Ornithological SOCIETY

BirdLife INTERNATIONAL

2009 IBA STATUS AND TRENDS REPORT, ZAMBIA

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BirdLife IBA IMPORTANT BIRD AREA

UNITED NATIONS DEVELOPMENT PROGRAMME

GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

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DISCLAIMER

This status report has been produced with financial assistance of the European Union (Europe Aid/ENV/2007/132-278). However, the contents of this document are the sole responsibility of BirdLife International and the Zambian Ornithological Society (ZOS) and can under no circumstances be regarded as reflecting the position of the European Union.

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Pic. 1: Water Bird Count at Huntley Farm, Chisamba IBA

PHOTO CREDIT

	Photo Caption	Photographer
Front Cover	*Martial Eagle Polemaetus bellicosus*	*Manfred Wichmann*
Back Cover	*Lesser Jacana Microparra capensis*	*Manfred Wichmann*
Picture 1	*Water bird count*	*David Ngwenyama*
Picture 2	*A community bird guide in action*	*Kelvin Mkandawire*
Picture 3	*Fishermen headed to Chunga Lagoon, Lochnivar NP*	*Kelvin Mkandawire*
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Picture 5	*Poachers' foot print (Mutulanganga)*	*Moses Nyoni*
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Picture 7	*Field team orientation exercise*	*Kelvin Mkandawire*

LIST OF ACRONYMS

AWF	African Wildlife Foundation
BLAPS	BirdLife Africa Partnership Secretariat
BR	Biome Restricted
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CRB	Community Resource Board
DoF	Department of Fisheries
ECZ	Environmental Council of Zambia
EC	European Community
FD	Forestry Department
FZS	Frankfurt Zoological Society
GEF	Global Environmental Facility
GIC	Globally Important Concentrations
GMA	Game Management Area
GT	Globally Threatened
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
MTENR	Ministry of Tourism, Environment and Natural Resources
NP	National Park
NGO	Non Governmental Organization
N/LF	National/ Local Forest
NM	National Monument
PO	Privately Owned
RR	Range Restricted
RSPB	Royal Society for the Protection of Birds
SPR	State Pressure Response
SSG	Site Support Group
U	Unprotected
UNDP	United Nations Development Program
WWF	World Wide Fund for Nature
ZAWA	Zambia Wildlife Authority
ZOS	Zambian Ornithological Society

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the National Biodiversity Monitoring of Protected Areas/Important Bird Areas. The monitoring exercise was conducted in 28 of the 42 Important Bird Areas of Zambia during the period November 2009 to July 2010. The exercise represents 67% coverage across the country and a rise in coverage from 38% for the 2008 reporting period.

Threats

The list below provides a summary of the major threats to Zambiaôs Important Bird Areas (IBAs) in 2009.

Table 1: Major IBA threats in Zambia

#	Threat Type	Affected IBAs (%)		
			2008	*2009*
1.	Agricultural expansion and intensification	Shifting agriculture	63	38
		Small holder farming	50	27
		Agro-industry farming	32	8
		Small holder plantations	25	8
		Livestock farming and ranching	44	23
		Small holder grazing and farming	44	23
		Fresh water aqua culture expansion	31	8
2.	Residential and commercial development	Housing and urban areas	44	12
		Commercial and industrial areas	31	>5
		Tourism and recreation areas	38	15
3.	Energy production and mining	Mining and quarrying	31	>5
4.	Over-exploitation and persecution of species	Hunting and trapping of bird species leading to direct mortality of bird species	50	23
		Persecution of species	31	19
		Hunting and fishing activities leading to indirect mortality of trigger species	69	19
5.	Invasive species	Invasive problematic species	25	4
6.	Pollution	Domestic and urban water pollution	19	12
		Industrial effluents	19	4
		Agricultural and forestry effluents and practices	25	4
		Garbage and solid waste disposal	19	4
		Air borne pollutants	31	4
7.	Climate change and severe weather	Habitat shifting and alteration due to climate change	44	15
		Droughts	50	19
		Abnormal temperatures	56	8
		Floods	50	12

It is noteworthy from the summary table above that the major threats with the highest impact on the protected areas/IBAs are related to natural system modification, human encroachment, agricultural activities and climate change. This is consistent with the fact that most of the IBAs covered in this report are largely found in rural areas where agriculture and natural resource extraction are the main livelihood activities. Local and

...birds, ...t that is often not reported and goes unchecked largely due to weak law enforcement structures and mechanisms.

Overall Status and Trends of IBAs in Zambia

The results of the 2009 monitoring exercise show a marked reduction in the percentage of IBAs impacted by the major threat categories compared to 2008. This is a welcome development although it may well be a reflection of the increase in sample size rather than an improvement in response to and management of pressures and threats. For most of the IBAs monitored in 2008, the situation in the 2009 reporting period remained largely unchanged. Sioma Ngwezi National Park still suffers from high rates of deforestation and poaching while Mosi-Oa-Tunya/Batoka Gorge IBA has increased levels of noise pollution and habitat loss due to expansion of tourism activities. Kafue Flats IBA, especially Lochnivar National Park, is heavily infested with the highly invasive alien plant *Mimosa pigra*. This species poses a serious threat as it is taking over habitats preferred by bird life.

The results of the monitoring program show that agricultural expansion and intensification remains a major threat while over-exploitation and persecution of species and climate change represent the other major threats. Direct mortality of species caused by hunting and trapping is a threat in 23% of the IBAs. Other threats show an increasing trend as well.

Management and conservation interventions or responses have increased in most of the National Parks and conservancies. Notable in this area is the establishment of the Chikuni Community Partnership Park, a new form of protected area, in the Bangweulu Swamps IBA and at the heart of the Zambian Shoebill population. However, some localized threats have increased in intensity such as deforestation and forest reserve encroachment in Mutulanganga and Chisamba IBAs. In 2009 as in 2008, there is still a lot of work that needs to be done to raise the profile and protection of birds and bird habitats in Zambia.

Pic. 2: A Community Bird Guide explaining aspects of birding, Chisamba IBA

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The Zambian Ornithological Society (ZOS) has been carrying out a biodiversity monitoring program in Zambiaôs network of Protected Areas (PAs)/Important Bird Areas (IBAs) since 2008. This exercise is part of the European Commission funded BirdLife Africa biodiversity monitoring project in which 8 countries are participating. These are; Botswana, Burundi, Ghana, Kenya, Tunisia, Uganda Zambia and Zimbabwe. The main goal of the current monitoring exercise was to assess the performance of Zambiaôs network of IBAs. The program was aimed at assessing the state or status of the IBAs and identifying pressures and threats including the severity of these threats. In addition, the monitoring exercise was meant to document management or conservation interventions or responses throughout the network.

1.2. Objectives

The overall object of this report is to provide an overview of the status and performance of the IBA network in Zambia as a basis for targeted interventions. Specific objectives are to:

- Document the trends and current status/ state of selected IBAs;
- Identify underlying threats/pressures to IBAs and their severity;
- Document conservation actions/interventions on sites;
- Recommend possible interventions and conservation actions to address identified threats.

1.3. Monitoring Important Bird Areas

1.3.1. What are Important Bird Areas (IBAs)?

Important Bird Areas are areas that have been identified as critical to the conservation of birds and meet the criteria and standards for designation as such. The criteria ensures that there is international consistency in the selection of sites and provide data to assist in advocating for the protection of the sites.

A site is designated as an IBA only if it meets certain criteria based on the occurrence of key bird species that are vulnerable to global extinction or whose populations are otherwise irreplaceable. Ideally each IBA should be large enough to support self-sustaining populations of as many as possible of key bird species for which it was identified or, in the case of migrants, fulfills their requirements for the duration of their presence. Each site may have different species of birds.

1.3.2. Aims of the IBA Program

The aim of the IBA program is to identify and protect a global network of sites critical for the long-term viability of naturally occurring bird populations using these criteria. This network of sites also aims to provide a basis for the conservation of all species of fauna and flora (the biodiversity) found in those sites. The criteria used are as follows:

1. Presence of species of global conservation concern;
2. Presence of assemblages of restricted range species;
3. Presence of assemblages of biome restricted species;
4. Presence of globally important congregations.

IBAs are thus Important Biodiversity Areas. BirdLife International partnership in many countries has gone beyond site identification and includes conservation, advocacy and site protection of IBAs.

The IBA program is coordinated by BirdLife International (BI). The program began in 1985 in Europe. It then spread to the Middle East in 1989 and to Africa in 1993. 1230

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ntries and partners continue to do research and designate more sites.

In Zambia, 42 sites have been designated as IBAs with 17 partially or entirely within National Parks, 8 are Local or National Forest Reserves, 7 are privately owned conservancies and 10 have no formal protection status.

In terms of species richness and importance, 38 hold Globally Threatened Species, 5 hold Range Restricted Species, 12 hold Globally Significant Congregations and all 42 hold Biome Restricted Species. Leonard (2005) Important Bird Areas in Zambia book provides a comprehensive description of the network of IBAs in Zambia.

ZOS works with local community groups and partners around IBAs to promote site level actions. Key partners include ZAWA, Site Support Groups (SSGs), IBA schools and conservation NGOs working in Zambia. ZOS currently works with 14 SSGs representing 15 IBAs. The SSGs are found in the following IBAs;
Blue Lagoon, Chimfunshi, Chisamba, Imanda, Jimbe, Machile, Mutinondo, Mutulanganga, North Swaka, Simungoma, Sioma Ngwezi, Wonder Gorge and Zambezi Source/Chitunta.

The SSG and IBA schools program spearhead site level actions.

In Zambia the IBA network represents the most extensive representation of ecosystems and habitats of any protected area system in the country and at the moment, biodiversity monitoring is being effected in 28 of the 42 IBAs.Fig.1 below provides the distribution of IBAs in Zambia.

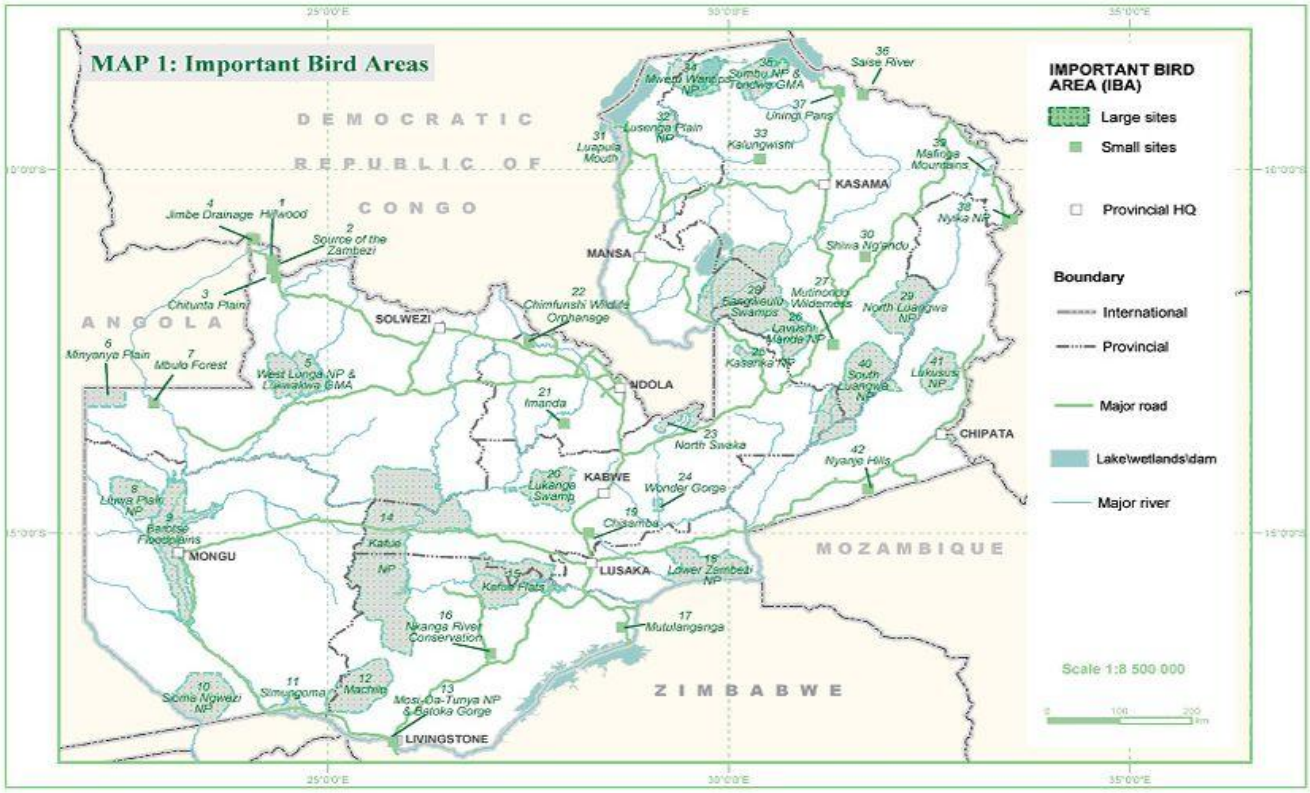


Fig. 1: Distribution Map of IBAs in Zambia.

ed on the BirdLife International IBA monitoring framework. Monitoring teams in each of the target IBAs were oriented to data needs of the exercise before being trained on how to fill in the data form. Data forms were then distributed to individuals and teams in each target IBA with completed forms mailed back to ZOS for analysis.

2.1. The IBA Monitoring Framework

Monitoring is the repeated collection of information over time, in order to detect changes in one or more variables. In undertaking the monitoring program in IBAs, five key questions were raised. These were;

1. Why monitor?
2. What should we monitor?
3. How should we monitor?
4. Who should monitor?
5. What happens next?

The importance of monitoring IBAs cannot be over emphasized as IBAs are internationally recognized as important sites for biodiversity conservation. There is need therefore to understand factors at play in each IBA in order to institute conservation interventions.

At site level, IBA monitoring is aimed at:

1. Detecting and acting on threats in good time. Monitoring data provides the basis for advocacy and other management interventions.
2. Assessing the effectiveness of conservation efforts. Is investment in conservation actually bringing about any improvements?
3. Expanding and updating site data including, where necessary, the identification and mapping of site boundaries.
4. Catalyzing the formation of new site support groups and growth of existing ones.
5. Providing information on national biodiversity trends and feed directly into reports for the Convention on Biological Diversity (CBD). It also allows the impacts of economic and environmental policies that affect more than one IBA to be assessed.
6. Reviewing the IBA network. Do all sites continue to meet the criteria for which they were listed? Do other sites now qualify under additional criteria?
7. Providing opportunities for Partners to establish and strengthen stakeholder networks.
8. Raising awareness of the biological and socio-economic values of the national IBA network and the threats to them, by tapping into the increasing engagement of civil society in conservation issues. Despite global recognition of the importance of biodiversity, its monitoring has been difficult due to limited capacity.

monitored:

...09

IBA Site Codes	IBA Names	IBA Site codes	IBA Names
1	Hillwood	20	Lukanga Swamps
2	Zambezi Source	21	Imanda
3	Chitunta Plain	22	Chimfunshi Wildlife Orphanage
4	Jimbe Drainage	23	North Swaka National Forest Reserve
5	West Lunga National Park	24	Wonder Gorge
10	Sioma Ngwezi National Park	25	Kasanka National Park
11	Simungoma	26	Lavushi Manda National Park
12	Machile	27	Mutinondo Wilderness
13	Batoka Gorge- Mosi-Oa-Tunya National Park	28	Bangweulu Swamps
14	Kafue National Park	29	North Luangwa National Park
15	Kafue Flats	30	Shiwa Ng'andu
17	Mutulanganga	40	South Luangwa National Park
18	Lower Zambezi National Park	41	Lukusuzi National Park
19	Chisamba	42	Nyanje Hills

Basic biodiversity monitoring was carried out for all target sites and the selection criteria used was the presence of an established Local Conservation Group/Site Support Group (LCG/SSG) or a conservation partner.

A standard data collection form was used with at least five data sheets and monitors per site. The monitoring program followed the Pressure-State-Response model.

2.2. *The State –Pressure – Response Model*

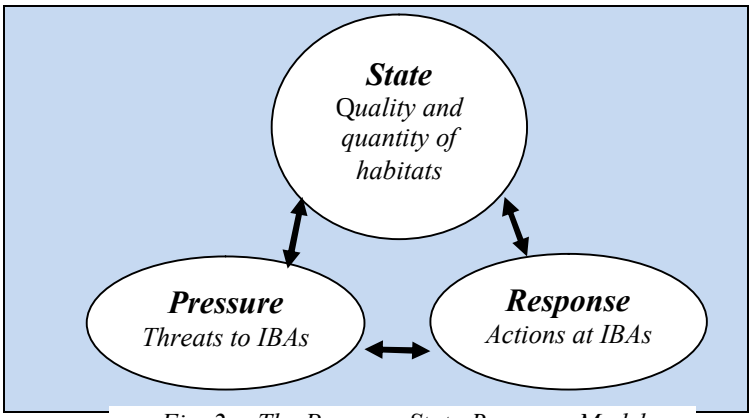


Fig. 2: The Pressure-State-Response Model

2.2.1 Pressure

Pressure indicators identify and track the major threats to important bird populations at IBAs. Examples include rate of agricultural expansion, over-exploitation of natural resources and pollution.

of the site with respect to its important bird populations, quality and quantity of the respective habitat. State indicators might be population parameters of selected birds species or a measure of the extent and quality of the habitat required by the respective species.

2.2.3 Response

Response indicators identify and track management and/or conservation actions or interventions. These may include; changes in conservation designation, implementation of conservation projects, establishment and engagement of local institutions such as Site Support Groups in monitoring and conservation of IBAs.

2.3. Sources of information

For the purpose of this exercise, the sources of information were local residents and employees of various institutions operating in the area for an extended period of time. Additional sources included regular visitors to the IBA.

2.4. Data analysis and Presentation

Data analysis consisted of summarizing scores from the Pressure-State-Response model and assessing the highest impact entries. Summaries on state and trend data were computed using current scores which were in turn compared with the 2008 data.

2.5. Caveats on use of results.

The results in this status and trends report are based on observations by individuals in the field. While every effort was made to ensure that individual and team observations were consistent, this is not 100% "fool proof" as such, use of results herein should take this into account. The reported results are a generalization of individual observations.

3.0. RESULTS

3.1. Summary of Status and Trends for 2009.

3.1.1. Threats

The graph below summarizes threats to IBAs in Zambia for the reporting year, 2009

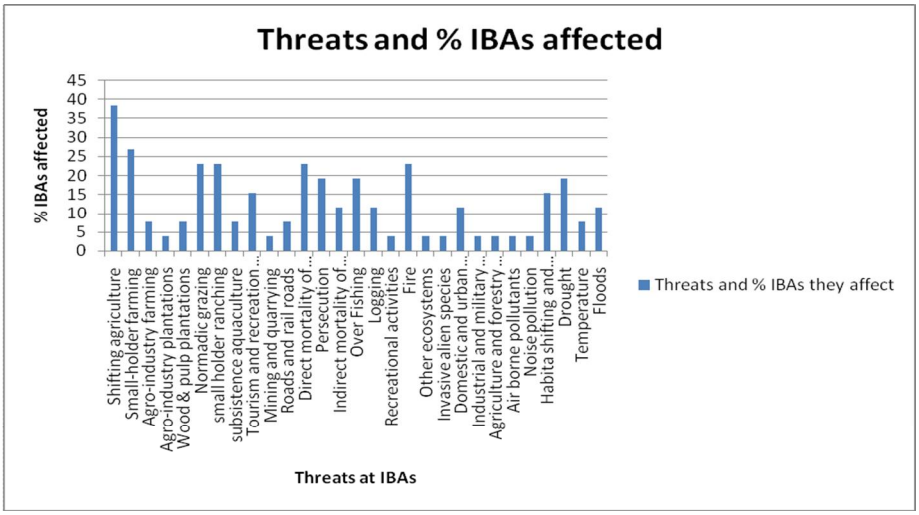


Fig 3: Summary of threats to IBAs in Zambia

The most significant threats are related to agricultural practices with shifting cultivation affecting a higher number of IBAs. Other threats include; livestock grazing, fire and human intrusions and disturbances leading to direct mortality of

...ed to ...se in land clearing and land preparation. Other notable threats included drought, persecution of bird species, over fishing, tourism expansion, habitat shifting and logging operations

3.1.2. State

Figure 4 below shows IBAsô current status with National Parks having the highest site condition score or best performance overall.

Habitat quality and size in National Parks has not significantly altered in the last one year.

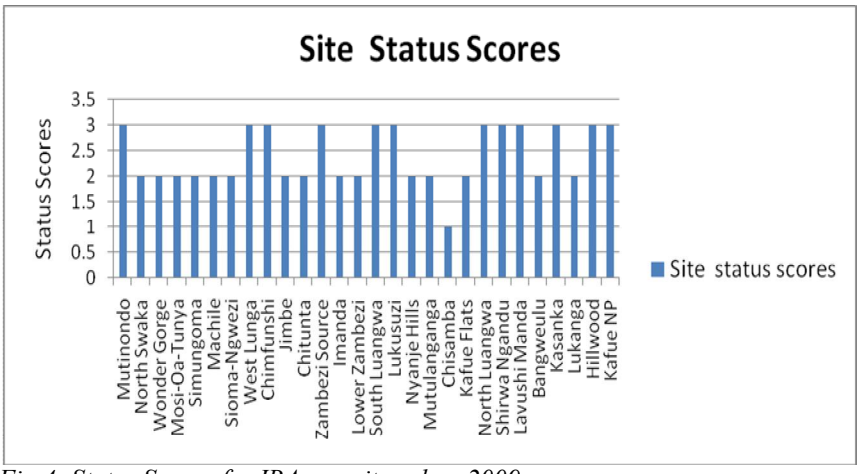


Fig 4: Status Scores for IBAs monitored on 2009

3.1.3. Response

Figure 5 provides a summary of the overall response at selected IBAs. According to the 2009 monitoring, 11 IBAs show highest response level. Six (6) of these are protected areas under the NPs protection system managed by ZAWA, four (4) are private conservancies and one (1) is a National Heritage site under management of the National Heritage Conservation Commission.

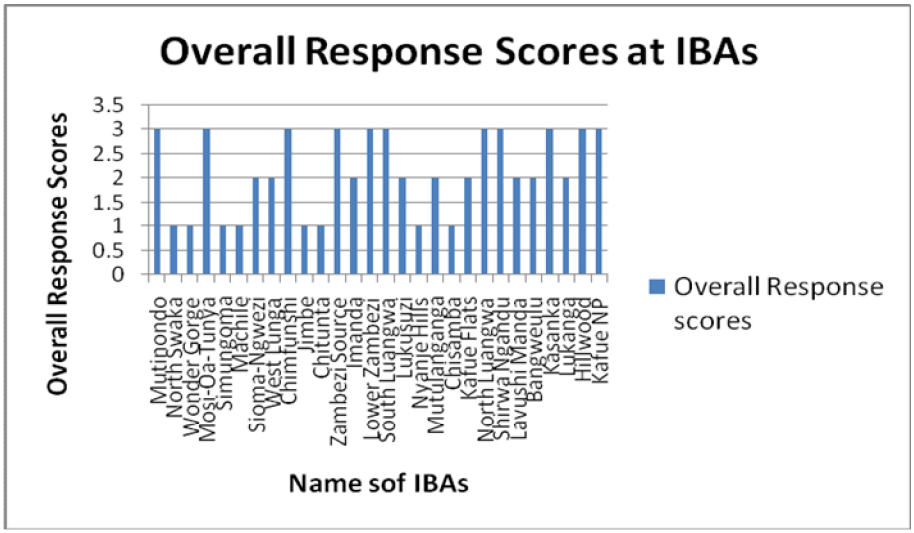


Fig.5: Overall Response Scores

clude
eness, advocacy, management planning, training of community bird guides, wildlife law enforcement by Wildlife Police Officers, Village Scouts and Community Resource Boards (CRBs). In Shiwa Ngôandu IBA for instance, responses to threats included removal of invasive alien plant species and law enforcement.

3.1.4. Proposed Actions for Conservation

- Domestication of the IBA concept in the protected area system.
- Branding of all IBAs to build public awareness on the importance of IBAs as key biodiversity areas.
- Engaging local community members in managing and conserving their resources.
- Sensitization of communities on environmental and conservation related issues.
- Encourage and support sustainable alternative livelihoods such as avian tourism, aquaculture and traditional hand crafts.
- Late fires and uncontrolled bush fires are among major threats to biodiversity in IBAs/PAs. Fire management at site level need to be developed and implemented.
- Water resources management
- Implementation of land use management plans in collaboration with site support groups and other relevant partners.
- Lobby for addition of some of the IBAs to the protected areas system

3.2. Status and Trends

Figures 6 and 7 below illustrate in comparative terms pressure and response trends for the monitoring years 2008 and 2009.

Sites monitored in 2009 had increased pressure while the state of the habitats in terms of size remained unchanged. Sioma Ngwezi IBA for instance still exhibits high rates of deforestation and poaching while Kafue flats IBA is threatened mainly by infestation of an Alien Invasive plant species viz. *Mimosa pigra*.

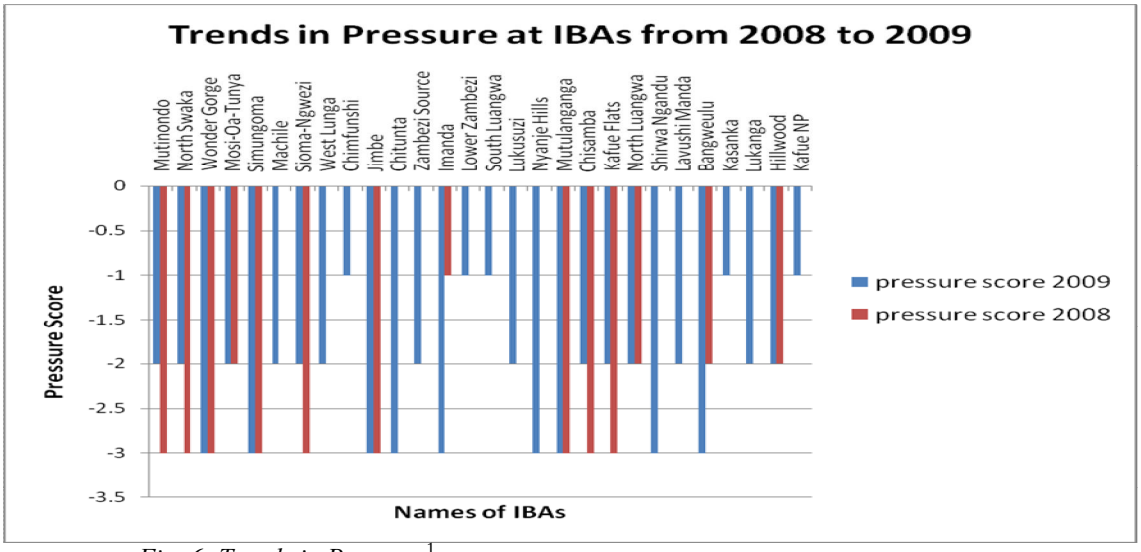


Fig. 6: Trends in Pressure [1]

[1] *Lochnivar and Blue Lagoon National Parks make up the Kafue Flats IBA*

...sures ...itored during 2008 and 2009 monitoring programs, the graph shows improvement in pressures between the two reporting years.

It is noteworthy from the graph that pressure, in some IBAs such as Mutinondo, has reduced. This site has progressed from very high pressure (score of -3) in 2008 to high pressure in 2009 (score of -2). This is attributed in part, to environmental education and advocacy on the importance of birds as well as anti-poaching activities currently being implemented by the Site Support Group. The SSG in Mutinondo is currently working towards reforming ex-poachers by engaging them in anti-poaching activities, safari guiding and small scale farming. The SSG has developed a community owned camp site and manages crop fields. These initiatives provide ex-poachers with alternative livelihoods.

Similar reductions in pressure on other sites such as North Swaka and Chisamba IBAs have been observed. These are also attributed to vibrant local conservation groups (SGGs) on site coupled with increased environmental education and awareness.

The reported reduction in pressures for Chisamba IBA is particularly significant as it relates to the Zambian Barbet (*Libius chaplini)*, the only bird species endemic to Zambia. However, proximity of Chisamba IBA to Lusaka city coupled with increase in city population and demand for charcoal is more likely to increase pressure on the IBA. Opportunities for increased protection of this IBA and the Zambian Barbet lies in the fact that a bigger proportion of the IBA (77%) consist of private owned commercial farms and the known range for the Zambian Barbet falls within commercial farms.

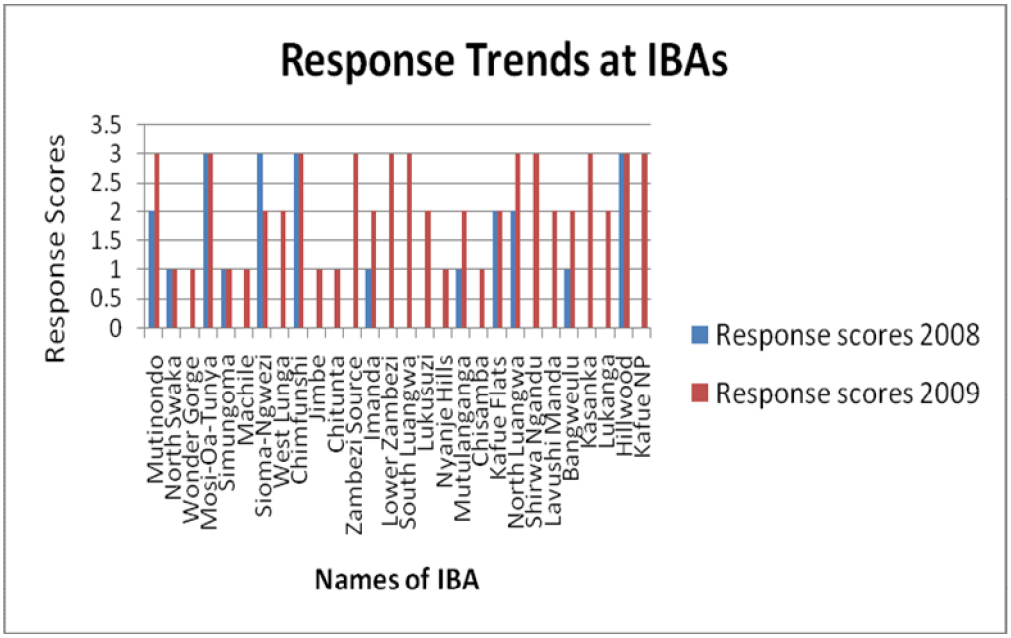


Fig. 7: Trends in Responses

The figure 7 above shows that responses increased in some IBAs from Low and very Low in 2008 to Medium and High in 2009. This is the case for IBAs such as Mutinondo, Imanda, North Luangwa and Mutulanganga. Key responses include; Environmental education and awareness, frequent patrols by Community Scouts, Monitoring of sites with focus on habitats

...d the ...stems such as Ecotourism and craft. In Mutulanganga IBA for instance, implementation of a project under funding of the Global Environmental Facility (GEF) in collaboration with ZOS and the community of Mutulanganga has resulted in local communities appreciating their natural resources more than they used to and have thus been actively involved in site monitoring and management. In Imanda IBA, the increase in response from Low in 2008 to Medium in 2009 can be attributed to direct involvement of the royal traditional establishment, development and administration of policies governing access and use of natural resources in the area.

IBAs managed by ZAWA have continued to exhibit higher levels of response than other IBAs.

Some IBAs are represented only by a single bar and do not show any trends pattern because there were no monitoring activities at these sites before 2009. In some IBAs, responses were not recorded.

3.3. Overall Pressure/ Threats

The figure below shows pressures on protected areas (PAs)/ IBAs.

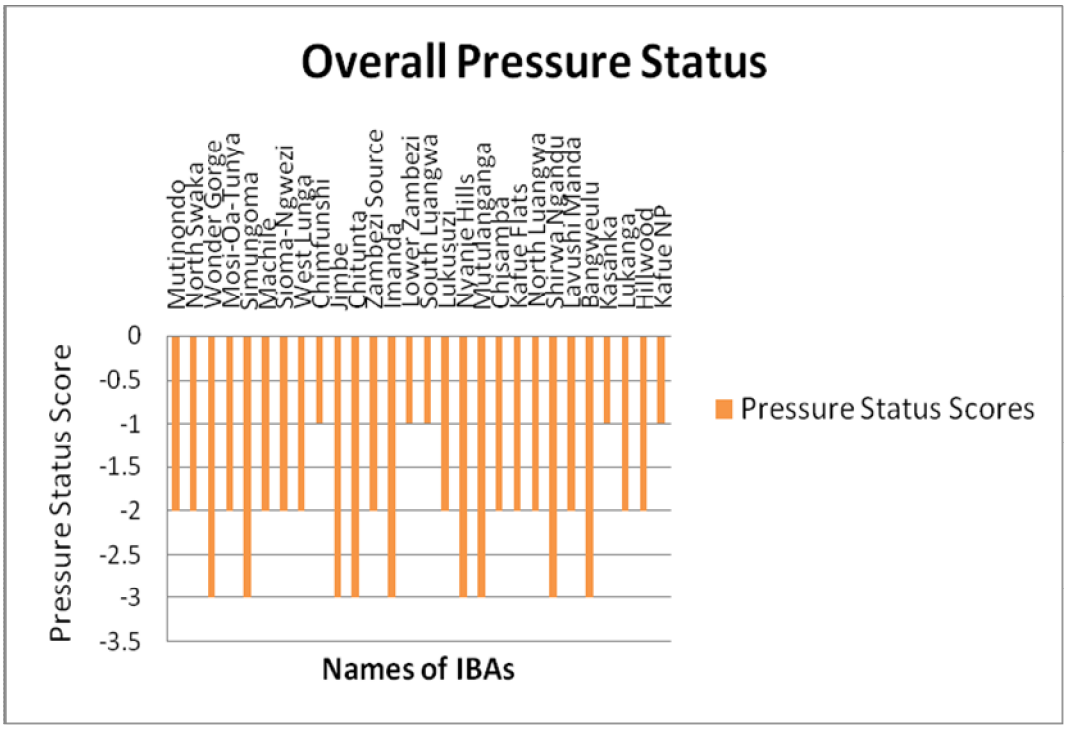


Fig. 8: Overall Pressure Status

Out of a total of 28 IBAs monitored during this reporting period, 10 IBAs had the highest pressure scores. These are Bangweulu, Shiwa Ngôandu, Lochnivar (Kafue Flats IBA), Mutulanganga, Nyanje Hills, Imanda, Chitunta Plains, Jimbe Drainage, Simungoma, and Wonder Gorge. Based on the ñweakest link approachò the worst case indicator score gives the overall score of the IBA. Threats scoring very high therefore give the overall score and they may affect trigger species. In Bangweulu IBA, human intrusion is the most significant threat. Indirect mortality due to fishing

birds IBA. Collection of eggs and disturbance to breeding sites are some of the examples of human intrusion.

3.3.1. Overall Response

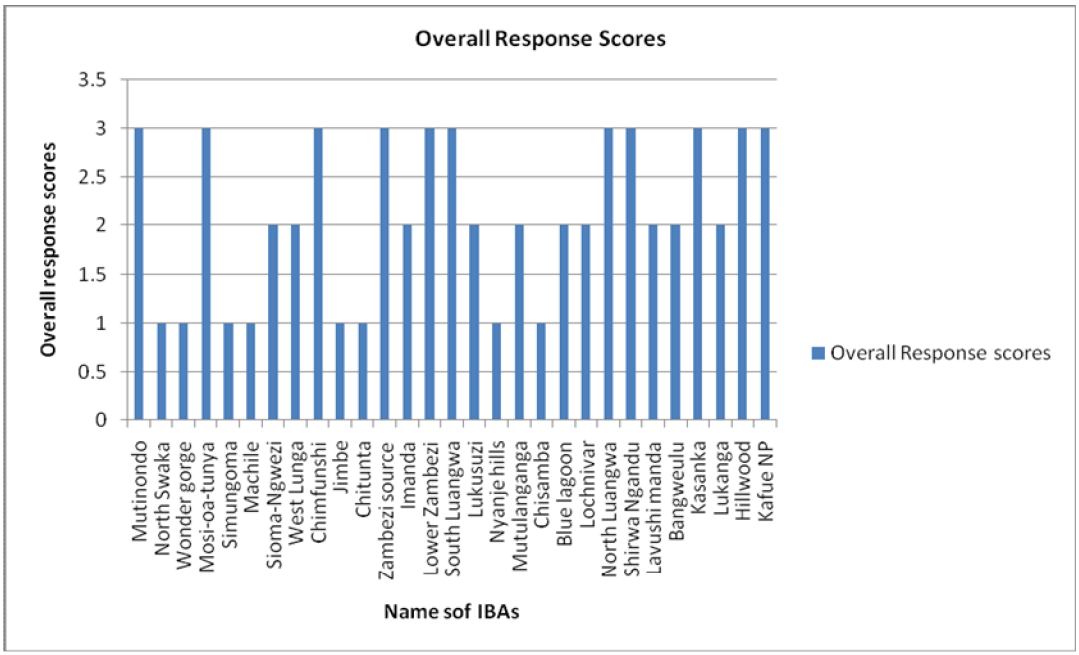


Fig. 9: Overall Response Scores

Figure 9 above illustrates the overall responses to the pressures associated with IBAs monitored during this reporting period. For instance, Kasanka Trust has been engaging community members in monitoring of the breeding of the iconic Shoebill *Balaeniceps rex*. Community members are paid K300, 000 ($62) to guard each Shoebill nest with eggs to ensure that the site is undisturbed until successful hatching and survival of chicks occurs. Further to the foregoing, Kasanka Trust also trained Village Scouts who work in collaboration with ZAWA. Furthermore, the Trust is developing land use plans for the Game Management Area

As a response strategy, the Kafue National Park, northern sector engages school pupils and community members in various activities which include; monitoring, wild fire fighting and anti-poaching.

3.4. Results by protection status

3.4.1. Protected IBAs

Zambiaôs protected IBAs fall under five (5) categories. These are; National Parks (NP), Game Management Areas (GMA), National and Local Forests, Private Conservancies and National Heritage Sites. Out of Zambiaôs 42 IBAs, seventeen (17) are National Parks, six (6) are GMAs, seven (7) are Private Conservancies/Estates, eight (8) are either Local or National Forests and four (4) are National Heritage Sites. The four (4) Heritage Sites fall within the above mentioned category of IBAs.

Lower Zambezi, South Luangwa and Mosi-Oa-Tunya National Parks have large numbers of elephants and other herbivores

...bitats a lot of habitat destruction by knocking down and stripping trees to feed.

In Lochnivar National Park (*Kafue Flats IBA*), fishermen occasionally sneak into the park not only for fishing but for trapping of water birds as well. This shortcoming has been amplified by the presence of a harbor at Chunga lagoon. ZAWA was however working towards addressing the situation.

Pic. 3: Fishermen transporting fish to Chunga harbor.

3.4.2. *Unprotected IBAs*

20 of 42 IBAs are either unprotected or partially protected. According to 2009 monitoring program, shifting agriculture, charcoal production, poaching, over fishing, deforestation, over grazing and pollution from agricultural chemicals were found to be amongst the most prevalent threats. Climate change and extreme weather conditions have also affected most of these sites with Machile and Simungoma IBAs being the most affected.

3.5. Results by habitat type

3.5.1. Forested IBAs

There are eight (8) forested IBAs in Zambia. These are; Mutulanganga, Source of the Zambezi, Jimbe Drainage, Simungoma, Chisamba, North Swaka, Mafinga Mountains and Nyanje Hills.

In some NPs and GMAs, human settlements have mushroomed leading to significant deforestation and poaching of birds and other wildlife. Collection of eggs; especially of large birds such as ducks and Guinea fowl is also prevalent.

Invasive plant species are also a threat in IBAs such as Kafue Flats (*Lochnivar NP and Blue Lagoon NP*) and Mosi-Oa-Tunya/ Batoka Gorge IBAs. In Lochnivar NP infestation of *Mimosa pigra* was expanding rapidly with an area of 2,900 hectares having already been infested.

Pic. 4: Mimosa pigra - Lochnivar

In Mutulanganga Forest, a logging concession for 5,000 hectares of pure stands of Mopane trees *Colophospermum mopane* was on the verge of being awarded to Chinese investors. In addition, poaching of wildlife and birds was also high in this IBA. In addition to threats of poaching, Mutulanganga IBA is also heavily threatened by soil erosion.

Besides working with ZAWA on anti-poaching campaigns, ZOS was working with the local community of Mutulanganga to provide alternative but sustainable livelihoods.

Pic. 5: Poachers' foot print - Mutulanganga

In Simungoma IBA, the Forestry Department at Sesheke District Office has been implementing awareness programs focusing on the impact of charcoal production and deforestation. The role of traditional leaders (*Silalo Indunas*) was very critical. In this IBA, logging and saw milling of Zambezi teak *Baikiaea plurijuga* was a great concern.

The IBA is endowed with *Kori Bustards*, *Burchell's Sandgrouse* and a lot other grassland birds. Unfortunately, over grazing and late bush fires were rampant.

3.5.2. *Woodlands IBAs*

In woodlands IBAs, large scale charcoal production was being pursed as a livelihood and resilience system for surrounding local communities and those in nearby towns. Apart from the threat of charcoal burning, these IBAs were also characterized by wild and unplanned fires especially in the dry season. These fires result in habitat change or alteration. Besides, timber production and saw milling; particularly in IBAs in the south-western part of the county was common.

3.5.3. Wetlands IBAs

Wetlands are important breeding grounds for fish and water birds. Wetlands IBA are general rich in biodiversity. Besides, wetlands were key habitats for congregational water birds and wintering sites for both migratory and other resident bird species. A wide diversity of species of reptiles and mammals also depend on and use wetlands for habitation.

In 2009, the monitoring program included IBAs that were partially covered by wetlands or large dambo. Such IBAs include; Lower Zambezi NP, Kafue NP, Kafue Flats, Lukanga and Bangweulu Swamps.

Bangweulu Swamp IBA is home to the iconic Shoebill *Balaeniceps rex* and the endemic Black Lechwe *Kobus leche smithiarmani.* This IBA consist of a newly established Community Park viz. Chikuni Community Park, several GMAs and open areas. Due to the IBAôs rich endowment with large mammals and birds, poaching has become a serious threat. Consequently, ZAWA, WWF, Peace Parks Foundation and other partner organizations have started engaging communities and researchers on conservation actions to protect key species and their habitats.

3.6. Specific threats & IBAs

3.6.1. Agricultural Expansion

38.5% (10 of 26) of IBAs were heavily threatened by agricultural expansion. This threat was due to rapid increase in human population coupled with vast pieces of land being cleared for agricultural purposes. This threat was affecting mainly IBAs that are partially protected. IBAs such as Chisamba, Mutulanganga, Jimbe Drainage, Wonder Gorge, Kafue Flats and Bangweulu exhibited high rate of shifting cultivation.

Agricultural expansion was also a threat in Sioma Ngwezi National Park.

3.6.2. Mining and Quarrying

While small-scale mining of lime was a threat in North Swaka, mining of Malachite,

...eat in

In the case of Wonder Gorge, mining has resulted in habitat destruction which would potentially affect the near threatened Taita Falcon *(Falco fasciinucha).*

3.6.3. Invasive Alien Species

The most common invasive and alien species is *Lantana camara.* This invasive plant is found in nearly all the IBAs with Mosi-oa-Tunya National Park being the most affected. As alluded to; *Mimosa pigra* was also another invasive species spreading rapidly in Lochnivar NP. A survey carried out in Lochnivar National Park revealed that there were fewer water birds in areas invaded by *Mimosa pigra* than those without the invasive plant species in question.

3.6.4. Over all Responses

A number of responses to combat threats affecting IBAs in Zambia were recorded. These included;

- Mechanical removal of invasive alien species such as *Mimosa pigra*
- Increased law enforcement efforts to mitigate poaching.
- Extension of awareness programs to local communities
- Encouraging and supporting local community groups in identifying sustainable and alternative livelihood systems and reduce pressure on natural resources.
- Developing of land use plans for various categories of land including GMAs.
- Encouraging early burning and enhanced fire management.

Pic. 6: Black Egret-Umbrella feeding

4.0. RECOMMENDATIONS

This was the second year that ZOS has carried out monitoring activities in PAs/IBAs with the production of the annual Status and Trends Report.

ZOSô main aim therefore is to expand basic monitoring to all IBAs in Zambia and include in future comprehensive or detailed biodiversity monitoring in priority areas.

The results of the monitoring exercise show that the network of PAs/IBAs in Zambia is facing degradation from various anthropogenic and environmental factors. The trends are that in most of the IBAs monitored in 2008 and 2009, there was on average, a reduction in threats and increase in management responses.

During the 2008 reporting period we raised concerns on the need to; harmonize national biodiversity monitoring programs and strengthening of cooperation between government PA authorities, community groups and civil society organizations.

One year down the lane, these concerns still remain key to sustainable and robust National Biodiversity Monitoring Programs.

The following discussion and recommendations have been made to specific stakeholders and players in biodiversity and PA management at the national level and are by and large similar to the ones raised in the 2008 Status & Trends Report, since the situation has not changed much.

the following recommendations:

- Promotion of eco tourism to protect local forests. ZOS is supporting this and has so far trained at least two birds guides in selected IBAs
- Strengthen ties with partners. This should be done in order to provide protection and intensify the conservation of key species and habitats. Better management of the IBAs can be achieved through data sharing.
- Identify other Biodiversity Areas to add to the network of IBAs.
- Integrate environmental education into the education curricula
- Develop alternative sources of livelihood and income to reduce pressure on natural resources.
- Indigenous tree planting should be encouraged and supported in both private and other protected and unprotected sites.

4.2. Recommendations for ZAWA

The team notes that the Zambia Wildlife Authority (ZAWA) is doing a commendable job of managing the Zambian wildlife estate, sometimes under difficult circumstances. In addition, it is noteworthy that ZAWA currently operates the most extensive system of community participation and benefit sharing mechanism in the countryôs GMAs through the Community Resource Boards (CRBs). The team also recognizes the challenges associated with managing such an extensive network of protected areas.

During the period under review, the team found that all the PAs included in the assessment are faced with a number of pressures and threats to biodiversity that included anthropogenic, environmental, and climatic. The range and severity of threats varied from one site to another although some threats like late bush fires and poaching were reported in all IBAs, while climate change related threats are more severely pronounced in the drier south-western part of the country. As such, the recommendations are tailored to address key issues in responding to identified threats and pressures in PAs.

- There is need to enhance and strengthen the relationship between ZAWA and communities living around the protected areas especially in terms of direct community participation in the management of protected areas.
- ZAWA should consider designation of new PA categories outside of the current system to cater for biodiversity rich areas such as IBAs that are outside the traditional PA systems.
- ZAWA should formalize the protection of wetlands throughout the country by domesticating multilateral environmental agreements (MEAs) that relate to the conservation of wetlands such as the Ramsar Convention and introduction of a wetlands conservation and management policy.
- ZAWA should encourage community groups involved in conservation of their areas by introducing specially designated community conservation areas.
- ZAWA in collaboration with other partners should increase the protection of bird species by raising the profile of birds as indicators of biodiversity trends.
- ZAWA should encourage the designation of special conservation areas with full protection status for the protection of threatened bird species.
- The government of Zambia through ZAWA and other partners should work towards setting-up a national endangered/threatened species list and designation to facilitate national level

action

4.3. Recommendations for Forestry Department

The Forest Department in Zambia, like most environment related government departments and agencies has been experiencing declining budgetary allocation since the 1990s. This has led to a drastic reduction in field and extension personnel, which make field and district level management of forests difficult. Currently, the Forest Department lacks sufficient field teams and equipment to carry out routine forest estate monitoring and management activities. Further, the 1978 Forest Act, which is the principal law for forestry management in Zambia is out of date and needs to be amended. However, it should be noted that the Forest Department implemented pilot joint forest management (JFM) programs in selected areas. In addition, a new forest act and a new forest policy are at an advanced stage of enactment. This notwithstanding, there is urgent need to improve field level forest resources management capacity and collaboration. In particular, it is critical that collaborative arrangements between the Forest Department and community groups and other partners are formalized. Joint Forest Management (JFM) programs and other management decentralization programs need to be implemented throughout the country for effective management of the forest estate. The following recommendations are aimed at addressing key issues in response to identified threats and pressures in IBAs within forest reserves.

- Increase the protection of the forest estate throughout the country by engaging forest boundary communities and partners in the management and monitoring of forest reserves.
- Encourage the alternative livelihood systems and the exploitation of non-timber forest products as a way of reducing pressure on the forest estate.
- Encourage the development of alternative sources of timber and poles by encouraging development of plantations around major urban areas.
- Develop and implement management plans for forest reserves facing the highest level of threats.
- Encourage the development of joint forest management programs by communities and partners to seek increased protection of forest reserves with rich biodiversity.
- Encourage indigenous tree planting in deforested areas and community areas to rehabilitate depleted areas and reduce pressure on forest reserves.
- Promote regular monitoring of forest reserves by community groups and partners

4.4. Recommendations for ZOS

The 2009 biodiversity monitoring exercise builds on the work of 2008 and expands the monitoring activities to 67% of the IBA network to assess the pressures and threats to biodiversity and birds in Zambia. The monitoring exercise represents the most representative and widest attempt at biodiversity monitoring in the country both in terms of spatial and ecosystem/habitat coverage. The following recommendations are meant to improve the performance of the monitoring program.

- Expand basic site monitoring to at least 32 IBAs for the 2010 reporting period.
- Increase the site coverage and the number of monitors per site.
- Encourage the formation of SSGs in more IBAs
- Develop the capacity of SSGs to conduct IBA monitoring.

...level
...s and
bird conservation through advocacy and promotion of increased interactions between local people and birds

- Advocate for increased protection of IBAs as special conservation areas
- Enhance collaboration with stakeholders and site support groups and identify opportunities for funding for conservation activities
- Effect detailed monitoring and development of site action plans for highly vulnerable IBAs e.g. Machile, Chisamba and Sioma Ngwezi National Park.
- Develop an advocacy strategy to enhance the conservation and management of wetlands at the national level as centers of biodiversity and livelihood.
- Increase the sharing of monitoring results at the national, local and site level.

5.0. CONCLUSIONS

As in the case of the 2008 reporting period, the majority of the threats to the IBA network stem from anthropogenic activities centered on livelihood activities. Additional threats and pressures result from environmental and climatic conditions. The combination of factors is likely to increase the pressure on IBAs. In working with community groups to promote conservation there is need for increased focus on sustainable livelihood activities that will contribute to the conservation effort. The following activities need to be encouraged to increase the conservation of birds and the rich biodiversity of IBAs:

5.1. Promote Eco-tourism

Local communities in selected IBAs should be encouraged to develop sustainable eco-tourism activities centered on the local culture and biodiversity in each IBA. ZOS is currently training community members in selected IBAs as bird guides as part of the steps towards this development.

5.2. Develop Functional Partnerships

ZOS should widen its network with institutions that are doing work on environmental protection and natural resource conservation in and around the IBAs. Exchange of data and ideas on the best approaches to prevent extirpation should be encouraged for better management of IBAs.

5.3. Expansion of IBA network

Studies in the existing IBAs should be conducted so that a comprehensive biodiversity status can be determined. These studies should also be extended to sites which could be potential IBAs so that the IBA network in Zambia widens. More information on the existing IBAs should also be obtained.

5.4. Environmental & School Curriculum

ZOS and other partners in biodiversity conservation should actively lobby the Ministry of Education to incorporate environmental education into the school curricula. Environmental education and awareness should be intensified and extended to both urban and rural communities. The communities living in and around the IBAs should be sensitized on the need to conserve the IBAs. Issues such as the presence of globally threatened species, biome restricted species, globally important congregations, and restricted range species should be communicated to the local people so that they appreciate these resources.

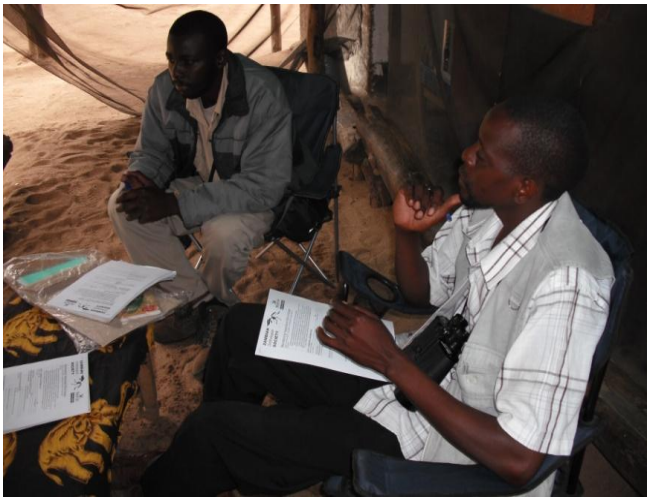
5.5. Alternative Livelihood Systems

ZOS through the site support group approach should continue to expose communities living in the IBAs to alternative sources of income to reduce pressure on natural resources. Income

...bee-...d bird guiding should be encouraged.

5.6. Site/Habitat Restoration

Deforestation and late fires have been cited as the most common threats in the IBAs. There is need to institute environmental management practices that reduce these pressures and encourage the recovery of degraded IBAs. This should include instituting fire management regimes in affected IBAs and rehabilitation and restoration of degraded habitats. Indigenous tree planting should be encouraged both on private estates and in other IBAs. Site support groups and IBA schools could also be encouraged to promote indigenous tree nurseries for income generation and nature management.



Pic. 7: Field team orientation exercise

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ANNEXES

Annex 1: List of IBAs/PAs in Zambia

	CODE	NAME, AREA(ha), SELECTION CRITERIA	HABITAT; PROTECTION STATUS	COMMENTS
1	ZM001	Hillwood; 3200; GT & BR	Grassy Plains- from very wet, peaty dambos to drier sandy areas, woodland, & dry ever green forest; PO	-Deforestation in surrounding areas -Charcoal burning on boundary -Increased pressure on IBA
2	ZM002	Source of the Zambezi; 250; BR	Gallery Mushitu; woodland; N/LF; NM	-Deforestation, small scale mining
3	ZM003	Chitunta Plain; 10,000; GT & BR	Grasslands- dambo, floodplain, &dry plain, woodland; U	- Petroleum exploration, -Logging -Deforestation
4	ZM031	Jimbe Drainage; 15, 600; GT & BR	Miombo, Gallery Mushitu; N/LF, U	- Petroleum exploration, -Deforestation, Small scale mining
5	ZM004	West Lunga NP and Lukwakwa GMA; 445, 0000; GT & BR	Mavunda, Miombo, Chipya, dambo; NP, GMA	- Petroleum exploration, -Climate change, -Poaching
6	ZM0	Minyanya Plain; 50, 000; GT & BR	Grassy Plains, Scrub, Syzygium forest; U	- Petroleum exploration, -Other mineral exploration
7	ZM0	Mbulo Forest; 500; GT & BR	Mushitu, grassland; U	-Logging, dam development, petroleum exploration
8	ZM005	Liuwa Plain NP; 366, 000; GT, BR, & GIC	Short-grass sand Plain; NP	-Increased protection as a result of public-private partnership -Some poaching, climate change -Petroleum Exploration
9	ZM006	Barotse Floodplains; 730, 0000; GT, BR, & GIC	Floodplain; U, GMA	-Harvesting of chicks and eggs from nests -Conversion to agriculture esp. increase in paddy rice
10	ZM007	Sioma Ngwezi NP; 527, 600; GT, BR	Kalahari woodland, Mutemwa, Mopane woodland, grassland & Thornveld; NP	-Major threats include petroleum exploration and aerial spraying for Tsetse fly -Climate Change
11	ZM00	Simungoma; 100, 000; GT, BR	Floodplain, Woodland, & Mutemwa; N/LF, U	- Petroleum exploration, -Charcoal burning, logging -Climate Change, water stress
12	ZM008	Machile; 477, 000; GT, RR, BR, GIC	Mopane woodland, grassland, floodplain, savanna woodland, remnant Mutemwa; GMA, U	-Charcoal burning, land clearing for agriculture, climate change (impact on surface water)
13	ZM009	Mosi-oa-Tunya NP & Batoka Gorge; 8, 600;	Riparian habitat-sand bars, cliffs and fringing forest; Mopane & Kalahari	-Invasive species, esp. Lantana camara; increased noise

			...and, & patches of Mutemwa;	especially from micro-lights and helicopter tours; habitat loss due to tourism expansion
14	ZM012	Kafue NP; 2, 240, 000; GT, RR, BR, GIC	Habitats and vegetation range from Miombo woodland, flood plains to Kalahari woodlands and Mutemwa as well as Mopane woodlands; NP	-Late fires and poaching are main threats -Protection status has increased over the last 5 years
15	ZM011	Kafue Flats; 650, 000; GT, BR, GIC	Flood plain, levees, oxbow lakes, permanent swamps and seasonally flooded areas fringed by termitaria, scrub, munga and patches of palm savanna; NP, GMA, PO	-Poaching, late fires, altered flood regime, invasive alien plant species and encroachment by upland vegetation, Climate change
16	ZM010	Nkanga Conservation Area; 9, 700; GT, BR	Mosaic of Miombo and munga woodland, dambos, open grassy plains, riparian thickets & deciduous thicket; PO	-Privately run conservancy and game ranch.
17	ZM00	Mutulanganga; 28, 000; GT, BR	Lowland deciduous thicket, Mopane and other dry woodlands; N/LF, U	-Deforestation due to charcoal burning and field clearing, encroachment & poaching -Cross border poaching -Harvesting of Red billed Quereq chicks from nests (reportedly 50kg/ household)
18	ZM018	Lower Zambezi NP; 440, 000; GT,BR	Varied habitats from high plateau, escarpment and valley, vegetation-Miombo, munga, riparian forest, Mopane, deciduous thicket, palm savanna and some flood plains; NP	-Climate change, mineral exploration, mining, poaching
19	ZM017	Chisamba; 52, 000; GT, BR	Flat sand-veld, Miombo, dambo, dry evergreen forest, munga, riparian forest, and farm land; PO, N/LF, U	-Deforestation especially in the national and local forest, charcoal burning, conservation/ protection interventions patchy and uncoordinated
20	ZM016	Lukanga Swamps; 330, 000; GT, RR, GIC	Swamp, open lagoons, seasonally inundated floodplain, termitaria, riparian forest and Mushitu; U	-Although declared a Ramsar site, no noticeable increase in protection -Land clearing for agriculture, fishing pressure
21	ZM014	Imanda Forest; 1, 000; BR	Mushitu on limestone substrate, dambo and cultivated area; U	-Deforestation and encroachment -Limited community participation
22	ZM013	Chimfunshi Wildlife Orphanage; 93, 000; GT, BR	Miombo woodland interspaced with dambos, patches of Mushitu, tall riparian forest and flood plain; PO	-Logging, deforestation, parts of IBA put-up for sale -One of the farms that make-up the IBA earmarked for government repossession

		Forest; 108, 000; BR	*...bo, headwater dambos, rocky ridges and hills, sub-montane forest; N/LF*	*-Deforestation, charcoal burning, poaching* *-Lack of forest department presence*
24	*ZM00*	*Wonder Gorge; 10, 000; GT, BR*	*Gorges, rolling terrain and Miombo; U*	*-Boundary remains largely undefined*
25	*ZM025*	*Kasanka NP; 39, 000; GT, BR*	*Dominated by Miombo with areas of dwarf Brachystegia stipulata, lake basin Chipya, dry evergreen forest, riparian forest, mushitu, pans, papyrus swamp, dambos, and floodplains ; NP*	*-The best example of a privately managed national park. May provide lessons on alternative management styles for PA management in Zambia.*
26	*ZM024*	*Lavushi Manda NP; 150, 000; GT, BR*	*Dominated by mature miombo, strips of forest and dambos. Head waters of some rivers that drain into the Bangweulu Swamps; NP*	*-Being started-up again*
27	*ZM00*	*Mutinondo Wilderness; 10, 000; GT, BR*	*Mainly miombo with granite inselbergs, dambos, riparian forest and patches of mushitu; PO*	*-Privately owned conservancy also working with local communities to conserve surrounding areas*
28	*ZM026*	*Bangweulu Swamps; 1,284, 000; GT, BR, GIC*	*Large wetland system comprising lakes, swamp, floodplain, termitaria & woodland; NP, GMA, U*	*-Recent developments in the area include setting-up of a new NP (Chikuni Partnership Park) centered around Chikuni GMA*
29	*ZM020*	*North Luangwa NP; 463, 600; GT, BR*	*Mopane and savanna woodland mosaic dominated with Riparian gallery forest and miombo woodland; NP*	*-Following heavy poaching during the early 1980s The Frankfurt Zoological Society (FZS) has implemented a conservation program in the park and surrounding GMAs, this has seen a major recovery in the park.*
30	*ZM023*	*Shiwa Ng'andu; 9, 000; GT, BR*	*Sub-montane habitat dominated by a natural lake, reedbeds, papyrus swamp, miombo, dambos, riparian thicket, and patches of mushitu & Afromontane forest; PO*	*-The area has been well protected and privately run estate dating back to the colonial era*
31	*ZM027*	*Luapula Mouth; 90, 000; GT, BR, GIC*	*Papyrus swamp with scattered lagoons and islands, Luapula River forms the western boundary; U*	*-Isolated populations of two species near endemic to the Lake Victoria Basin biome* *-Large settlements on the periphery of the IBA and the island*
32	*ZM00*	*Lusenga Plains NP; 88, 000; GT, BR*	*Plateau bordered by the Kalungwishi and the oval-shaped Lusenga plains, grasslands, wet swamps, patches of mushitu, dry evergreen Marquesia forest, riparian forest, & miombo woodland ; NP*	*-Hunting and trapping, late bush fires* *-Restocking of the National Park with various large mammal species being carried out by ZAWA*

			...waters of the Kalungwishi River, ...of site is dambo, patches of musnitu & miombo woodland; U	-Low human density -Dambos critical for Chikanda (edible Orchids) with the endemic Micrargiella scrophulariaceae common
34	ZM029	Mweru Wantipa NP; 313, 400; GT, BR, GIC	Lake Mweru Wantipa with Itigi forest dominant, miombo mosaic and dambos dominate the western section of the park; NP	-Poorly protected -High levels of poaching -Dam development -Encroachment
35	ZM00	Sumbu NP & Tondwa GMA; 256, 000; GT, BR, GIC	Southern tip of Lake Tanganyika, riparian forest, Itigi thicket, miombo woodland, river valleys, & Tondwa pan; NP, GMA	-Part of the East African Rift Valley system/ Albertine Rift Valley
36	ZM030	Saise River; 4, 000; GT, RR, BR	Straddles 8km of the Saise River and surrounding dambo, areas of papyrus swamp, floodplain, termitaria and degraded woodland; U	-The only system in Zambia that flows into Tanzania -The area is critical for the conservation of the Lake Tanganyika Weaver
37	ZM00	Uningi Pans; 1, 000; GT, BR, GIC	Two pans separated by a narrow strip of land, during dry periods mainly grassland & swamp vegetation dominates during high water period; U	-This site is critical for the conservation of the Zambian population of the Great Crested Grebe, a species considered critically endangered in East Africa
38	ZM022	Nyika Plateau National Park; 8, 000; GT, RR, BR	Gently undulating grasslands with patches of montane & riparian forest; NP	- Part of the eastern highlands which form an important catchment of the major rivers in the area
39	ZM00	Mafinga Mountains; 13, 000; RR, BR	Includes Mafinga national forest, land above 1500m, lower slopes covered by miombo with masuku dominancy in some places, broken rocky terrain & scree in most of the higher ground, montane grassland, protea scrub, riparian forest, & montane forest- Mulangale; N/LF, U	-This is little known and the current protection status is not known -This is an important catchment IBA and the source of the Luangwa River.
40	ZM019	South Luangwa National Park; 905, 000; GT, BR, GIC	Covers parts of the mid-Luangwa valley & the foothills of the Muchinga escarpment, oxbow lakes, sand cliffs & bars Mopane woodland is dominant with levee thicket, miombo, floodplain, riparian forest, & grasslands ; NP	-One of the best protected NP in the country as well as the most variable self-funding PA. -One of a handful of IBAs with a site specific bird list/guide (Birds of the Luangwa Valley)
41	ZM021	Lukusuzi National Park; 272, 000; GT, BR	Miombo woodland dominated with dambos, patches of riparian forest and Mopane woodland; NP	-Small scale illegal mining of semi-precious stones
42	ZM00	Nyanje Hills; 5, 000; GT, BR,	Degraded woodland and farmlands with a high density of granite inselbergs; N/LF, U	-The area is ill defined and is under extreme pressure from human settlements

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102. Wataru Tokura
103. Webby Sikabala
104. Wilikani Zalyani Emmanuel
105. Willy Chwaya
106. Willy Mwaba
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Lesser Jacana Microparra capensis