes in the area are the Balantes, the Beafadas and the Mandingues. There are about twelve small villages inside the Ramsar Site with a population of several hundred. The main activity at Lagoa de Cufada is fishing (with some 12 boats active at one time in February 1990). Traditional netting techniques are employed. The most important fishes in the catches are Polypterus ansongei, Notopteros afer, Sarcodaces odal, Hemichromis fasciatus, Tilapia melanopleaura, T. bnettiofer, Ictalurus punctatus, Silurus glanis and S. soldatovi. All are native species. The quality and quantity of the catches have decreased in recent years, and the local fishermen have formed their own syndicate to prevent outsiders from fishing in the lake.

Other activities in the wetlands include the cultivation of wet rice, mainly near the Rio Corubal in the north, and harvesting of grasses for thatching. There is little livestock raising in the region. Goats and pigs are ubiquitous around the villages, but only a very few small herds of cattle graze on the floodplain grasslands. Elsewhere in the site, the principal activity is slash-and-burn cultivation of dry rice, which produces a single crop during the rainy season once every few years. Manioc, millet, mangos and oranges are cultivated on a much smaller scale, and there is some traditional exploitation of oil palms, principally for their fruits. Some small patches of forest have been cleared for plantations of cashew and banana.

Parts of the area have been commercially logged. However, the logging concessions given to Folbi along the Fulacunda to Uana Porto road and in the Injassane area expired in January 1990, and will not be renewed.

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18. Possible changes in land use and proposed development projects:

No major developments are proposed for Lagoa de Cufada or the surrounding area. The PADIQ (Projet de Développement Intégré de la Région du Quinara), responsible for agricultural development in the region, supports the creation of the reserve around Lagoa de Cufada with the same boundaries as those of the 1980 "aire protégée".

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19. Disturbances and threats: The fish catches at Lagoa de Cufada have decreased in recent years and overfishing is thought to be a problem. This problem is likely to increase with with an improvement in fishing techniques. Large areas of grassland and forest are burned during the dry season, supposedly to improve the area for hunting. This probably had no serious effects on the grasslands, but has been very detrimental to the original forest, and now hinders regeneration. Large areas of forest have also been degraded by slash-and-burn cultivation and logging operations. There is little hunting of waterfowl, but the hunting pressure on the larger mammals is very high, and most species have now become scarce in the more densely populated areas around Lagoa de Cufada and near the Rio Corubal.

The principal long-term threat to the area is the rapid rate of population growth and consequent increase in demands on all natural resources. In 1979, the population density in this region was only 9.6 persons per square kilometre - one of the lowest densities in the country. However, by 1989 the population density had increased by 137% - one of the fastest growth rates recorded in Guinea Bissau (Limoges & Robillard, 1989).

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20. Hydrological and biophysical values: No information is available on the hydrological values of the wetlands, although it seems likely that Lagoa de Cufada plays a significant role in the recharge and discharge of groundwater.

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21. Social and cultural values: No special values are known.

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22. Noteworthy fauna: There are still a few Nile Crocodiles Crocodylus niloticus in lagoa de Cufada, but these are very shy and seldom seen. This is the only threatened animal species known to occur at the wetland. Other reptiles reported in the area include Tryonix triunguis and Python sebae (Limoges & Robillard, 1989).

Aquatic mammals include Hippopotamus amphibius and Aonyx capensis. Hippopotamus are present all year round in the Rio Corubal and possibly also at Lagoa Bionra, but occur in Lagoa de Cufada only during the wet season. Although the species is legally protected, some are still shot and very few have been seen at Lagoa de Cufada in recent years.

The importance of Lagoa de Cufada for its rich avifauna was first recognized by de Naurois (1969), who noted large numbers of Dendrocygna viduata, Plectropterus gambensis (hundreds), Nettapus auritus (thousands) and breeding Egretta alba, Nycticorax nycticorax, Butorides striatus and Actophilornis africana. However, during brief surveys in November 1982 and January 1983, Altenburg and van der Kamp (1986) recorded only small numbers of 11 species of waterfowl.

In late February 1990, Scott and Pineau (1990) recorded almost 1,850 waterfowl of 53 species in the area. These included 15 Pelecanus rufescens, 12 Phalacrocorax africanus, 22 Anhinga rufa, over 300 herons and egrets of 12 species, a breeding pair of Ephippiorhynchus senegalensis, a pair of Ciconia episcopus, 100 Dendrocygna viduata, 460 Plectropterus gambensis, 80 Sarkidiornis melanota, 250 Nettapus auritus, 62 Balearica pavonina (including several pairs with fledged young), 200 Actophilornis africana and about 300 migrant shorebirds and terns of over 20 species. Most of the Anatidae were concentrated on Lagoa de Cufada, and most of the migrant shorebirds and terns along the Rio Corubal. Other wetland species included Circus aeruginosus, Haliaeetus vocifer (at least two pairs), Pandion haliaetus, Ceryle rudis, Alcedo cristata, Riparia riparia, Motacilla flava and several species of Acrocephalus and Cisticola warblers.

The surrounding forests support a rich mammalian and avian fauna characteristic of the region. Thirty-two species of mammals have been recorded, including Hystrix sp., Papio papio, Viverra civetta, Genetta sp., Herpestes sanguineus, Mungos gambianus, Panthera pardus

and Kobus kob. However, the larger mammals are now scarce in the more densely populated areas around Lagoa de Cufada and in the north. The very rich avifauna includes several species with restricted ranges in West Africa, such as Caprimulgus nigroscapularis, Dendropicus maculosa and Laniarius turatii.

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23. Noteworthy flora: no information.

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24. Scientific research and facilities: Preliminary faunal surveys have been carried out by Pereira (1948), de Naurois (1969), Altenburg & van der Kamp (1986), Limoges and Robillard (1989) and Scott and Pineau (1990), but no significant research has yet been undertaken in the area, and there are no special facilities.

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25. Conservation education: As one of the few significant eutrophic freshwater lakes in the region, Lagoa de Cufada has considerable potential for conservation education. However, this could only be realized upon establishment of a National Park or other reserve with suitable facilities and improved access.

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26. Recreation and tourism: At present, the lake and its surroundings are difficult of access and seldom visited by outsiders. However, the area has sufficient scenic, faunal and floral values to merit the establishment of a National Park and, with suitable facilities and improved access, could provide numerous opportunities for outdoor recreation and tourism. The lake would be the focal point of the park, with the park headquarters and interpretation centre located at the nearby village of Cantanha.

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27. Management authority: Direction Générale des Forêts et de la Chasse (DGFC).

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28. Jurisdiction: Direction Générale des Forêts et de la Chasse (DGFC).

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29. References:

Altenburg, W. & van der Kamp, J. 1986. Oiseaux d'eau dans les zones humides de la Mauritanie du Sud, du Sénégal et de la Guinée-Bissau; octobre-décembre 1983. RIN Contributions to Research on Management of Natural Resources 1986-1.

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Pereira, J.A. 1948. Fauna da reserva de Cufada. Boletim cultural da Guiné Portuguesa Vol.III No.11: 739-757.

Scott, D.A. & Pineau, O. 1990. Promotion of Ramsar Convention and Survey of Lagoa de Cufada, Guinea Bissau. IUCN Mission Report. IUCN,

30. Reasons for inclusion: Lagoa de Cufada and associated wetlands qualify for inclusion in the List of Wetlands of International Importance on the basis of the following criteria approved at the Third Conference of the Contracting Parties:

1 (a): the wetland is a particularly good example of a type of wetland rare or unusual in which it lies.

Lagoa de Cufada is one of the very few significant natural freshwater lakes in this part of West Africa.

2 (b): the wetland is of special value in maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna.

The wetlands support a very rich fauna and flora, including many species characteristic of eutrophic freshwater lakes and marshes and thus of very local distribution in this part of West Africa.

3 (b): the wetland regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity.

The wetland provides a dry season refuge for substantial numbers of Afrotropical waterfowl, notably species of Anatidae; it provides breeding sites for a variety of species of waterfowl, notably Ardeidae, Ciconiidae and Gruidae, and also provides wintering habitat for significant numbers of migrant herons, egrets, shorebirds and terns.

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