

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: 260-01-278365 or 278335

Fax: 260-01-278299 or 278335

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--

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.

ZAMBEZI FLOODPLAINS

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 boundary follows the floodplain boundary and includes portions of the West Zambezi game management area as well as open areas east of the Zambezi river.

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.

13° 50' S–22° 45' E, 16° 40' S –23° 45' 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.

The Zambezi (Barotse) floodplain is located in the Northwestern part of the country, on the Kalahari sands and covers four of the six districts in the Western Province, namely Kalabo, Lukulu, Mongu and Senanga. It has its administrative region in Mongu. The site includes a portion of the West Zambezi Game Management Area No 1 to the west and is adjacent to the Liuwa National park which is also located to the west. Most of the area also coincides with the Important Bird Area (IBA) called the Barotse floodplain under the Bird Life International (Important Bird Areas in Zambia by Peter Leonard, Zambia Ornithological Society 2005.)

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

914 – 1218m

11. Area: (in hectares)

900,000ha

12. General overview of the site:

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

This is the second largest wetland in the country, and is located in the north-western part on the Kalahari sands. The floodplain gets inundated between February and June. While the rain season starts in earnest around November, real flooding occurs only around February and the water remains even after the rain season in March/ April to about June. Towards the end of the dry season, flows are generally restricted to the main river channel. The plains are flats with scattered small hills that become islands during the flooding time. They generally support small stands of *Acacia albida*. Along the main river channel, there are small patches of thicket and *Syzygium guineense*. Riparian vegetation in general is sparse.

In the northern areas, we also have patches of *Diplorhynchus* scrub and *Borassus* forest. The area hosts a wide variety of water birds and several species occur in numbers exceeding the 1% threshold. Some of the species recorded in large numbers include Cormorant, Openbill Stork, Spur-Winged Goose, Common Pratincole, Caspian Plover, Whiskered Tern and African Skimmer (Peter Leonard, 2005).

The site hosts a number of animal species especially in the area to the north west so key among them include *Kobus leche* (Red Lechwe), hippopotamus (*Hippopotamus amphibius*), crocodiles (*Crocodylus niloticus*), Sitatunga (*Tragelaphus spekei*), Spot-necked Otter and Tsessebe (*Damaliscus lunatus*).

The Zambezi Flood Plain is host to about 80 different species of fish and serves as a major source of livelihood for the people of Western Province

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 2

The site hosts the *Kobus leche* (Red Lechwe), hippopotamus (*Hippopotamus amphibius*) and crocodiles (*Crocodylus niloticus*), all listed on CITES Appendix II and the Sitatunga (*Tragelaphus spekei*) and Tsessebe (*Damaliscus lunatus*), which are listed on CITES Appendix III. The site also hosts the Wattled Crane (*Grus carunculatus*) and lion (*Panthera leo*), which the IUCN Red List classify as vulnerable.

Criterion 3

The floodplain is an important area for aquatic vegetation as well as for waterbirds and various reptiles and amphibians and is important for the Red Lechwe (*Kobus leche*) and Sitatunga (*Tragelaphus spekei*), particularly in the upper floodplains. Water birds such as Cattle Egrets (*Bubulcus ibis*), Great White Egret (*Casmerodius albus*), Grey Heron (*Ardea cinerea*), Marabou Stork (*Leptoptilos crumeniferus*), Eastern White Pelican (*Pelecanus onocrotalus*) and Sacred Ibis (*Threskiornis aethiopicus*) are common on the floodplain.

The area has several endemic reptiles and amphibians; the burrowing skink (*Typhlacontias gracilis*), the blind legless skink (*Typhlosaurus jappi*), the spade snouted worm-lizard (*Dalophia ellenbergeri*), the beaked snake (*Rhamphiophis acutus jappi*), and the shovel-snouted frog (*Hemisus barotseensis*). The plated lizard (*Gerrhosaurus auritus*) occurs here at the northern limit of its range (Peter Leonard, 2005). The Nile Crocodile (*Crocodylus niloticus*) is also very common.

Criterion 4

The site supports high population of Blue Wildebeest (*Connochaetes taurinus*), providing refuge to it during adverse conditions, involving migration between Angola and Zambia. The wildebeest also breeds in Zambia. A total of 35,000 Blue Wildebeest was recorded in 2002. The area is also an important breeding ground for wattled cranes. (Kamweneshe and Beilfuss, 2002 in Peter Leonard, 2005) and acts as a refuge for the following bird species.

Common Name	Scientific Name	Comment
Cattle Egret	<i>Bubulcus ibis</i>	Restricted range of globally concern
Great White Egret	<i>Egretta alba</i>	Partial or possible migrant
Grey Heron	<i>Ardea cinerea</i>	Partial or possible migrant
Marabou Stork	<i>Leptoptilos crumeniferus</i>	Partial or possible migrant
White Pelican	<i>Pelecanus onocrotalus</i>	Globally important Congregation
Sacred Ibis	<i>Threskiornis aethiopicus</i>	Partial or possible migrant
Wattled crane	<i>Grus carunculatus</i>	Restricted range of globally concern
African Skimmer	<i>Rynchops flavirostris</i>	of globally concern
Saddle-billed Stork	<i>Ephippiorhynchus senegalensis</i>	Resident of globally concern
Reed Cormorant	<i>Phalacrocorax africanus</i>	Partial or possible migrant
Openbilled Stork	<i>Anastomus lamelligerus</i>	Partial or possible migrant
Caspian Plover	<i>Charadrius asiaticus</i>	Palaearctic migrant
Whiskered Tern	<i>Chlidonius hybridus</i>	Partial or possible migrant

Criteria 6

The area is important for water birds and the following have been known to exceed their 1% threshold:

1. *Phalacrocorax africanus*
2. *Anastomus lamelligerus*
3. *Charadrius asiaticus* and
4. *Chlidonias hybridus*

(Lincoln et al, 2001).

Criterion 8

The Zambezi Flood Plain is host to about 80 different species of fish and serves as a major source of livelihood for the people of Western Province. The wetland is a major spawning ground for the fish. The most exploited fisheries are:

Gnathonemus macrolepidotus, *Clarias ngamensis*, *C. mossambicus*, *C. theodora*, *Hydrocynus vittatus*, *Schilbe mystus*, *Synodontis nigromaculatus*, *S. woosnani*, *Hepsetus odoe*, *Tilapia andersoni*, *T. macrochir*, *T. melanopleura*, *T. sparrmani*, *Labeo forskali*, *Haplochromis concenteringtoni*, *H. carlottae*, *H. frederici*, *H. darlingi*, *Auchenoglania ngamensis*, *H. fasciatus*, *Serranochromis angusticeps*, *S. macrocephala*, *S. robustus*. Common commercially obtained fish can be found in Annex I.

Criterion 9

The North Western portions of the Zambezi floodplain (together with the Liuwa National park), is a migration area for wildebeest (*Connochaetes taurinus*). This is the second largest migration in the world. Survey in 2002 by Kamweneshe and Beilfuss estimates their numbers at 35,000 (Peter Leonard, 2005). The migration is between Angola and Zambia. The wildebeest drop their young in the Liuwa and Zambezi Floodplains. This area is therefore very important to their survival as young wildebeest are born and raised here before they migrate back to Angola during the flooding period.

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:** Upper Zambezi Floodplains Ecoregion

b) **biogeographic regionalisation scheme** (include reference citation): WWF Freshwater Ecoregions of Africa 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 floodplains are naturally formed on the low plateau of the African continent, a shallow rift filled with Kalahari sands. The 70 m thick layer of wind blown (wind erosion) sand is cemented together by iron, lime and silica, forming a relatively compact mass instead of a thick layer of loose sand.

There is an extensive lowland area with low gradient that leads to much flooding of the Zambezi River and its tributaries at peak- flow. The unconsolidated Kalahari sands lead to

the fluvial feature of the Zambezi Flood Plain by river incisions assisted by tectonic events of block faulting. The floodplain comprises extensive grasslands rather than swamps.

Soils of the floodplain are called Gleysols. These soils are suitable for rice growing and this is what makes some areas of the plain good for rice cultivation done by the local communities (JICA 1995).

During the Dry season and particularly towards the end in September, October and November, the plains are virtually free of surface water. The water that is there is only what is flowing in the main channel. Once the rain season sets in November, however, floods occur and cover the entire floodplain. During this time the only means of transport for people is by boat (Peter Leonard, 2005).

Trees are largely absent from the seasonally flooded areas but occasional raised wooded areas of 1-2 ha in extent occur throughout the floodplain. The Kalahari sand are covered in semi-evergreen woodland containing economically important species such as *Baikiaea plurijuga* and *Pterocarpus angolensis*, and interspersed with low-lying dambos that are characterised by grassland vegetation (Timberlake, 1997).

The area experiences three main types of season: wet, cool dry and hot dry seasons. The wet season is from October to March, with precipitation ranging from 600mm to 1400, increasing towards the source. Average temperatures in the wet season range from 20 to 22.5 degree Celsius, cold dry is normally 15 degrees Celsius and the hot season ranges from 22.5 to 27.5 degrees Celsius.

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 source of the Zambezi River in Zambia is the upper west of Zambia. The Zambezi River has a single peak hydrograph which results in flooding during the period November to March and a recession of the flood waters in the other months. The floodplains are naturally formed on the low plateau of the African continent, a shallow rift filled with Kalahari sands.

The soils from the source of the Zambezi River are of a Sandveld – poor soils used mainly for grazing cattle and some local subsistence crops. In the flooding zone, the soils are alluvial sand and clays of the river valleys used for grazing cattle and growing crops which adapt to wetlands.

18. Hydrological values:

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

The wetland is so vast that it's used as a natural flood control in the Zambezi River. The floodplain is also significant in the trapping of sediments as this is the point at which a significant drop in slope is recorded and sand and silt settles resulting in improved annual agriculture of the local residents.

The Victoria falls owes its dry season flows to a greater extent to the water retained in the Zambezi floodplain during the wet season enabling the falls, a world Heritage site, to sustain tourism activities that are a foreign exchange earner for Zambia and Zimbabwe.

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 • Tp • 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.

R-M-Ss-Ts-N

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 Zambezi Floodplain vegetation can be classified into two types, the upland and lowland vegetation.

The upland vegetation consists of evergreen, semi-deciduous and deciduous *Brachystegia-Julbernadia* woodland, with *Pterocarpus angolensis* (Mulombe/ Mukwa), *Guibourtia coleosperma* (Muzauli), *Azelia quanzensis* (Mwande), *Baikiaea plurijuga* (Mukusi), *Julbernadia paniculata* (Mutondo) and *Brachystegia spp* as the common species.

The lowland is characterised by bush-group type of vegetation and grassland. Relics of old forests that seem to have been cut away from the main woodlands are common. Also important are the riverine *Syzygium* forests that form a complex of tree species.

The floodplains also consist of grasslands. These can be divided on the basis of the dominant grass species as follows:

- Floodplain grasslands with species of *Cynodon dactylon*, *Eragrostis* and *Hacchypogon spp*.
- River valley and dambo grasslands that consist of *Hyparrhenia*, *Trichopteryx*, *Loudetia* and *Hyperthelia spp*.
- River plain grasslands include *Papyrus*, sedges, *Loudetia spp*, *Eragrostis* and *Aristida*.

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.*

- *Baikiaea plurijuga* and *Pterocarpus angolensis* - economically important
- Reeds (*Phragmites sp*) - fundamental element of building construction, & courtyards, mats, and some types of fishing apparatus. The sedges (*Papyrus sp*) have a more specialized use of making the sleeping mats; this makes them important in rural life on the floodplain.

- Villagers identified the palm “makulwane” as an important wetland resource used for ropes, baskets, winnowing baskets and tying in house construction. Both *Borassus* and *Raphia* are used, but neither use nor availability has been quantified (E. Chileshe, in litt.)
- Vegetation types of conservational interest include floodplain grasslands with *Echinochloa* sp. and *Oryza* sp. and wet pan grassland with mixed species (Jean & Baars 1991, Timberlake, 1997).

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 animal diversity of the Zambezi Floodplains is well known, and its importance is difficult to gauge.

The plain is the home of the Wildebeest (*Connochaetes taurinus*), Red Lechwe (*Kobus leche*) and the shy Sitatunga (*Tragelaphus spekei*), which are largely confined to the protected areas. It is also the habitat for Puku (*Kobus vardoni*), which is often associated with the impala (*Aepyceros melampus*), and the Tsessebe (*Damaliscus lunatus*), all of which are abundant in the wetland. Also noted are the hippo (*Hippopotamus amphibius*) and crocodiles (*Crocodylus niloticus*) that present a problem to the local community (no count data).

Water birds such as Cattle Egrets (*Bubulcus ibis*), Great White Egret (*Casmerodius albus*), Grey Heron (*Ardea cinerea*), Marabou Stork (*Leptoptilos crumeniferus*), Eastern White Pelican (*Pelecanus onocrotalus*) and Sacred Ibis (*Threskiornis aethiopicus*) are common on the floodplain- but their numbers are not known.

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 Lozi culture and way of life are closely linked with the seasonal flooding of the Zambezi (Barotse) plain, and most of the inhabitants of the wetland area move from the floodplain to the uplands and plain fringes during the flood period. This annual movement (transhumance), which includes the movement of the Litunga in a highly celebrated traditional ceremony, is called the “Kuomboka” (Nkhata & Kalumiana, 1997).

Another place of interest is the Ngonye Falls that is situated near a small town called Sioma, south of Senanga.

The wetland benefits are derived mainly from fishing, harvesting of reeds and surges by locals for mats, and harvesting of wild fruits. Other benefits come from tourism activities.

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:

Dominantly traditional (Barotse Royal Establishment headed by the “Litunga” or King), though Government intervention has been minimal and restricted to the protected areas within the plains. Under this system, land together with the rights of production, is held by the families and is heritable. Four categories of traditional land tenure system exist:

- i) “Ngweshi”- royal property of the Litunga and the royal family
- ii) “Mubu wa Luna”- for the use of the Indunas (Kings chief advisors) and attached to its title. The land title can be utilised by the incumbent of the title as if the land is his own.
- iii) “Mubu wa Lusika”- Land with production rights given to a family head. The family land is attached to a homestead and in general the members of the household can only work it.
- iv) “Sibumbu”- unoccupied land directly under the control of the Litunga.

The traditional land tenure system has continued despite the land act passed in 1975 (Land Conversions of Titles Act Cap 289 and its amendment in 1990) that placed all land in Zambia under the president (Simwinji, 1997).

There is no significant difference between the site and the area around the site.

25. Current land (including water) use:

a) within the Ramsar site: AND b) in the surroundings/catchment:

1. Fishing, commercial cultivation (especially rice production), limited tourism and reed & sedge collection (for the production of crafts and fuel production). Clay was also identified as one of the important resources of the wetland though only a few people use it for pottery.
2. Animal husbandry (cattle, pigs, goats, donkeys and chickens), limited tourism and agriculture (subsistence cultivation).

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:

1. Over fishing and the use of wrong fishing gear

2. Riverbank cultivation as well as cultivation on termite mounds within the high parts of the floodplain
3. Dredging of canals and
4. Poaching of wetland habitat-dependent animals – Red Lechwe and Sitatunga

(b) in the surrounding area:

1. Damming of some streams
2. Road construction across the wetland
3. Poaching in the adjacent Game Management Areas.
4. Poor agricultural practices (increased clearance and livestock grazing) and settlements.

For the near future, the potential environmental risks in the Western Province are expected in the overexploitation of renewable resources (van Gils, 1998). According to Simwinji (1997), natural resources were used sustainably under traditional management systems, but have been overexploited since powers were transferred to Government institutions. Now little incentive exists for communities to be involved in natural resource management and the main constraints are centred on legislation, tenure and ownership of resources.

The war in the neighbouring Angola has to some extent disturbed the migratory route of the Blue Wildebeest.

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.

Partially protected as Game Management Area; west of the wetland area is West Zambezi Game Management Area.

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 Management Plan has been planned yet

d) Describe any other current management practices:

The Lozi people are traditionally conservationists who use resources according to their customary laws based on indigenous knowledge systems. Village wetlands conservation committees were established with representatives from the structures: existing Barotse Royal Establishment (BRE), institutional structures at grassroots level, community, Government and NGOs.

The World Conservation Union (IUCN) has undertaken the Zambezi Basin Wetland Conservation and Resource Utilization Project (Phase I & II) which is aimed at the conservation of natural resources in the basin. The project also emphasizes the importance of local community participation in the successful preservation of the environment.

Phase II of the Zambezi basin Wetland Conservation and Resource Utilization Project integrates wetland resource conservation, profitable use of natural resources and improvement of livelihoods of the wetland communities in the Zambezi Basin.

28. Conservation measures proposed but not yet implemented:

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

Regulating fishing through the traditional system. An attempt is being made to introduce a closed fishing season that should be throughout the wetland, plans are underway to gazette the fish ban.

29. Current scientific research and facilities:

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

Under Phase II of the IUCN Zambezi Basin Wetlands Conservation and Resource Utilization Project research is built towards the development of models of appropriate practices and policies that will promote the sustainable and profitable management of wetlands, the project will have in place a field Project Office in Mongu, which will work with Village Area and District Development Committees. Phase II of the project commenced January 2003.

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.

There is an information desk created by the Community Based Natural Resources Management for their awareness campaign for wetland resource utilization. There's also a craft centre within Mongu known as Mumwa at which craft products are displayed and sold. At the Limulunga palace there is a Traditional Museum displaying various artefacts as well traditional conservation of natural resources within the wetland.

31. Current recreation and tourism:

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

There are some, though limited tourism activities going on in the Zambezi floodplain, especially game viewing, bird watching, walking safaris. Intrepid Zambian operators mount annual mobile safari expeditions in order to witness the wildebeest migration.

In fact there are two safari camps within the wetland, **Matamanene** and **Nalisheko**: both are in Kalabo. However, there is a hyper tourist activity during the tradition ceremony of **Kuomboka**.

Also of interest are the:

Sioma-Ngwezi National Park:

The Sioma is home to giraffe, roan antelope, buffalo, blue wildebeest, sable, Tsessebe and elephant. It has three game lodges within its vicinity:

- i) Maziba Bay,
- ii) Zambelozi Lodge, and
- iii) Mutemwa Lodge

-Luena Flats:

This small flat is situated east of the Liuwa National Park and has one safari lodge called the Mbanga Lodge.

There is currently little tourism in the area. The only resort is the Senanga Safari Lodge in the south, but two more fishing lodges are planned for in the area.

- The Provincial headquarters (Mongu), has a small hotel, motel and is home to one of the two museums found in the area (the other is in the small town of Lealui, which is about 15 km west of Mongu).

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 Tourism, Environment and Natural Resources (MTENR) and is executed by the Zambia Wildlife Authority

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.

Ansell W F H (1960) Mammals of Northern Rhodesia- Govt. Printers -Lusaka, Zambia.

Chabwela H N W et al (1994) Status of Wetlands in Zambia: Management and Conservation Issues.

Environmental Council of Zambia (2000): State of Environment Report 2000 - Norwegian Agency for Development Cooperation.

Lincoln D.C. Fishpool and Michael Evans (eds.), 2001. Birdlife Conservation Series No. 11. Important Bird Areas in Africa and Associated Islands. Priority sites for Conservation.

Nkata D. and Kalumiana (1997): Energy needs and shortfall Assessment of the Barotse Floodplains of Western Province -IUCN

Peter Leonard, 1995, Important Bird Areas in Zambia, Zambia Ornithological Society.

Simwinji N (1997): Zambezi Basin Wetlands Conservation and Resource Utilization Programme: Socio -economical and Ecological Database study- IUCN.

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 I

Common commercially obtained fish in the Zambezi Flood Plains

Bottlenose	<i>Mormyrus longirostris</i>
Churchill	<i>Petrocephalus catostoma</i>
Bull-Dog	<i>Gnathonemus macrolepidotus</i>
Tiger Fish	<i>Hydrocynus vittatus</i>
Spot-Tail Robber	<i>Alestes imberi</i>
Pike	<i>Hepsetus odoe</i>
Silver Robber	<i>Micralestes acutidens</i>
Stripe-Tail Robber	<i>Alestes ratralis</i>
Striped Mudsucker	<i>Labeo annectens</i>
Mudsucker	<i>Labeo lunatus</i>
Yellow Fish	<i>Barbus codringtoni</i>
Silver Barbel	<i>Schilbe mystus</i>
Sharp-Toothed Barbel	<i>Clarias mossambicus</i>
Blunt-Toothed Barbel	<i>Clarias mellandi</i>
Spotted Squeaker	<i>Synodontis nigromaculatus</i>
Vermiculated Squeaker	<i>Synodontis woosnami</i>
Green-Headed Bream	<i>Tilapia macrochir</i>
Red-Breasted Bream	<i>Tilapia melanopleura</i>
Banded Bream	<i>Tilapia sparrmanii</i>
Three spotted Bream	<i>Tilapia andersonii</i>
Tin-Faced Bream	<i>Serranochromis angusticeps</i>
Purple-Faced Bream	<i>Serranochromis macrocephala</i>
Yellow-Belly Bream	<i>Serranochromis robustus</i>
Brown-Spotted Bream	<i>Serranochromis thumbergi</i>
Banded- Jewel Fins	<i>Hemichromis fasciatus</i>
Green Bream	<i>Sargochromis mellandi</i>
Pink Bream	<i>Plematochromis robustus</i>
Rainbow Bream	<i>Haplochromis carlottae</i>
Fredric's Bream	<i>Haplochromis frederici</i>