

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

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**1. Name and address of the compiler of this form:**

Prof. O.O. OGUNKOYA  
Department of Geography,  
Obafemi Awolowo University, Ile-Ife, Nigeria  
[olayinkaogunkoya@yahoo.co.uk](mailto:olayinkaogunkoya@yahoo.co.uk)  
+234 803 348 6428

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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 2007

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**3. Country:**

Nigeria

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**4. Name of the Ramsar site:**

Oguta Lake

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**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

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

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**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) ;

b) Describe briefly the type of boundary delineation applied:

The boundary of the site follows the strandline of the Lake in the north, south and west boundaries and in the east part is also based on the river-vector

The lake however increases in size during the rainy season when it receives overflow from the River Niger and floodwaters from its tributaries, Rivers Itu, Awbuna and Njaba.

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

5°42'N 6°47'E (Latitude 5,70 and Longitude 6,80 in decimal degrees)

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**9. General location:**

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.



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

##### **Criterion 1:**

Oguta Lake, the largest natural lake in southeastern Nigeria, is located in a natural depression within the extended east bank floodplain of the River Niger downstream of Onitsha. The lake surface area varies from 180 ha in the dry season to 300 ha in the rainy season.

The site is the only example of such 'large' natural lake in the Rain Forest of southern Nigeria. Though there are other lakes in southern Nigeria (almost all in the East and on Sedimentary Rock), these others are much smaller and located in the Guinea Savanna on the flood plain upstream of the confluence of the River Niger and River Anambra, north of Onitsha.

##### **Criterion 2:**

Oguta Lake is not known as an Important Bird Area, but small populations of one of the most endangered primate species in Africa, the Sclater's guenon (*Cercopithecus sclateri*) survive in the relict swamp and riverine forests south of the lake (Oates, 1996). The survival of the species should be enhanced if the Lake and the forests become a Protected Area.

##### **Criterion 3:**

The Lake supports 40 fish species such as *Chrysichthys sp.*, *Lates sp.*, *Alestes sp.*, *Tilapia sp.*, *Citharinus sp.*, *Mormyrus sp.*, *Synodontis sp.*, and *Schilbe sp.*. It also contains 20 zooplankton and 258 phytoplankton species in 107 genera (Omin, 1983). This is a high biodiversity for the region. The species diversity contributes to the biological diversity of the Rain Forest ecological zone of southern Nigeria (Ita and Balogun, 1984).

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15. **Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

a) **biogeographic region:**

Rain Forest

b) **biogeographic regionalisation scheme** (include reference citation):

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

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#### 16. Physical features of the site:

Tertiary - Recent sediments of the Benin Formation on which floodplain alluvium have been deposited, underlie the site. The alluvium consists of argillaceous particles while the Benin Formation consists of poorly sorted, cross-bedded friable sands with minor intercalations of clay. The topography tends towards a flat surface.

Oguta Lake receives perennial drainage from Rivers Njaba, and Alusi, which have their source in the Awka-Orlu Cuesta in north central Imo State. It also receives overflow from the Niger during the peak rainy months of September and October. Lake Oguta drains into the River Orashi, a river on the east bank floodplain of the Niger and which conveys R. Niger's floodwaters directly to the Niger delta.

The lake has a maximum depth of 8.0 m and a mean depth of 5.5 m, with a water surface area that varies from 180 ha in the dry season to 300 ha at the peak of the rainy season. Water level varies over a range of 2.7 m between these two seasons. The length of the shoreline is approximately 10 km. Surface water temperatures vary from 24<sup>0</sup>C in December to 31.0<sup>0</sup>C in March. A very weak thermal stratification occurs towards mid-day between February and May. Secchi-disk transparency is 4.0 m early in the rainy season but declines to 0.61 m at the peak of the rainy season consequent upon the inflow of sediment-laden waters from the River Njaba/Alusi and Niger floodwaters. The mean pH is 6.0 and ranges from 5.2 to 6.2 while Dissolved Oxygen ranges from 4.8 –6.0 with a mean of 5.5. Conductivity ranges from 8.6 to 16.5  $\mu$ S

The climate is the Koppen's **A<sub>f</sub>** (i.e. humid tropical rain forest) with a short dry season extending from December to February and a long rainy season during the remainder of the year. Mean annual rainfall is 2120 mm with a unimodal distribution with the peak in September. The period between July and August is characterized by overcast skies and milder temperatures (mean: 25<sup>0</sup>C). Mean temperatures range from 25<sup>0</sup>C to 28<sup>0</sup>C (April). The dry season is dominated by dusty, Harmattan winds.

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#### 17. Physical features of the catchment area:

The catchment area comprises the drainage area of the Njabba River and a part of the R. Niger floodplain in the region south of Onitsha. Tertiary - Recent sediments of the Ogwashi-Asaba, Ameki, and Benin Formations underlie the catchment area. The sedimentary rocks are generally poorly consolidated and prone to gullyng. The former two formations consist of alternating shale, sandy shale, clayey sandstone, limestone, and lignite bands. The Benin Formation consists of poorly sorted, cross-bedded friable sands with minor intercalations of clay. While the western part of the catchment is lowlying and generally featureless, the eastern and northern portion has a highly undulating topography interspersed with flat plains. This part is marked by spectacular gullies, with the main river, Njabba laden with sediment.

The archetype vegetation of the area is the Rain Forest but this has been reduced to a mosaic of small plots of field crops (cassava, yams, cocoyams, vegetables) and agro-forestry (oil palms, *Irvingia* sp., *Cola* sp., *Musa* sp.). Whereas oil palm is grown in groves or plantations, the others are grown around homesteads.

Except in the main urban communities, settlements are dispersed and field plots and agro-forestry surround the homesteads.

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#### 18. Hydrological values:

The lake is the source of municipal and domestic water for the Oguta community. It is also the receptacle of urban sewage from Oguta and environs, and a trap for sediment.

The alluvium underlying the area is a good aquifer that is annually recharged by rainfall and floodwaters.

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## 19. Wetland Types

### a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

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, M in order of decreasing dominance.

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## 20. General ecological features:

The lake contains 258 species of phytoplankton in 107 genera (Omin, 1983), There are 40 fish species in the lake, and these include *Chrysichthys*, *Lates*, *Alestes*, *Tilapia*, *Citharinus*, *Mormyrus*, *Synodontis*, *Hemichromis*, *Hydrocanus*, *Clarias*, *Labeo*, *Hepsetus*, *Gnathonemus*, *Ophiocephalus*, and *Schilbe*.

*Cercopithecus sclateri* occurs in small, scattered populations in some relict forests of the area. This is one of the most endangered primate species in Africa, threatened by forest destruction and hunting in an area with dense human population. The guenon was feared to be extinct until it was found in this area in 1988, where the species is regarded as sacred by the inhabitants of a few communities (Oates, 1996).

During the dry season, the soil is dry except for the River Niger's overflow channels. The whole zone southwest of the lake is inundated from September to December by Niger's floodwaters. The tree species here include *Lophira alata*, *Pycnanthus angolensis*, *Ricinodendron heudelottii*, *Sacoglottis gabonensis*, *Uapaca ap.*, *Hallea ledermannii*, *Albizia adianthifolia*, *Irvingia sp.*, and *Ficus vogeliana*. The oil palm (*Elaeis guineensis*) is common, and the understory is dominated by rattans (*Calamus deerratus*).

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## 21. Noteworthy flora:

### Macrophytes –

**Emergent:** *Crinum natans*, *Vossia cuspidata*, *Ipomoea batata*

**Floating:** *Pistia stratiotes*, *Nymphaea lotus*

**Submerged:** *Ceratophyllum sp.*, *Utricularia sp.*

**Agroforestry species -** *Elaeis sp.*, *Irvingia sp.*, *Musa sp.*

**The tree species** here include *Lophira alata*, *Pycnanthus angolensis*, *Ricinodendron heudelottii*, *Sacoglottis gabonensis*, *Uapaca ap.*, *Hallea ledermannii*, *Albizia adianthifolia*, *Irvingia sp.*, and *Ficus vogliano*.

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## 22. Noteworthy fauna:

*Chrysichthys*, *Lates*, *Alestes*, *Tilapia*, *Citharinus*, *Mormyrus*, *Synodontis*, *Hemichromis*, *Hydrocanus*, *Clarias*, *Labeo*, *Hepsetus*, *Gnathonemus*, *Ophiocephalus*, and *Schilbe*. *Cercopithecus sclateri*

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### 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:

Main values of the lake include fishing and tourism. The commercial fishery supports the livelihood of a significant section of the community. There were 2403 full time and 154 part-time fishermen operating on the lake. Community members smoke and sell the fish. A hotel, the Oguta Lake Motel and Tourist Resort (\*\*\*) and a Scottish-designed 18-hole golf course have been established to attract tourists. Some people worship a deity associated with the lake.

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:

- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

It is a site that has exceptional cultural traditions and records of colonial influence and the recent Nigerian Civil War.

In the colonial era, the Oguta Lake was a port for the evacuation of palm products. The relic of the jetties used by the United African Company (U. A. C.) still exists. During the civil war, the Oguta Lake was a base for the rebel Biafran Navy!

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### 24. Land tenure/ownership:

- a) within the Ramsar site:

The Lake is by law, the exclusive property of the Federal Government of Nigeria. In reality, the Government has decided to build a port on the lake (a resuscitation of UAC efforts!). However, government being far away and the local people having full access to the resource, *de facto* ownership resides with the Community. Government has never contested the right of the people to the resources of the lake.

- b) in the surrounding area:

Federal Government of Nigeria, Imo State Government, Oguta Local Government, and individuals who have received a 'Certificate of Ownership' of a landed property from the Government. Customary ownership is respected.

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### 25. Current land (including water) use:

- a) within the Ramsar site:

Fishing, water transport, sand dredging, and tourism.

- b) in the surroundings/catchment:

Urbanization (Oguta), farming (cassava, yams, legumes and vegetables), agro-forestry, limited poultry, cattle, sheep and goat rearing, piggery, cottage industry and tourism.

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**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:

Overfishing is stressing the lake. Unusual algal blooms have been observed on the lake. Sand dredging and associated spikes in turbidity and nutrient release from bed sediment.

b) in the surrounding area:

There is no sewage/waste water treatment in the urban area abutting the lake. All sewage flows into the lake. Consequently, the lake has high  $\text{NO}_3^-$  concentration ( $0.76 \text{ mgL}^{-1}$ ) suspected to significantly result from input of mineralized human excrement washed down from the catchment. Further, due to deforestation, weakly consolidated sediment and poorly structured soils, and poor road and urban drainage design, there is massive gullying and sediment deposition by the tributary rivers.

The saving grace is that the lake has an active outlet, and it is annually flushed by floodwaters, else it should long have been silted up or killed by aggravated eutrophication.

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**27. Conservation measures taken:**

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

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?

No

d) Describe any other current management practices:

None

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**28. Conservation measures proposed but not yet implemented:**

None

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**29. Current scientific research and facilities:**

Researchers from the University of Port Harcourt, Port Harcourt and the Nigeria Fresh Water Fisheries Institute, New Bussa continue to conduct studies on the lake.

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

An NGO, Boreholes Organization has embarked on the Oguta Lake Watershed Protection Project to protect and revitalize the Lake. The local people appear to be actively involved in the Project. The aim of the project is to promote sustainability through active involvement of local indigenes, maximization of social and health benefits through training on sanitation and hygiene education.

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**31. Current recreation and tourism:**

A hotel, the Oguta Lake Motel and Tourist Resort (\*\*\*) and a 18-hole Scottish-designed golf course have been established to attract tourists.

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**32. Jurisdiction:**

Nigeria Inland Waterways Authority, Lokoja  
Imo State Government, Owerri  
Oguta Local Government, Oguta

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**33. Management authority:**

Nigeria Inland Waterways Authority, Lokoja  
Imo State Government, Owerri  
Oguta Local Government, Oguta

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**34. Bibliographical references:**

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- Nwadiaro, C.S.** (1989) Preliminary observations on the nature, taxonomic composition, distribution, behaviour and nutrient requirements of the "unusual" Algal "Jellies" of Oguta Lake in southeastern Nigeria. *International Review of Hydrobiology* 74 (6), 633-642
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- Oates, J.F.** (1996). African Primates status survey and Conservation Action Plan. IUCN/SSC Primate Specialist Group.
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- Omin, V.R.** (1983) The diversity and abundance of phytoplankton of Oguta Lake. BSc Thesis. University of Port Harcourt, Port Harcourt, Nigeria,.
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Please return to: Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland

Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org