

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

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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:

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

18/04/2006

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.

LUANGWA Flood Plains

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 edges of the floodplain of the Luangwa River. This area is wholly protected.

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.

13⁰ 15 S 31⁰ 45 E and 12⁰ 05S and 32⁰ 20 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 Luangwa floodplain covers part of South Luangwa National Park and the North Luangwa National Park to the north-west and the Luambe National Park to the south-east. It also has portions of a number of game management areas within it and these include the Munyamadzi GMA No. 24, the Lumimba GMA No. 21, and the Lupande GMA No. 20. Its administrative town is Mambwe District. The site is located in the Eastern Province of Zambia

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

500 -600m

11. Area: (in hectares)

250,000ha

12. General overview of the site:

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

The wetland stretches the length of eastern Zambia framed by craggy escarpments and sustained by the dynamic Luangwa River. The river has unique features in that it meanders along the valley, flooding seasonally massively on either side of the river, thus resulting into the formation of several Lagoons and Ox-bow lakes, and recharging a lot of springs within the area.

The valley is divided into two parks: the North and South Luangwa National parks. With the combined reach of 25,000 Square Kilometers the two parks encompass a raw wilderness of abundance and diversity. There are over 50 mammal species, including Leopard (*Panthera pardus*), Lion (*Panthera leo*), Hyena (*Crocuta crocuta*), Buffalo (*Syncerus caffer*), and thousands of elephants (*Loxodonta africana*) and hippos (*Hippopotamus amphibius*), as well as many different species of antelopes and other animals.

Over 400 bird species have been recorded, both indigenous and migratory. Some of the water birds include the Egyptian Goose (*Alopochen aegyptiacus*), White faced Whistling Duck (*Dendrocygna viduata*), and African Skimmer (*Rhynchops flavirostris*) which breed on sand bars and whose number may exceed the 1% threshold (Leonard, 2005).

There are vast colonies of *Merops nubicoides* breeding on the sand banks along with *Merops bullockoides* and *Hirundo paludicola*. (Lincoln et al.).

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:

The Luangwa floodplains are representative of the major types of wetlands in Southern Africa, including freshwater streams, lakes and marshes, tree-dominated wetlands, hot springs and brackish cold water springs. There are a variety of habitats that support over 50 mammal species, over 400 bird species and most of the amphibians and reptiles of southern Africa. Along the Luangwa River and its lagoons the vegetation type is dominated by *Berchemia discolor*, *Breonadia salicina*, *Diospyros mespiliformis*, and *Trichilia emetica* which are well established along the relatively older oxbow lakes. The river has unique features in that it meanders along the valley, flooding seasonally massively on either side of the river, thus resulting into the formation of several Lagoons and Ox-bow lakes, and recharging a lot of springs within the area.

Criterion 2:

The Luangwa Floodplains host a number of endangered species, such as the lion (*Panthera leo*) and the elephant (*Loxodonta africana*), which the IUCN Red List classify as vulnerable. The leopard (*Panthera pardus*) is also present at the site (Cites Appendix I) as well as the African wild dog (*Lycaon pictus*) (endangered, IUCN Red List) and the Black rhino (*Diceros bicornis*) (critically endangered, IUCN Red List). Crocodile (*Crocodylus niloticus*) and hippos (*Hippopotamus amphibius*) are present too (Cites Appendix II).

Criterion 3:

The Luangwa valley is home to over 50 mammal species, and the site forms a suitable habitat for large animals. Among these, leopard (*Panthera pardus*), lion (*Panthera leo*) and hyena (*Crocuta crocuta*) are common; buffalos (*Syncerus caffer*) are found in herds of thousands; elephants (*Loxodonta africana*) are everywhere and hippo choke the river in pods a hundred-strong. Thornicroft giraffe (*Giraffa camelopardalis*) and Cookson's wildebeest (*Connochaetes taurinus cooksoni*) are unique species to the area. Over 400 bird species and most of the amphibians and reptiles of southern Africa can be found in the area. Some of the bird species found in the area are detailed in criteria 6 below.

Criterion 4:

Water birds which find refuge at the site include *Mycteria ibis* which has a long standing colony. There are also vast colonies of *Merops nubicoides* breeding on the sand banks along with *Merops bullockoides* and *Hirundo paludicola*. The site also hosts *Creccopsis egregia* and *Porphyrio alleni*. Also present in significant numbers are *Balearica regulorum*, *Rhynchops flavirostris* and *Scotopelia peli*. *Grus carunculatus* is a vagrant while *Gallinago media* winters in small numbers (Lincoln et al).

The Egyptian Goose (*Alopochen aegyptiacus*), White faced Whistling Duck (*Dendrocygna viduata*), and African Skimmers (*Rhynchops flavirostris*) breed on sandbars and their number may exceed the 1% threshold (Leonard, 2005).

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:** Middle Zambezi/ Luangwa Freshwater 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 main arm of the rift valley, which contains Lake Tanganyika and Lake Malawi, passes to the east of Zambia's borders. The Luangwa valley, however, is a minor arm of the rift system. The flat-bottomed valley runs from northeast to southwest and the Muchinga mountain range, which forms the northern escarpment, is a classic well-defined, steep-sloped block fault. The underlying rock of the central African region within which the Luangwa lies produces generally poor soils. However, over a long period of time weathering and erosion have shifted nutrient-rich soils from the East African Rift System down into the Luangwa valley. Thus, the floor of the Luangwa trough is overlain with a bed of fertile topsoil making it flat-bottomed, steep-sided and fertile.

The meander belt of the Luangwa River and its associated floodplains, including the areas transversed by the main tributaries are overlain by alluvial soils. The geological structures modified by fluvial processes of the Luangwa River and its tributaries have resulted into various soil groups. Three major groups characterize the soils of the Luangwa valley:

- Acrisols characterized by deep, fine textures, well-drained soils on the plateau;
- Lithosol-Cambisols, developed over the bedrock of the shallow to medium depth, generally poor in nutrients characterised by stony gravel ridges;
- Fluvial-vertisols are developed over the alluvial complex along the Luangwa River and its tributaries (Sichingabula, 1998).

Hot springs are found around Nsefu and on the base of the Chendeni Hills.

Another key feature of the site is the river that flows through it. The main river that cuts across the proposed site is the Luangwa River. The river has a length of 850 kms and a basin area of 147, 622 square Kilometers. The river originates from the Mufunga hills in the Luangwa -Malawi watershed and later joins the Zambezi. The river has a single peak hydrograph with peak in February / March.

(The Study of National water resources in Zambia. Interim report. Yachiyo Engineering. February 1995).

Unlike a river that flows over a rocky base, this river picks up sand particles and carries them in suspension. Thus when the Luangwa is flowing strongly it has a dark muddy colour, which lightens as the flow decreases and the sand settles.

The sediment-laden flash floods sweep away anything in the river's path and thus prevent effective vegetation growth in the riverbeds; when the waters recede, the dry season stream meanders through wide expanses of bare sand. Without any swamps to regulate the flow, the

river level drops rapidly once the rains have passed and water space becomes minimal during the dry season.

The area experiences three main types of season: wet, cool dry and hot dry seasons. The wet season is from December to March (average rainfall between 400 and 800 mm). Mean annual temperature is 20.6 degrees Celsius while the total evaporation is about 2032 mm/annum. In Luangwa Valley drought occurrence is very high and analysis has shown a 60% occurrence resulting in many of the tributary rivers not flowing throughout the year and even Luangwa River running extremely low during the hottest months or turning into pools during droughts (Sichingabula, 1994, 1995, 1997).

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 Luangwa River in Luangwa valley is fed by a network of rivers originating from east and west of the South Luangwa National Park from the open and Game Management Areas surrounding the park. These rivers include Mupamadzi, Lukuzye, Lubi, Lupande, Matizye, Mushilashi, Kampamba and Manzi. Luangwa River has a drainage area of approximately 73,422km² and a single peak hydrograph which occurs in February/ March each year, reaching mean annual discharge of 128m³s⁻¹.

For the other characteristics of the catchment area, please refer to section 14 above.

18. Hydrological values:

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

Hydrological values are closely linked to the hydrograph, which has a single peak in February/ March. During the peak time the river is responsible for filling up of springs and general flooding in the valley resulting in animal dispersal and soil enrichment from sediments from the river. During the low water times the river is the lifeline of the surrounding animal and bird life.

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.

M-O-L-Tp- Xf - Y-N-Sp

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 main habitat present at the site is that of miombo woodland, which is an evergreen with common species of *Brachystegia*, *Julbernardia* and *Isoberlinia*

The alluvial zone is important also for the riverine vegetation it sustains. The forest that fringes the watercourses offers dense cover, shade and a multitude of delectable fruits that are a source of food for both wildlife and the local population.

Some of the tree species, which make up these forests are the wild mango - *Cordyla africana*, African ebony - *Diospyros mespiliformis*, Fig-*Ficus bussei* and *Ficus sycomorus*, Natal mahogany - *Trichelia emetica* and Winterthorn - *Acacia albida*.

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.*

An interesting or unique tree that is deciduous yet provides winter-feed is the winterthorn, *Acacia albida*. The name is derived from the unusual habit of shedding its leaves during the rains and producing both foliage and fruit during the dry winter. It is a pioneer species, which means that it is quick to colonize recent alluvia. It grows rapidly to gain sufficient stature to survive the next flood. Once established it attracts animals, whose droppings bring the seed of other tree species, which grow under the cover of the acacia.

Others include, *Colophospermum mopane* (found in pure stands), *Acacia tortilis*, *Combretum imberbe* and *Acacia nigrescens*. A rare aquatic plant was recorded by Phiri for the first time in Zambia. This monocot plant, known as *Monochoria africana*, occurs on the seasonal shallow ponds in most parts of the wetland.

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 Luangwa valley is home to large populations of elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), hippo (*Hippopotamus amphibius*), giraffe (*Giraffa camelopardalis*) lion (*Panthera leo*), leopard (*Panthera pardus*), crocodile (*Crocodylus niloticus*), warthog (*Phacochoerus aethiopicus*), puku (*Kobus vardonii*), impala (*Aepyceros melampus melampus*), Zebra (*Equus burchelli*), waterbuck (*Kobus ellipsiprymnus*), bushbuck (*Tragelaphus scriptus*), hyena (*Crocuta crocuta*), kudu (*Tragelaphus strepsiceros*), eland (*Taurotragus oryx*) and various other antelopes. Among the above:

Thornicroft giraffe (*Giraffa camelopardalis*) and Cookson's wildebeest (*Connochaetes taurinus cooksoni*) are unique species to the area. While wild dogs (*Lycaon pictus*), Sable antelope (*Hippotragus niger*), Eland, Hartebeest, and Pangolin (*Manis temminckii*) are rare

species. In fact African wild dogs and Black Rhinoceros (*Diceros bicornis*) are endangered, inclusive of caracals (*Caracal caracal*).

The Luangwa floodplains are also a sanctuary of birds - such as, Carmine bee-eaters (*Merops nubicus* and *Merops nubicoides*), Crowned crane (*Balearica regulorum*), White egret, Pied Kingfisher (*Ceryle rudis*), Ibises (*Threskiornis aethiopicus*, *Plegadis falcinellus*) and herons etc.

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 Luangwa floodplains have a number of historical hot springs within the Luangwa valley. One occurs at the saltpan in the Nsefu sector of the south park. The hot, pure water bubbles up just a few meters apart from another spring, which is cold and blackish. The streams are surrounded by saline deposits, which were valued by the local people in days gone by. The local communities also work with companies that hold hunting concessions in the game management areas and from these they derive some income and game meat. Fishing is done in the areas of the proposed site that are outside the National Parks but within the game management areas.

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 South Luangwa National park - protected area – is owned by the state. Game management areas (GMA) are open to the chief's jurisdiction and they allocate land to their subjects. This land is said to be under customary rule. However, for land that falls within the district Councils they have a role to play as they control much of the land.

25. Current land (including water) use:

a) Within the Ramsar site: and

South of the Luangwa floodplains the area has been opened up to Tourism activity, as evidenced by a number of private lodges existing in Luangwa floodplains as listed below.

- Chichele lodge
- Mfuwe lodge
- Chipembi lodge
- Kapani lodge
- Nsefu Camp

There is little cultivation; one of the reasons is interference from wild animals which destroy much of the crops once cultivated. Since most of the villagers are critically dependent on the crops they grow of which the most significant are the grains either maize or sorghum.

b) In the surroundings/catchment:

In the surrounding areas most of the areas have subsistence cultivation activities by communities as well as wildlife management in the GMAs

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: and

In the past, poaching was at its height, serious killing commenced in 1975 and as the wetland slid towards disaster a group of private individuals established the Save the Rhino Trust (SRT), dedicated not only to saving the Luangwa's rhino population but to combating poaching in general.

Other factors affecting the site's ecological character are the elephant population. The elephant population had thrived to such an extent that (coupled with their inefficient feeding habits) they have massively destructive impacts on the vegetation especially the mopane woodland. This has led to the degradation of woodland areas.

The site has illegal fishing and snaring and large scale poaching remains a problem in the remote areas (eg upstream the site), the other problem is the invasive species that is present in many of the Oxbow lakes. This is the Nile Cabbage (*Pistia stratiotes*) (Leonard, 2005).

b) In the surrounding area:

Factors here also include:

1. Illegal snaring as well as fishing as well as
2. Land use problems mainly agriculture and large settlements which affect wildlife movement and result in conflicts with wildlife (especially the elephant).

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 site includes portions of South Lwangwa National park as well as the GMAs around the park. The site is therefore fully in protected areas. The boundary follows the floodplain.

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?:

General Management plan for South Luangwa National Park and Surrounding Game Management Areas (GMAs). This plan has been devised by Zambia Wildlife Authority (ZAWA) whose main objectives are:

- To redefine the existing fire policy and ensure its implementation
- To ensure strong law enforcement against illegal off take of wildlife resources
- To maintain the diversity and abundance of indigenous species of fauna and flora in its natural form
- To ensure the protection of the Luangwa river system against degradation of catchment areas, harmful tourism activities, uncontrolled and illegal utilization of natural resources.
- To ensure improved research and monitoring of key ecological issues i.e. wildfires, vegetation change, catchment systems etc.
- To maintain pristine conditions of springs, fossils, petrified forests to maintain a policy of low volume, high quality tourism in the Luangwa valley.

d) Describe any other current management practices:

28. Conservation measures proposed but not yet implemented:

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

The measures undertaken in the General Management Plan are not fully implemented and will need further support and implementation

29. Current scientific research and facilities:

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

A regional plant collecting Expedition to the South Luangwa and Nyika plateau has been undertaken by Southern African Botanical Diversity Network (SABONET).

This expedition took place in 2000, and altogether 3,343 plant numbers were collected. Following the expedition a compilation of the Southern African Plant Red Data Lists was completed in 2002 by Janice S Golding.

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.

The South Luangwa Management Unit (SLAMU) formerly Lwangwa Integrated Rural Development (LIRD) has put in place community environmental education programs in which they educate local community, especially on the importance of the wetland - (Luangwa floodplains) and other environmental issues. This is done through sketches, plays, and song and dance (preferably in vernacular Languages).

Chipembele Wildlife Education Centre is located on the banks of the Luangwa River opposite South Luangwa National Park. The site and surrounding area abounds in wildlife. The Center caters mainly for local school children (though children from further places are welcome) and aims to teach them about their environment, the wildlife that surrounds them and how to conserve it.

The Centre comprises a classroom, library, office and large Interpretive Room full of exhibits, posters, information sheets etc, concerning all aspects of the National Park and surrounding Game Management Areas. There are displays on:

- Geography. Geology, Climate, History
- Wildlife
- Tourism
- Hunting
- Community Based Natural Resource Management
- Zambia Wildlife Authority and Community Based Scouts
- Environmental problems

Children from local schools are transported to the Centre two times per week where they partake in a Programme, which includes the following:

- lessons
- wildlife
- Artwork and project work
- Guided bush walk
- Visit to the interpretive room
- Quizzes and competitions.

Other conservation activities include the Chongololo club within schools in the surrounding areas and the Nyamaluma African College- which deals with training scouts as well as turning poachers into legal hunters.

31. Current recreation and tourism:

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

The Zambia Wildlife Authority (ZAWA) administers the park and the Tourism operations are franchised out to private enterprise. The majority of tourists fly in for a fully chartered visit. There are a number of camps and lodges situated just outside the park and within its boundary.

Tourist infrastructure in the South Luangwa Game Reserve has developed as a number of camps (old and new) and lodges have been established.

1. Chichele lodge
2. Chibembi lodge
3. Mfuwe lodge

4. Kapani lodge
5. Nsefu camp
6. Flat dogs camp

32. Jurisdiction:

Implementation of the Wetlands Policy housed under the Ministry of Tourism Environment and Natural Resources (MTENR) is executed by 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.

Chabwela H N Weza 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

Important Bird Areas in Africa and associated islands, Priority sites for conservation. Edited by Lincoln D.C. Fishpool and Michael I Evans). Birdlife Conservation Series No. 11.

Jachmann H (2000); Zambia's Wildlife Resources: A brief Ecology

Leonard Peter, (2005) Important Bird Areas in Zambia, Birdlife International

Mike Coppinger & Jumbo Williams (1998) Luangwa Zambia's Treasure.

Vincent Carruthers (ed.), (1997): The Wildlife of Southern Africa A field guide to the animals and plants of the region Southern Book Publishers (Pty) Ltd. -Western Cape, South Africa.

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