

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

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9<sup>th</sup> 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, 2<sup>nd</sup> edition, as amended by COP9 Resolution IX.1 Annex B). A 3<sup>rd</sup> 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.

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

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Designation date

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Site Reference Number

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## 2. Date this sheet was completed/updated:

18<sup>th</sup> April 2006

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## 3. Country:

Zambia

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## 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.

BANGWEULU SWAMPS (Chikuni dropped from name as it referred to the specific site of the site before extension)

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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 ; or
- b) Updated information on an existing Ramsar site

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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:

The site has no major changes from the previous site except that the increase in area means more number of the same species are covered and protected. Designation of a larger area also means increased attention to the extended area resulting in more protection. There was a high risk of lack of protection of these species once they

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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 map boundary follows the boundary of the flooded area of the Bangweulu swamps.

**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.

10° 33' S, 029° 15' E and 12° 17' S, 30°43' 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 Bangweulu Swamps cover parts of the Luapula and Northern Provinces of Zambia and the southern-most extremity of the basin covers a small portion of the Central Province. The Bangweulu Swamps are in Luapula Province. The nearest large town is Samfya which is actually at the edge but within the proposed site. The town is on the banks of Lake Bangweulu. The area includes a portion of Isangano National park to the north-east, Bangweulu Game Management Area (GMA) number 26 and Chambeshi GMA Number 27 to the East and Kafinda GMA to the south. There is also Lavushi Manda National Park 50 km away from the site to the south-east and Mansa GMA No. 31 20 km south-west.

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

900 – 1200m

**11. Area:** (in hectares)

250,000 ha original area of Bangweulu Swamps already designated.

1 100 000 ha: new area, after extension of the Ramsar site (Chikuni area)

**12. General overview of the site:**

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

It contains a unique example of a complex of wetland types found in Central Southern Africa between 08<sup>0</sup> and 18<sup>0</sup> South latitude, and 22<sup>0</sup> and 34<sup>0</sup> East longitude. The sprawling Bangweulu Floodplains stretch into the horizon in the remote northern reaches. The Bangweulu Wetland comprises of lakes, swamplands, seasonally flooded grasslands and innumerable shallow water bodies linked by an intricate network of channels. A number of islands occur within the wetlands, the larger of which are inhabited and farmed. Dryland is also found in the form of termitaria that occurs within the seasonally flooded areas providing further diversity to the area.

**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

It contains a unique example of a complex of wetland types found in Central Southern Africa between 08<sup>0</sup> to 18<sup>0</sup>S and 22<sup>0</sup> to 34<sup>0</sup> East longitudes. The Bangweulu Wetland comprises of lakes, swamplands, seasonally flooded grasslands and innumerable shallow water bodies linked by an intricate network of channels. A number of islands occur within the wetlands complex as well as some dry land in the form of termitaria that occurs within the seasonally flooded areas providing further diversity to the area. It is the largest and most important freshwater system within central-southern Africa, adding to the importance of this wetland complex.

### Criterion 2

The site supports large numbers of the endemic, semi-aquatic *Kobus leche smithermani* (Black Lechwe), vulnerable on IUCN list of threatened species. It is home to the threatened wattled crane -*Grus carunculatus* and provides the only existing habitat in Zambia for the threatened shoebill stork *Balaeniceps rex*, two species which the IUCN Red List classifies as vulnerable. One also finds two species listed on CITES appendix III, such as the Tsessebe (*Damaliscus lunatus*) and Sitatunga (*Tragelaphus spekei*). The African Elephant (*Loxodonta africana*) which is vulnerable on the IUCN Red List is also present. Other threatened bird species include the vulnerable Slaty Egret *Egretta vinaceigula* and vulnerable Lesser Kestrel *Falco naumanni* (Fishpool and Evans, 2001)

### Criterion 3:

The wetland is home to the endemic Black lechwe (*Kobus leche smithermani*). This species has become highly vulnerable especially due to poaching as the area is not adequately protected. The area is also very rich in different wildlife species, including Tsessebe (*Damaliscus lunatus*), Sitatunga (*Tragelaphus spekei*), buffalo (*Syncerus caffer*), waterbuck (*Kobus defassa*), sable (*Hippotragus niger*), *Crocuta crocuta* (Hyaena) and roan (*Hippotragus equinus*). More rarely one can encounter elephant (*Loxodonta africana*). Bird biodiversity is also significant (please see Annex II for species). Fishpool and Evans, 2001 state that at least 13 of the 56 water bird species of the Zambebian biome that occur in Zambia have been recorded in the Bangweulu swamps, thus contributing to the biodiversity of the biogeographic region.

### Criterion 4:

Life in the swamp and its surrounding is dominated by the yearly water level cycle: the margin of the flooded area recedes up to 20 kms (Grimsdell & Bell 1975), with fish and animals following these movements. The site provides the only existing habitat in Zambia for the threatened shoebill stork *Balaeniceps rex*, thus acting as a refuge for this species; and it has the third largest Wattled crane (*Grus carunculatus*) population in Africa (Richard Beilfuss, ICF, pers. comm.). It is also important for other waterbird species at different stages of their lifecycle, such as for *Plectropterus gambensis* (Spur-winged goose), *Ephippiorhynchus senegalensis* (Saddle Billed Stork) and *Egretta alba* (Great White Egret). Migratory species also find refuge at different stages of life cycles. These include:

#### List of Some Migratory Bird Species found in the Bangweulu Swamps

Common Name	Scientific Name	Comment
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Marabou Stork	<i>Leptoptilos crumeniferus</i>	Partial or possible migrant
Spur-winged goose	<i>Plectropterus gambensis</i>	Partial or possible migrant
White Egret	<i>Egretta alba</i>	Partial or possible migrant
Black stork	<i>Ciconia nigra</i>	Palaearctic migrant

**Criterion 6:**

The following regularly exceed the 1% threshold of biogeographic population of the congregatory water birds (Peter Leonard, 2005).

- (1) Reed Cormorant (*Phalacrocorax africanus*)
- (2) White Pelican (*Pelecanus onocrotalus*)
- (3) Open Billed stork (*Mycteria ibis*)
- (4) Wattled crane (*Grus carunculatus*) and
- (5) Spur-winged goose (*Plectropterus gambensis*)

The area also holds more than 1 % of globally important congregations of the following species (Peter Leonard, 2005)

- (1) Southern Carmine bee-eater (*Merops nubicoides*)

The Bangweulu swamps also hold on a regular basis  $\geq 1\%$  of the global population of the Rufous-bellied Heron *Ardeola Rufiventris* (with 1400 individuals or 1.4% of the biogeographic population), the Shoebill *Balaeniceps rex* (with 232 individual birds or 3.6% of the biogeographic population) and the Kittlitz's Plover *Charadrius pecuarius* (with 1000 individuals or 1% of the biogeographic population), Fishpool and Evans, 2001).

**Criterion 8**

Bangweulu is the largest fishery in Zambia due to species diversity, endemism, and the importance of the wetland as breeding or spawning ground. The shallow and or muddy grounds and rocky crevices provide spawning grounds for both resident and migratory (*Mormyrus lacerda*) fish species in the breeding period. For a list of species see annex III.

**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:**

Bangweulu/Mweru Freshwater Ecoregion

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

WWF's Freshwater Ecoregions of Africa

#### 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 sprawling Bangweulu Floodplains stretch into the horizon in the remote northern reaches. The Bangweulu Wetland comprises of lakes, swamplands, seasonally flooded grasslands and innumerable shallow water bodies linked by an intricate network of channels. A number of islands occur within the wetlands, the larger of which are inhabited and farmed. Dry land is also found in the form of *termitaria* that occur within the seasonally flooded areas providing further diversity to the area. It is the largest and most important freshwater system within central-southern Africa.

The Bangweulu Basin is roughly circular with an area of approximately 31,000 km<sup>2</sup>. Of this 20,000 km<sup>2</sup> is covered by the core and first terrace of the basin. The wetland system (11,000 km<sup>2</sup>) is the largest and most diversified in Zambia. The Swamps are a depression of land formed by peneplain downwarping, and that is inundated consisting essentially of floating vegetation and wet peaty land. It is more or less waterlogged.

The basin itself is believed to have started during the period of the formation of the Congo and Lake Victoria Basins. However the final shape of the Basin was a result of the subsequent orogenies and rifts of the Luapula/ Lake Mweru, Lake Tanganyika and Lake Rukwa (Tanzania), and further uplifts of the Luangwa, Mbala, Luapula and the Congo Watershed (500 million years ago). The differences in the local depth of the basin have been attributed to the continued tilting towards the lake and deposition. It is argued that some of the forces shaping the basin are still active, emanating from the surrounding rift valleys (Grimsdell and Bell, 1975). The area is still said to be active as demonstrated by the occurrence of a small earthquake in Samfya at 11 55hrs on 24/4/94.

On top of such long-term variations, more local and short-term changes of water-level may be caused by the blocking of suds and mud/ sand of water flows, and subsequent opening of flows in new directions (Debenham 1952, Grimsdell & Bell 1975). Blocking of flows may occur in July, and summer (hot and dry) August to November.

Life in the swamp and its surrounding is dominated by the yearly water level cycle: the water level fluctuates 1-2 meters from peak in April to its low in November- December (Evans n.d). The margin of the flooded area recedes up to 20 kms (Grimsdell & Bell 1975), with fish and animals following these movements.

Unlike the plateau soils that are generally deeply weathered and leached, the soils of the basin are complex and have predominantly alluvial deposits (Trapnell, 1959 and Grimsdell & Bell 1975). The soil is medium acidic in the organic topsoil and becoming progressively acid with depth. The base of the saturation is lower in calcium, magnesium and potassium than most adjoining plateau soils. The deeper swamp areas probably include large areas of peat soils similar to dambo peat.

No information is available on soils of the lower lying areas that are permanently wet. The soils of the relatively higher parts all have dark peaty topsoil (15 cm) largely consisting of decomposing lechwe droppings and trampled grass. The 15-30 cm thick sub-surface layer ranges from loamy to clay texture (Chamburi series) but getting heavier with increasing depth. The subsoil color is usually dark grayish-brown to gray, and strongly mottled yellow, brown or red to varying degrees in different soils. The geology of the area comprises of

alluvial sands and clays of the river valleys with a combination of Savannah and Swampy vegetation type

The area experiences three main types of season: wet, cool dry and hot dry seasons. The Bangweulu region has one of the highest rainfall figures in Zambia: Samfya, up to 1978, had a 30-year average of 1380 mm, with 4 months, - December- March. - each having 200-300 mm (November with about half of that) (GRZ/SATEC 1979). The variability being comparatively small: 15-20% (Hywell Davies 1975). Mean annual temperature is 20.6 degrees Celsius while the total evaporation is about 2032 mm/annum.

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

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

Refer to section 16 above

#### 18. Hydrological values:

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

The Swamp is a natural flood controller. It also helps in groundwater recharge and in water quality control (through plant primary productivity, sedimentation and/ or accumulation).

#### 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.

Tp-W-Xf-U-Ts-M-O-N-P

#### 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 area has a diversity of vegetation. The variety corresponds to the physiographic, geology, soils and moisture regimes in the area.

Swamps: these are characterised by dominant stands of species such as *Cyperus papyrus* (reeds, matete), *Phragmites mauritianus*, *Typha domingensis* (southern cattail), *Limnophyton angolensis* and *Thalia welwitschii*. These reed beds of papyrus and Phragmites support large numbers of Sitatunga.

Grasslands: these grasslands are seasonally flooded and are dominated by grasses of the genera, *Acroceras*, *Leersia*, *Sacciolepis*, *Setaria*, *Loudetia* and *Trystachia*. Open water communities support *Nymphaea caerulea* and *Nymphoides spp.* often associated with emergent species such as *Eleocharis spp.* and *Oryza longistaminata*. When these are burnt early they produce a green flush attracting hartebeest, puku and other grazers. The fringes of these grasslands are termitaria grasslands that are typified by scattered termite mounds.

A distinct catena exists from the highlands along the slope to the wetland. Much of the slope is *Brachystegia* woodland, but transitional vegetation types occur towards the wetland area. Mature Miombo woodland with discontinuous canopy covers large parts of the Bangweulu Swamps dominated by *Julbernardia paniculata* (Mutondo), *Isoberlinia angolensis* ("mutobo"), *Brachystegia boehmii* ("miombo") and *Brachystegia bussei* ("mukongolo").

Where woodland has been degraded by fire or where soils are shallow, secondary Miombo emerges. Trees such as *Uapaca kirkiana* ("musuku") and *Combretum collinum* (Mufuka) dominate the woodland. Other species include *Uapaca sansibarica* and *Syzygium guineense*.

Much of the island vegetation has been severely degraded to grasslands due to agriculture, settlements and fires. Similarly in areas surrounding the wetland, wildlife has sharply declined or has been completely eliminated.

Except for the North- West of the basin and the islands, the basin supports a variety of wildlife species. While the Black Lechwe, Tsessebe (*Damalicus lunatus*) and Sitatunga (*Tragelaphus spekei*) dominate the wetland, species such as the elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), waterbuck (*Kobus defassa*), sable (*Hippotragus niger*) and roan (*Hippotragus equinus*) commonly occur in the woodland areas, particularly those of the National Parks.

Very little is known about the hydrobiology of the wetland though the swamps and the main river (Luapula) are rich in this particular resource, and further seem to be over-exploited. The fisheries legislation introduced during the colonization have been maintained by the Department of Fisheries despite the negative impact on the fishing communities (Chanda Ben, 1995).

## 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.*

*Phragmites mauritianus* – dominant species in this area

*Typha domingensis*

*Nymphaea caerulea*

Invasive species are absent in these floodplains.

## 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.*



*Kobus leche smithermanni* (Black lechwe)- endemic/ unique to Zambia, *Tragelaphus spekei* (Sitatunga) - abundant, approx. 20,000 animals.

*Damaliscus lunatus* (Tsessebe), *Ourebia ourebi* (Oribi), *Panthera leo* (lion) - rare, seen only in the Chikuni area around December/ January, *Crocuta crocuta* (Hyaena) - rare, seen in January to June in the Chikuni area only, *Phacochoerus aethiopicus* (warthog), *Potamochoerus porcus* (Bush pig).

The Bangweulu wetland is clearly an important area for avifauna both within Zambia and internationally. The strong population of several rare species together with the diversity and numbers of other species have qualified the area as Important Bird Area. Some important birds include

- (1) Reed Cormorant (*Phalacrocorax africanus*)
- (2) White Pelican (*Pelecanus onocrotalus*)
- (3) Open Billed stock (*Mycteria ibis*)
- (4) Spur-winged goose (*Plectropterus gambensis*)
- (5) Southern Carmine bee-eater (*Merops nubicoides*)
- (6) *Ixobrychus minutus* (little Bittern)- probably the last viable population of the African sub-species (Don Turner, IUCN- Heron Specialist Group). And
- (7) *Grus carunculatus* (Wattled cranes)- apart from being very abundant in central-southern Africa, Zambia boasts the highest populations in the world (Christian 1996) with approx. 700-800 birds

### 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:

David Livingstone died in the Bangweulu Swamps and his heart was buried at Chitambo, a place at the edge of the wetland. The region is therefore of considerable historical interest and has the potential to attract historians and scholars as well as vacationers.

The “Nachikufu” Caves are a historical site on the peripherals of Lavushi- Manda National Park.

The wetland is a major fishery in Zambia and is protected as such under the Laws of Zambia (Fisheries Act Cap. 314).

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:

Through a system of chiefs and indunas as custodians of land, the access and use of natural resources has been managed in a way that avoided decline or adverse effect to the ecosystem. For example fishing is done using traditional methods and for subsistence.

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

The site includes the Nachikufu caves with bushman paintings.

The National Heritage Conservation Commission (NHCC) maintains it is a site linked to the history of the Lunda Kingdom (originally from the Congo- DR). It has many wall paintings of 'bushmen' that are thought to have lived there before the Lunda nation displaced them.

- 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:

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#### **24. Land tenure/ownership:**

a) within the Ramsar site:

b) in the surrounding area:

The land of the Bangweulu and its catchment is mostly customary land. The chiefs of the area have control over this land, inclusive of the Game Management Areas (GMAs) that fall under their jurisdiction.

Only the Lavushi-Manda and Isangano National Parks, and the Forestry Reserves are State owned.

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

a) within the Ramsar site:

The main uses are fishing (by both the indigenous and foreign fishermen) - the Bangweulu is the largest fishery in Zambia. There is also water collection for drinking and brick construction.

Cultivation and settlements on the fringes of the wetlands and the higher termite mounds within the site

Wildlife conservation and hunting, especially the lechwe and Sitatunga.

The wetland is treeless except on private plots in the village. Trees are of the utmost importance for fuel, construction of houses, wells, latrines, granaries and furniture, and for canoes (the most convenient mode of transport). The dry land is still well wooded, especially the uninhabited hinterlands.

b) in the surroundings/catchment:

Shifting cultivation, settlement, livestock herding (though it has remained a poor economic activity) and wildlife conservation and hunting, especially the lechwe and Sitatunga.

Honey, mushroom and caterpillars are also utilized: sold and eaten, as are other forest plants and animals.

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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:**

Poaching

**b) In the surrounding area:**

1) Over fishing and fish poisoning, draining, dredging, canalization and low flood levels due to conditions in the upper catchment, the cause of which are not well understood; but may be due to human influence on rainfall or flow

2) Poor agricultural practices – chitemene (or slash and burn system) resulting in increased clearance for farm space and livestock grazing and settlements.

3) Poaching remains a challenge on the area and surrounding wildlife areas

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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:**

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.

The swamps cover the Chikuni, Bangweulu, Kafinda, Chambeshi Game Management Areas, as well as the Isangano and Lavushi-Manda National Parks. Therefore the swamps area surrounded by Protected Areas which are governed by the laws of Zambia, the Wildlife Act of 1998 though the fisheries aspect falls in a different organisation altogether.

**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?:**

**d) Describe any other current management practices:**

WWF-Zambia has embarked on a bee keeping community project to try to ease pressure on tree cutting.

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

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

Problems that are faced in terms of conservation in the swamps will be incorporated in the working agenda of the National Wetlands Steering Committee (NWSC) through a multidisciplinary/ institutional effort as for all other wetland areas in Zambia.

Proposed General Management Plan intends to achieve the following:

- Conserve the natural character and economic viability of the wetland and to support human use of wetland resources in terms of fishing, farmland, forestland and wildlife based enterprises (hunting and eco-tourism)
- Direct development away from sensitive habitats
- Create coherent development programmes in partnership with key stakeholders
- Recognise and maintain the role the wetland plays in serving the local communities.

The Zambia Wildlife Authority in conjunction with Worldwide Fund for Nature (WWF-Zambia office) has proposed general inventories

Adoption of the national policy for all wetland areas conservation and management.

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

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

The Chikuni area has a research center that unfortunately is underutilized. The area has adequate infrastructure and equipment for easy accessibility to the site.

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**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.

WWF/ ZEP Project has been working with some community in the Bangweulu area on **eco-tourism** with the aim of assisting them to achieve capacity to initiate and carry out activities aimed at improving their livelihoods and immediate environment. They have done so by helping to form a culture village called Muwele and involve a population of 4,200 locals.

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**31. Current recreation and tourism:**

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

The Bangweulu Wetlands could be an attractive tourist destination offering as it does, unique bird watching opportunities and a chance to experience 'real African wilderness'. It is thought that the demand for this type of holiday exists (Bell, pers. Comm. In Hansen 1992) and it is only the lack of facilities that prevents tourist activities taking place. There is currently only one tourist camp in the wetland, this being the Shoebill Island Camp on Chikuni side of the swamp.

The Isangano is one of the Parks visited by foreign visitors. This is the form of non-consumptive tourism- photographic and game viewing.

Shoebill Island: Zambia's Okavango with a difference in the Chikuni GMA. This island is famous for its vast number of shoebill stork, a bird species that is classified as an endangered species. This site used for both non-consumptive and consumptive tourism. Sport/ trophy hunting is also common in the area.

Tiger fish Haven: this facility attracts mainly the tourists that are interested in fishing sports and is renowned for its tiger fish.

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**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 and is executed by the Zambia Wildlife Authority.

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**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

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**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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Wildlife Monitoring Unit, Environmental Council Of Zambia, Lusaka- Zambia.

WWF/ National Parks and Wildlife Services (NPWS)-Lusaka.

WWF-DANIDA- Bangweulu Wetland Project.

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## Annex 1

Information on bird counts from the Bangweulu Aerial Survey report on Population and distribution of Wattled Cranes, Shoebills and other large water birds in the Bangweulu swamps, Zambia conducted in November 2002 by Bernard Kamweneshe, Richard Beilfuss, Kevin McCann, Paul Zyambo and Mathew Bokach

**Estimated numbers of selected water birds observed on the Bangweulu Swamps.**

Species common name	Scientific name	Estimated number
Eastern white pelican	<i>Pelecanus onocrotalus</i>	<10
Whitebreasted cormorant	<i>Phalacrocorax carbo</i>	<50
Reed cormorant	<i>Phalacrocorax africanus</i>	~2000
Grey heron	<i>Ardea cinerea</i>	>200
Goliath heron	<i>Ardea goliath</i>	<100
Purple heron	<i>Ardea purpurea</i>	>200
Great egret	<i>Casmerodius albus</i>	>1000
Intermediate/Little egrets	<i>Egretta spp.</i>	>10,000
Cattle egret	<i>Bubulcus ibis</i>	100s
Shoebill	<i>Balaeniceps rex</i>	~200
Yellowbilled stork	<i>Mycteria ibis</i>	<10
African openbilled stork	<i>Anastomus lamelligerus</i>	>30,000
Saddlebilled stork	<i>Ephippiorhynchus senegalensis</i>	<40
Sacred ibis	<i>Threskiornis aethiopicus</i>	100s
African spoonbill	<i>Platalea alba</i>	100s
Spur winged goose	<i>Plectropterus gambensis</i>	<5000
African skimmer	<i>Rhynchops flavirostris</i>	>10

## Annex II

Water birds (based on the Wetlands International list of Sub-Saharan African water bird species) observed during both aerial and boat surveys in July 2002.

Common name	Scientific name
Blackheaded heron	<i>Ardea melanocephala</i>
Black egret	<i>Egretta ardesiaca</i>
Squacco heron	<i>Ardeola ralloides</i>
Glossy ibis	<i>Plegadis falcinellus</i>
Hammerkop	<i>Scopus umbretta</i>
Yellowbilled duck	<i>Anas undulatata</i>
Fulvous whistling-duck	<i>Dendrocygna bicolor</i>
Whitefaced whistling-duck	<i>Dendrocygna viduata</i>
Knob-billed duck	<i>Sarkidiornis melanotos</i>
Egyptian goose	<i>Alopochen aegyptiacus</i>
African pygmy goose	<i>Nettapus auritus</i>
Redbilled teal	<i>Anas erythrorhyncha</i>
Hottentot teal	<i>Anas hottentota</i>
Black crane	<i>Amaurornis flavirostris</i>
African jacana	<i>Actophilornis africanus</i>
Lesser jacana	<i>Microparra capensis</i>
Blackwinged stilt	<i>Himantopus himantopus</i>
Redwinged pratincole	<i>Glareola pratincola</i>
Long-toed plover	<i>Vanellus crassirostris</i>
Blacksmith plover	<i>Vanellus amartus</i>
Crowned plover	<i>Vanellus coronatus</i>
Ringed plover	<i>Charadrius hiaticula</i>
Pied kingfisher	<i>Ceryle rudis</i>
Malachite kingfisher	<i>Corythornis cristata</i>
Africa pygmy kingfisher	<i>Ceryle picta</i>
Greyheaded gull	<i>Larus cirrocephalus</i>
Whiskered tern	<i>Chlidonias hybridus</i>
African fish eagle	<i>Haliaeetus vocifer</i>
African marsh harrier	<i>Circus ranivorus</i>



## Annex III

## Fish species found in Bangweulu

Common Name	Scientific Name
Sheepshead	<i>Mormyrus ovis</i>
Bottlenose	<i>Mormyrus longirostris</i>
Cornish Jack	<i>Mormyrus deliciosus</i>
Monteiri's Bull-Dog	<i>Gnathonemus monteirii</i>
Bull-Dog	<i>Gnathonemus macrolepidotus</i>
Parrot- Fish	<i>Cyphomyrus discorhynchus</i>
Tiger- Fish	<i>Hydrocyon Vittatus</i>
Pinkfin Alestes	<i>Alestes grandisquamis</i>
Torpedo Robber	<i>Alestes macrophthalmus</i>
Spot-Tail Robber	<i>Alestes imberi</i>
Spotted Citharinid	<i>Distichodus maculates</i>
Sailfin mudsucker	<i>Labeo altivelis</i>
Red-spot Mudsucker	<i>Labeo simpson</i>
Striped Mudsucker	<i>Labeo annectens</i>
Gorge Fish	<i>Barbus trachypterus</i>
Silver Barbel	<i>Schilbe mystus</i>
Golden Barbel	<i>Eutropius banguelensis</i>
Sampa	<i>Heterobranchus longifilis</i>
Sharp-Toothed Barbel	<i>Clarias mossambicus</i>
Blunt- Toothed Barbel	<i>Clarias mellandi</i>
Zebra Squeaker	<i>Cynodontis ornatipinnis</i>
Spotted Squeaker	<i>Synodontis nigromaculatus</i>
Shovelnose Catfish	<i>Chrysichthys platychir</i>
Armoured Catfish	<i>Auchenoglanis occidentalis</i>
Green-Headed Bream	<i>Tilapia macrochir</i>
Red-Breasted Bream	<i>Tilapia melanopleura</i>
Banded Bream	<i>Tilapia sparrmanii</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>
Hump- Backed Bream	<i>Tylochromis bangwelensis</i>
Green Bream	<i>Sargochromis mellandi</i>