

RS No
1671



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

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

Zambia Wildlife Authority
 Private Bag 1
 Chilanga, Zambia
 Email: zawaorg@zamnet.zm
 Tel: 260-01-278335 or 278365
 Fax: 260-01-278299 or 278365

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

18/04/06

3. Country:

Zambia

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Tanganyika

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:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

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:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site flows the international boundary between Democratic Republic of Congo and Zambia as well as the Zambia Tanzania Boundary to the mouth of the Kalambo River bordering Zambia and Tanzania. The boundary continues southwards along the Lake Tanganyika shore line at an offset of 200 meters inland to a point at the Mpulungu harbour where it follows the actual shore line for approximately 5 kilometres. It then it takes an offset inland of three kilometres for approximately 5 kilometres. Then along shoreline again for three kilometres. Then an offset of 100 meters up to the boundary of Nsumbu National Park on the Lufubu River. Then along park boundary and up to the inland edge of Kasaba bay. Then due west through the Nsumbu National park up to the northern end of the Nkamba bay. Then along park boundary through Nkamba plains up to the point on the shore where the Nkamba plains meet the shoreline. Then

along the shoreline up to Nsumbu settlement. Then an offset of 3 Km for a distance of 3 kilometres along the shore line due north. Then along the shoreline wetland up a point on Ndole bay. The along the shoreline to a point where the shore line meets the Zambia Congo boundary. The site starts from Lufufu river due west following the shoreline but including portions of the waters of the lake approximately two kilometres into the lake (an area of high biodiversity) and above the shoreline, it follows the valley around the shoreline traversing through Nsumbu National park and the Kaputa Game Management area. The boundary ends at the Zambia / DRC international boarder.

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

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

08°50'00"S, 30°25'00"E and 08°12'00"S, 31°12'00"E

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.

Located in the Northern Province of Zambia, the Tanganyika Ramsar site includes the entire part of Lake Tanganyika falling within Zambia as well as all the wetland portions along the lake shore including parts of Nsumbu National park and Kaputa game management area. The site has its administrative region in a town called Mpulungu on the shores of Lake Tanganyika. Mpulungu town is just adjacent to the site on the southern side.

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

2500 masl

11. Area: (in hectares)

230,000 ha,

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Lake Tanganyika is Africa's deepest and longest lake, with clear warm fresh water. The Zambian side is actually the smallest of the four countries that share the water body (Tanzania, Burundi and Congo DR). Most of the shoreline, 238 km (Pearce, 1992) is steep and rocky. It has few areas of very shallow swampy land and limited stretches of sandy beaches. More than 1,300 species of fish, invertebrates and plants have been recorded. About 500 of them are endemic to the lake, 41% of which is in Tanzania and 6% in Zambia. (Chenje, M. *et al*, 1996). Part of the site covers Nsumbu National Park, which is floristically rich with diverse vegetation communities, namely Riverine forest, Munga woodland, Itigi thickets, Miombo woodland, Shrubland and Grassland. Several species of animals are known to occur in the national park. The Hippo, Puku, Warthog, Duiker are some of the most common sighted animals in the park. In the last few years, animal population has been reduced due to poaching.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

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

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1

Lake Tanganyika is Africa's deepest and longest lake, with clear warm fresh water. Most of the shoreline, 238 km (Pearce, 1992) is steep and rocky. It has few areas of very shallow swampy land and limited stretches of sandy beaches. More than 1,300 species of fish, invertebrates and plants have been recorded and at least 500 are endemic. The lake has more than 185 cichlid fish species, over 70 snail species, 12 endemic crab species and more than 70 ostracod species (*Lakeside Volume 1 No. 1 Spring 1998. Lake Tanganyika Biodiversity Project*). Almost 98% of the Tanganyika cichlids are endemic to the Lake (http://en.wikipedia.org/wiki/lake_Tanganyika). This makes this lake and indeed the site unique in the region.

Criterion 2

The area has the African Elephant (*Loxodonta africana*) and Lion (*Panthera leo*), which are listed as vulnerable on the IUCN red List. The Leopard (*Panthera pardus*) is also present at the site and is on the Cites Appendix I. The area also has the endangered wild dog (*Lycaon pictus*) (endangered on IUCN Red List). The Spot-necked Otter (*Lutra maculicollis*, CITES App. II) is also present. The slender-snouted crocodile, *Crocodylus cataphractus*, (CITES App. I) and the Nile crocodile (*Crocodylus niloticus*, CITES App. II) are present too. The Plant *Khaya anthotheca* which according to IUCN Red List of Threatened Species is described as vulnerable is also present in the area. *Baphia speciosa*, which occurs in the Itigi thickets, is also described as vulnerable.

Criterion 3

The site supports endemic reptiles including the Lake Tanganyika Water Snake (*Lycodonmorphus bicolor*) and Water Cobra (*Boulengerina annulata*). More than 1,300 species of fish, invertebrates and plants have been recorded. About 500 of them are endemic to the lake (Chenje, M. et al, 1996). The Zambian share of the lake has more than 252 species of fish, of which 82 are endemic and peculiar to the site. The site also hosts several wildlife species important for the maintenance of the area's biodiversity.

The site is the home to buffalo (*Syncerus caffer*), zebra (*Equus burchelli*), elephant (*Loxodonta africana*), diverse antelope species, lion (*Panthera leo*) and leopard (*Panthera pardus*) as well as 350 recorded bird species, of which the flamingoes (*Phoenicopterus ruber*) are a spectacular view- no count data has been recorded.

Criterion 7

The Zambian share of the lake has more than 252 species of fish; of which 82 are endemic and peculiar to the site. Examples include the following Cichlids:

- *Neolamprologus brichardi*,

- *N. leleupi*
- *Altolamprologus compressiceps* and
- *Cyphotilapia frontosa*

The Zambian side is said to have the best ornamental fish in the lake (State of Environment in Zambia, 2000).

Two general of small pelagic fish namely *Stolothrissa* and *Limnothrissa* are endemic to Lake Tanganyika, although the *Limnothrissa* has been translocated to Lake Kariba and Itezhi – tezhi (both man made lakes). This genus is a commercially important source of protein for the majority of poor Zambians. (Mubamba, 1993).

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

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region: Lake Tanganyika Freshwater Ecoregion and Itigi- Sumbu Thicket Ecoregion

b) biogeographic regionalisation scheme (include reference citation): WWF Ecoregion Classification

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The lake is a typical Rift valley lake with steep sides and depths going up to 1470 m as maximum (Peter Leonard, 2005.)

The area experiences a seasonal tropical climate, hot wet from November to April, cool dry from May to July, and dry hot from August to October. The annual rainfall and temperature average is approximately 1200 mm and 19.65°C respectively.

Elevation varies around 2500 meters above sea level. Nsumbu National Park area has three main geological units namely, basic igneous and meta-igneous rocks with amphibolites close to the lakeshore; Metaquartzites of various ages in local places; and granites occur imbedded within the major country rocks. The three Nsumbu National Park soils are namely Cambisols, Leptosols and Acrisols.

The soils of the structural river valleys and other low-lying areas along Lake Tanganyika comprise Cambisols. The soils have formed in colluvial and alluvial deposits from the surrounding escarpments and therefore commonly contain gravels at some depth in the profiles. Variation among these soils is large, with minor inclusions of non-gravelly Lixisols in the valley bottoms, - Gleyic Cambisols (some mildly alkaline) near the streams and a major inclusion of gravelly Eutric Regosols at the foot of the escarpment and ferrallic Cambisols in the low lying areas.

Leptosols mapping unit, a mantle of loose material overlying hard rocks covers the hills and minor scarps with predominant slopes. Characteristically, the soils may be limited in depth by continuous underlying bedrock. The natural vegetation consists of miombo woodland. The other areas in the upland areas are covered by the Acrisols. These soils are highly weathered and strongly leached and are thus soils of low plant nutrient status characterized by

weakly structured, fine loamy to clayey sub soils (*From Nsumbu National Park GMP, ZAWA.*)

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The lake was formed as a result of the Great Rift Valley system of Eastern and Southern Africa, which in turn was formed as a result of continental drift. Lake Tanganyika lies at the southern end of the rift valley that is bounded by fault scarps. The land rises sharply from the lakeshore and the scarps can reach 600 meters. The Zambian side is actually the smallest of the four countries that share the water body (Tanzania, Burundi, Congo DR and Zambia). The lake basin that lies in Zambia comprises the Lufubu River and a number of short streams that are deeply incised into the scarp. This phenomenon is most dramatic around the 216-meter high Kalambo Falls.

Geologically, the Lake Tanganyika area of Zambia is made up of upper pre- Cambrian sedimentary and porphyritic igneous rocks. The soils are deep and feralitic, mixed with aeolian sands that are fine and have low clay and silt content. The base rocks are highly acidic, and only 1% of the soils are considered highly fertile and relatively stable. The low organic content of the soil, combined with the generally sloping land will also lead to high levels of erosion.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilization. The Lake Tanganyika is also a source of communication between the bordering countries, Zambia and Tanzania.

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*.

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

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

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

O- Tp -E

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The habitat is that of Miombo woodland, which is an evergreen with common species of *Brachystegia*, *Julbernardia* and *Isoberlinia*. The other type of forest is "Itigi" forest. This is a dry evergreen forest with a poorly developed upper storey and a dense, fire resistant thicket layer. Characteristic species are *Bussea massaiensis* and *Combretum spp.* (Mansfield et al, 1975).

Below is a description of the flora and fauna of the area as contained in the General Management Plan for Nsumbu National Park.

The site / park is floristically rich with diverse vegetation communities namely Riverine forest, Munga woodland, Itigi thickets, Miombo woodland, Shrubland and Grassland.

The Riverine forest is an evergreen forest, though some of the species are deciduous. These are found along rivers and lakeshore. Dominant species include *Ficus bussei*, *Ficus sycomorus* L., *Trichilia emetica*, *Acacia adenocalyx*, *Acacia polyacantha*, *Vitex doniana*, *Euphorbia ingens*. and *Khaya anthotheca* which is vulnerable, hence the need to secure its population.

Dominant grass species associated with this riverine area include *Imperata*, *Andropogon spp.*, *Cynodon spp.*, *Eragrostis spp.*, and *Phragmites spp.*

The Munga woodland is a Deciduous Forest found mainly on the valleys opening onto the lake and disturbed lands. It is characterized by mainly *Falderbia spp.*, *Acacia spp.*, *Ziziphus spp.*, *Combretum* and *Terminalia* species.

Grass species common in Munga woodland include genera of *Aristidia*, *Eragrostis*, *Panicum*, *Urochloa*, *Setaria*, *Hyparhenia* and *Bothriochloa*. This vegetation community supports high densities of Puku and Warthog.

The Itigi thickets are dominated by *Baphia spp.*, *Combretum spp.*, *Bussea spp.* and *Grewia spp.* Other plants documented to occur in the thickets are of the genera *Pseudoprosopis*, *Tapiphyllum* and *Burttii* species. The Itigi thicket contains plant species that are mostly spineless, multi-branched shrubs, and occur mainly on valley sides, the hills near the lake as well as some plateau areas.

The Miombo woodland found at higher elevation and further from Lake Tanganyika, the vegetation is 'light Miombo woodland' dominated by *Pericopsis angolensis*, *Pseudolachnosylis maprouneifolia* and *Combretum* and *Terminalia* species or 'dense Miombo woodland' dominated by species belonging to the genera *Brachystegia*, *Julbernardia* and *Isoberlinia* species. The woodland is characteristically interspersed with grassland, floodplains or marshy habitats.

Shrubs occur in the area. This vegetation community is characterized by *Terminalia spp.*, *Combretum spp.*, *Dichrostachys cinerea* and *Ziziphus abyssinica* on shallow and nutrient-poor soil. Dominant grass species are genera of *Hyparhenia*, *Andropogon*, *Sporobolus* and *Digitaria*.

Dambos and plains including sparse trees with five to ten percent canopy cover occur in the area. Dominant grasses include genera of *Hyparhenia*, *Eragrostis*, *Aristida* *Setaria*, and *Digitaria*. Other species include genera of *Imperata*, *Cymbopogon*, *Chloris*, *Dactyloctenium*, and *Urochloa*. In dambos, sedges (*Cyperus* spp.) and *Imperata* spp. dominate the habitats. These species are components of the vegetation associated with wet areas and are habitats for animals such as Sitatunga. Grassland vegetation is predominantly found on heavy, black, clay soils that are poorly drained. During the wet season, the soils become waterlogged.

Several species of animals are known to occur in the national park. The Hippo, Puku, Warthog, Duiker are some of the most common sighted animals in the park. In the last few years, animal population has been reduced due to poaching.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

According to IUCN Red List of Threatened Species, *Baphia speciosa*, which occurs in the Itigi thickets, is described as vulnerable. In addition *Khaya anthotheca* which according to the IUCN Red List of Threatened Species, is described as vulnerable, hence the need to secure its population.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The site is the home to buffalo (*Syncerus caffer*), zebra (*Equus burchelli*), elephant (*Loxodonta africana*), diverse antelope, lion (*Panthera leo*) and leopard (*Panthera pardus*) as well as 350 recorded bird species, of which the flamingoes are a spectacular view- no count data has been recorded.

There are two distinct fish species- Cichlids and non Cichlids. The highest species density of Cichlid fishes is found on the rocky shore in the littoral habitat of Nsumbu. Cichlids provide for sport fishing and have been collected and exported for the ornamental fish trade.

Two Clupeid species, also known as Kapenta - *Stolothrissa tanganyicae* and *Limnothrissa miodon* are the main commercial species.

Nsumbu National Park is one unique place where two species of crocodile co-exist. The two species are the Nile crocodile and the Slender Snouted crocodile. The park is also home of the lake Tanganyika water Snake.

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 Tabwa and Lungu people have inhabited areas around Nsumbu National Park, with the Tabwa on the western and the Lungu on the eastern boundaries. They are predominantly fishers for their living. The human population in the surrounding site is fairly low largely due to:

- (i) Nutrient poor soils that limit agricultural activities; the local communities engage in farming at subsistence level growing crops such as maize using Chitemene system, cassava, groundnuts and millet.
- (ii) Widespread presence of tsetse fly .The threat of tsetse flies has prevented local people from keeping cattle although goats and pigs, which are more resistant to disease, are now common.

Others are involved in fishing and trading, selling of forest products such as grass and fuel wood, and logging. Extensive and uncontrolled fishing is widespread on L. Tanganyika, resulting in depletion of fish stocks. In their quest to supplement fish protein and trading, the local people are involved in illegal harvest and bush meat trade. This has led to the decline in game animals such as Elephant, Buffalo, Roan and Eland. (*From the Nsumbu NP GMP, 2006*)

The Lake has a historical landmark in the town of Mpulungu where the ruins of one the earliest missionary churches in Zambia stands. It is also interesting because there are a number of early Stone Age sites in the southeast portion of the lake around Kalambo falls. Here the river incises through 22 meters of fluvial deposits that reveal archaeological horizons. Radiocarbon dating dates the earliest artefacts to around 60,000 years old.

The Lake itself is a large fishery that supports both the local and foreign fishing industries. It also serves as Zambia's only harbour. Every year a popular international fishing competition is held in the park.

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:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
 - ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
 - iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
 - iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:
-

24. Land tenure/ownership:

a) within the Ramsar site: and b) in the surrounding area:

The land tenure is complex, with the Chiefs controlling the movement of the people instead of allocating land. Individuals establish rights to land simply by opening it up to cultivation and lose the right to it once cultivation stops.

After independence, the state started designating part of the land as protected areas, for example the Sumbu National Park. In 1970, the south-eastern part of the lakeshore was designated as forest reserves (Mackel, 1971 in Hywel Davies). These protected areas are found on State Land Trusts land or Reserve land.

25. Current land (including water) use:

a) Within the Ramsar site:

1. The Zambian section of the lake supports an intensive artisanal fishery mainly in the inshore area. It is an important area for offshore pelagic fisheries for kapenta (*Limnothrissa miodon*) and angling sports. The area has a commercial fishing area comprising 28 purse seiners. The Zambian side is said to have the best fish in Lake Tanganyika, (State of Environment in Zambia, 2000).
2. 1.1 million hectares of forest estate and 1000 hectares of pine and eucalyptus plantations, subsistence cultivation. Of these, 1000 ha are of pine and eucalyptus plantations.

b) In the surroundings/catchment:

Traditional farming systems around the Lake Tanganyika center on bush-fallow ash cultures. This involves removing trees beyond the cultivated area that are then burnt to produce ash. Seeds are planted in the ash with a digging stick. In the Mbala area, the large-circle "Chitemene" (similar to "Ntemene" in Tanzania) system is used where only the treetops are removed. This system involves clearing of large areas, gathering cut vegetation for burning and making new fields each year. This resulted in almost continual population movement and widespread destruction of forests.

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:

- Bad fishing practices, for example purse seining, using powered vessels, gill netting; beach seines and using small- mesh nets for small/ young sardines.
- The Lake Tanganyika has been affected by pollution from industry, transport, agricultural chemical runoff and domestic waste from the commercial establishments (farming, fishing etc) around the lake including the businesses around Zambia's largest inland port Mpulungu.

b) in the surrounding area:

- Bad fishing practices, for example purse seining, using powered vessels, gill netting; beach seines and using small- mesh nets for small/ young sardines.
- Chitemene system (bad farming practices).

- Fires, either natural or man-made for hunting purposes, have been a major cause of deforestation; especially where it occurs during the latter half of the dry season when new wood growth has taken place. In this case, fire can retard the growth or destroy woodland.
- Iron smelting has also led to wood removal.

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.

Partly protected as National Park and game management area. These consist of the Nsumbu National Park, Forest Reserves and a strip 1.6 km wide along the park's shoreline.

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?:

A management Plan (for Nsumbu National Park, but includes a significant portion of the proposed Ramsar site) has just been finalised with the Assistance of the UNDP and will be under implementation soon. It includes several components that relate to flora, fauna, hydrology, land tenure and landscape. The following objectives:-

- To monitor and enforce park boundaries and create awareness amongst surrounding communities.
- To reduce poaching levels within the park through sensitization and law enforcement.
- To ensure proper disposal of all liquid and solid waste.
- To ensure restoration of depleted and degraded habitats
- To ensure the establishment of both short and long term research and monitoring programmes.
- To ensure the development of fire management plan
- To ensure effective control of Invasive Alien Species.
- To ensure the use of implementation of Environmental Impact Assessments and Land Use Plans on all development projects in the park.

d) Describe any other current management practices:

The Lake Tanganyika has been affected by pollution from industry, transport, agricultural chemical runoff and domestic waste and because of this Zambia under the Strategic Action Plan for Lake Tanganyika has proposed a region based strategy to combat pollution from transport ship vessels and domestic waste.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

- Plans are being made to formulate a trans-national fisheries management plan, and the research for the management of the Fisheries on the Lake Tanganyika Project (LTR). The project is intended to determine the biological basis for fish production on Lake Tanganyika and to reinforce skills and build up effective co-ordination mechanisms between the four riparian governments.

- The extension of the aquatic area that falls under the 'Protected Area' of the Nsumbu National Park.
- Depending on the population of game existing outside the Nsumbu National Park, there may be scope for the creation of a game management area in which local people could participate in sustainable management of wildlife resources.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Zambian side has a research station at Mpulungu that was made in setting up, expanding and continuing sampling programs for pollution, sedimentation and bios studies, including a draft integrated program.

Three bio reserves have been designated on the Zambian side of Lake Tanganyika.

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

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Most of the awareness activities of the site are done through promotion by Lodge owners using their brochures as well as park management staff who produce maps, brochures, and other print and electronic advertising. Major lodges that assist in advertising include Kasaba Bay Lodge, Kalambo Lodge, Nkamba Bay, and Ndole Bay.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The remote Nsumbu preserves 2,020 km², 80 km of Lake Tanganyika's shorelines, with the lake stretching 700 km to the north. It is home to the following recreation centres:

- i) Kasaba Bay Lodge,
- ii) Kalambo Lodge,
- iii) Nkamba Bay, and
- iv) Ndole Bay.

Other areas along the shores of the lake that offer accommodation are the;

- i) Tanganyika Lodge,
- ii) Isanga Bay,
- iii) Nkupi Lodge,
- iv) Mishembe Bay,

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Implementation of the Wetlands Policy housed under the Ministry of Environment and Natural Resources (MENR) and is executed the Zambia Wildlife Authority (ZAWA).

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Zambia Wildlife Authority
Private Bag 1
Chilanga, Zambia
Email: zawaorg@zamnet.zm
Tel: 260-01-278335 or 278365
Fax: 260-01-278299 or 278365

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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Social Sciences Department-Natural Resources Institute

United Nations Development Program/ Global Environment Facility (UNDP/ GEF), executed by the United Nations Project Services (UNOPS)

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

Annex 1

List of Commercial Fish Species in Lake Tanganyika

ENGLISH NAME	SCIENTIFIC NAME	LOCAL NAME
Clupeid	<i>Stolothrissa tanganyicae</i>	Chisamba
Clupeid	<i>Limnothrissa miodon</i>	Chilwe
	<i>Lates stappersii</i>	Nvolo
	<i>Lates angustifrons</i>	Pamba
	<i>Bathybates fasciatus</i>	Malembela
	<i>Cythotilapia frontosa</i>	Chang'ongo
Tiger fish	<i>Hydrocynus vittatus</i>	Nsanga
Armored Cat fish	<i>Chrysichthys mabusi</i>	Monde
Cat fish	<i>Auchenoglanis occidenatlis</i>	Poloko
	<i>Tropheus moori</i>	Mpumamabwe

Source: Nsumbu National Park General Management Plan, ZAWA