

Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

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Designation date

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Site Reference Number

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2. Date this sheet was completed/updated:

November 2006

3. Country:

Nigeria

4. Name of the Ramsar site:

Foge Islands

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

7. Map of site:

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;
ii) an electronic format (e.g. a JPEG or ArcView image) ;
iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

The boundary of the site is based on the border of the islands in the north-east part and on the sand banks as seen on the landsat image in the south west part, with an additional buffer of 300m.

It is necessary to note that the size of the island varies during the year. This is determined by the water level of the surrounding water body, the Kainji Lake, which changes depending on the extent of draw down through power generation, drought and evaporation; and the filling of the lake through the seasonal floods and direct precipitation.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

(10°30'N 4°33'E) (Latitude 10,51 and Longitude 4,56 in decimal degrees)

9. General location:

The island is located within the valley of the pre-Kainji dam R. Niger. The middle section of the old island is now permanently submerged, such that there is a larger portion located approximately 45 km upstream of the dam, and two much smaller islands located at the northern end of the main body of the Lake Kainji. Kainji Lake is located in the western extremity of central Nigeria. During low water, the western section of the main island lies within Niger State (2006 population: 3,950,249), while the eastern section lies within Kebbi State (2006 population: 3,238,628). The portions that are always exposed lie in Kebbi State. The island is across the waters from the Borgu Sector (western sector) of the Kainji Lake National Park, which abuts the Lake Kainji. Lake Kainji and the island are part of the National Park.

10. Elevation: (in metres: **average** and/or maximum & minimum)

150 m.a.s.l

11. Area: (in hectares)

4228.74 hectares

12. General overview of the site:

The island trends N-S, is low-lying, with numerous swampy depressions (probably marking river channel locations in times past), and with large portions annually inundated by the Lake Kainji. There is a rhythmic fluctuation in lake level during the year, which determines the extent of inundation of the island. The permanently exposed sections are dotted with numerous termite mounds. The island has a large population of resident and migratory species of birds, and a number of indigenous fish species. The local communities fish the pools and the lake, and also engage in traditional irrigation agriculture and harvesting of wild resources. Foge Island was partly cleared of vegetation before the inundation.

13. Ramsar Criteria:

1 • 2 • 3 • 4 • 5 • 6 • 7 8 • 9

14. Justification for the application of each Criterion listed in 13 above:

Criterion 3:

Foge Island forms part of a regional biodiversity hotspot due to its species richness and supports the element of biodiversity that is characteristic of such wetlands in the Guinea savanna woodland of Nigeria. It supports over 180 species of birds and 82 species in 18 families.

Reports reveal the presence of western hartebeest, waterbuck, hippopotamus (*Hippopotamus amphibius*), Kob, reedbuck and green monkeys on the island. These are the remnant population of those trapped by the inundation through creation of Lake Kainji. These and the vulnerable savanna elephants (*Loxodonta africana*) occur in the adjoining National Park. The species on the island need protection, as they are under serious threats.

15. Biogeography

a) biogeographic region:

Foge Island though now virtually treeless due to human activities, is in the Guinea Savanna. The soil water regime and the humidity of the environment create the ambience of the southern Guinea Savanna.

b) biogeographic regionalisation scheme:

Keay R.W.J. (1959a). An outline of Nigerian vegetation. Lagos: Government Printer

Keay R.W.J. (1959b) Derived savanna: derived from what? Bulletin de l'Ifan 21: 427-438

Keay R.W.J. (1960) An example of Northern Guinea Zone vegetation in Nigeria. Nigeria Forestry Information Bulletin No 4. Lagos: Government Printer

16. Physical features of the site:

The solid geology of Foge Island comprises sand and silty alluvium deposited during the last 15,000 years. The local soil has developed from this parent material. The island was formed from a pre-Kainji dam floodplain island of the same name that bifurcated the R. Niger in the area approximately 35 km south of Yelwa. The area is low-lying, with gentle slopes and numerous slight depressions (probably marking river channel locations in times past). The permanently exposed sections are dotted with numerous termite mounds. The low-lying nature ensures that erosion is minimal except at the shores where waves and the action of seiches create wave-cut platforms.

There is a rhythmic fluctuation in lake level during the year, which determines the extent of inundation of the island. The Kainji Lake fills to its maximum level in October consequent upon inflow from July to October during the rainy season in Nigerian upstream catchments (Sokoto, Swashi, Kubli). This inflow is termed the 'White Flood' on account of the high sediment load. The annual draw down commences with the onset of the dry season in November. But a secondary water level peak is attained between December and February (the 'Black Flood' – because its waters are desilted and clearer). This flood is caused by rains of the same rainy season at the headwaters of the Niger in Guinea and Sierra Leone, but arrive late in Nigeria due to flow retardation in the inland delta on the Niger in the region around Timbuktu, Republic of Mali. The water level falls from February to its lowest levels in July. Superimposed on this annual rhythm is that caused by variations in outflow of turbinated water due to power generation needs, daily rhythms of evaporation, and the **seiches** common in the lake.

The climate is the Koppen's A_{w1} (i.e. humid tropical wet and dry climate with almost equal length of rainy season and dry season) with clearly marked dry season extending from October/November to April and a rainy season during the remainder of the year. Mean total annual rainfall is 1018 mm. The peak of the season is between July and August. Mean maximum and minimum temperatures during the season are 35°C and 24°C, respectively. Mean temperatures in the dry season range from a mean maximum of 38°C (in late March and April) to a mean minimum of 16°C in December/January. The dry season is dominated by cool and dusty, northeasterly Harmattan winds.

17. Physical features of the catchment area:

The Lake Kainji has an area of 1260 km² and receives drainage from catchments in Nigeria having an area of approximately 100,000 km².

18. Hydrological values:

The nature of the geology ensures ground water recharge during high water, but the annual large draw down in the lake (>10 m) however promotes situations of significant decline in ground water levels in the unconfined shallow aquifers between March and June. There is annual siltation on the seasonally inundated zones during the "White Flood". The waves generated by **seiches** prevalent on Lake Kainji, promote significant erosion of the shores of the island. This enhances turbidity downstream of the island during the 'clear' water period of the Black Flood (December –March) and the period before the arrival of the silt-laden Black Flood (April-June).

19. Wetland Types

a) presence:

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

b) dominance:

O, P, Tp

20. General ecological features:

Much of the island is submerged during high water (August – October). Marshy pools cover a significant part of the un-inundated sections. Swamp vegetation includes *Nymphaea lotus*, *Echinochloa pyramidalis*, *Echinochloa stagnina*, *Cyperus procerus*, *Vossia cuspidata*, *Polygonum senegalense* and *Brachiolaria* sp. *Echinochloa* sp are found on the strand line and litter the beach during draw down. The island is significantly treeless due to the part-clearance of the vegetation on the island before inundation as suggested by experts, and tree felling by fisherfolk who gather fuelwood for drying fish. But there is a growing activity of citrus, guava and mango cultivation. Small fishing settlements dot the island.

During low water, the island is a grassland area with numerous shallow ponds. *Andropogon*, *Hyparrhenia* and *Hyperthelia* grasses dominate the vegetation in areas not usually inundated. It is an important breeding ground for water birds, including the White-

faced whistling-duck (*Dendrocygna viduata*), Blue-cheeked Bee-eater (*Merops persicus*), Collared Pratincole (*Glareola pratincola*), and Spur-winged Lapwing (*Vanellus spinosus*). Other birds sighted in the area include the Glossy Ibis (*Plegadis falcinellus*), Spur-winged goose (*Plectropterus gambensis*), Pintain (*Anas acuta*) and African Darter (*Anhinga rufa*). The inhabitants of the island hunt the birds.

21. Noteworthy flora:

Nymphaea lotus, *Echinochloa pyramidalis*, *Echinochloa stagnina*, *Cyperus procerus*, *Vossia cuspidata*, *Polygonum senegalense* and *Brachiolaria* sp.

The recurrent drought in the Sudano-Sahelian zone of West Africa where the headwaters of the Kainji Lake (R. Niger) are located, the now virtually permanent draw down and the large freeboard, and the general tendency towards a climate change, through a long-term alteration of the hydrological regime, threatens the continued existence of these plant species.

22. Noteworthy fauna:

Dendrocygna viduata, *Merops persicus*, *Glareola pratincola*, *Vanellus spinosus*. It is an important breeding ground for water birds and the inhabitants of the island hunt the birds. Again, the recurrent drought in the Sudano-Sahelian zone of West Africa where the headwaters of the Kainji Lake (R. Niger) are located, the now virtually permanent draw down and the implications for water bodies on the island, the general tendency towards a climate change, and the potential heightened hunting of these birds in the event of food insecurity, threaten their continued existence.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The local people depend on the site for fishing, collection of wild resources and floodplain irrigation agriculture. There are locations containing broken pottery apparently derived from old village ruins.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

- iii) It is a site where the ecological character of the wetland depends on the interaction with the indigenous peoples.

The site, through grazing, farming and harvesting of wild resources supports community (mostly migrant fisher folk) livelihood and if community activities are not regulated, the ecological character of the wetland may be impaired.

24. Land tenure/ownership:

a) within the Ramsar site:

The land within the site is the exclusive property of the Federal Government of Nigeria. The whole Kainji Lake basin, including the original island was expropriated before dam construction in the early 1960s. The island's wetlands are however managed by the island's communities as common property for fishing and other commercial uses. The agricultural land 'belongs' to individual families and individuals in the villages on the island.

b) in the surrounding area:

The surrounding land area is mostly within the Kainji Lake National Park, a strictly managed Park, though poachers are a great challenge. In other areas, agricultural land 'belongs' to individual families and individuals in the villages on the island, though as apportioned by the Emirate Council (Emir of Borgu), or the local vassal. There is not much presence of government.

25. Current land (including water) use:

a) within the Ramsar site:

Fishing is the major occupation of the residents (approx. 5000) but this is supplemented by game hunting (mainly birds) and farming.

b) in the surroundings:

The local people (approx. 5000) are engaged in flood recession crop cultivation - rice, millet, maize, yam, and vegetables are planted.

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

a) within the Ramsar site:

The declining trend in rainfall since 1970 in the catchments tributary to the Kainji Lake (particularly the Sokoto-Rima), and dam construction in the tributary catchments (Swashi, Kubli, Sokoto-Rima) have promoted long-term low water conditions and the permanent exposure and desiccation of parts of the island. Long-term hydrological regimes have thereby been altered. Large-scale over-fishing is common. The local population hunt birds and the island is virtually treeless as a result of tree felling by fisher folk to produce wood-fuel for drying their fish.

b) in the surrounding area:

Same as (a) above

In addition, the Kainji Lake National Park and the Nigerian Institute for Freshwater and Fisheries Research have put in place stipulations for managing the ecology of the site. But as reported by Kainji Lake Research Project Technical Report 3 (1973) and subsequently in various reports and publications of the Kainji Lake Research Institute and the successor Nigerian Institute for Freshwater and Fisheries Research, the Kainji Lake and by extension the Foge Island wetlands, have the 'highest fishing effort in comparison with other large African lakes, with a density of fishermen of about five per square kilometer'. If management

efforts fail, or if food security fails, pressure on wetland resources may irredeemably damage the ecology.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Measures against over-fishing were put in place by the defunct Kainji Lake Research Institute (now National Institute for Freshwater Fisheries Research). These border mainly on fishnet mesh size and regulation on fishing season.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?

Yes: The management plan is similar to that developed for the National Park management system in Nigeria (see Nigeria Parks, 1996). The degree of implementation is however as enabled by available resources, and the general poverty engendered by the prevailing economic and climatic conditions (Nigeria Parks, 1996).

NCF (Nigerian Conservation Foundation) developed a management plan for the Park, including the island in 1992. The overall goal remains to maintain a biodiversity levels and ecosystem functions for the benefit of the local people, the nation and future generations.

d) Describe any other current management practices:

28. Conservation measures proposed but not yet implemented: None

29. Current scientific research and facilities:

The Nigerian Institute for Freshwater and Fisheries Research (NIFFI), New Bussa (9°52'N 04°41'E) and its predecessor, the Kainji Lake Research Institute have conducted and are currently carrying out research work on the site and the Kainji Lake. Research findings are published in the Institutes' Annual Reports and other publication outlets.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

Very minimal and unappreciable

31. Current recreation and tourism:

Not noticeable. Interested scientists and tourists visit the site for bird viewing and general countryside tours.

32. Jurisdiction:

Kebbi State

Niger State

National Institute for Fresh Water Fisheries Research, New Bussa

33. Management authority:

The Director, Niger State Department of Forestry, Minna, Niger State

Ministry of Environment, Minna, Niger State

Ministry of Agriculture and Natural Resources, Minna, Niger State

The Director, Department of Forestry, Birnin Kebbi, Kebbi State

Ministry of Environment, Birnin Kebbi, Kebbi State

Ministry of Agriculture and Natural Resources, Kebbi, Kebbi State

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