2008 STATUS REPORT FOR PROTECTED IMPORTANT BIRD AREAS IN BOTSWANA

Edited by

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Acronyms

BLB	BirdLife Botswana
BLI	BirdLife International
CBD	Convention on Biological Diversity
CKGR	Central Kalahari Game Reserve
DEA	Department of Environmental Affairs
DWNP	Department of Wildlife and National Parks
EIS	Environmental Information System
IBA	Important Bird Area
KTP	Kgalagadi Transfrontier Park
PA	Protected Area
RSPB	Royal Society for the Protection of Birds
WBDB	World Bird Data Base

Executive Summary

BirdLife Botswana (the BirdLife partner in Botswana) identified and documented 12 sites as Important Bird Areas (IBAs) of Botswana. These sites are; Chobe National Park, Linyanti Swamps, Okavango Delta, Lake Ngami, Central Kalahari and Khutse Game Reserves (CKGR), Makgadikgadi Pans, Gemsbok National Park, Tswapong Hills, Mannyelanong Hill, Phakalane Sewage ponds, South Eastern Botswana and Bokaa Dam. Even though a huge amount of work has been done by BirdLife Botswana, monitoring efforts in these areas lack adequate co-ordination. This has been largely due to insufficient funding for designing and achieving the active participation of stakeholders in monitoring and reporting on IBAs. If monitoring is neglected, the true impact of conservation action is hard to evaluate. In 2007 BirdLife Botswana together with seven other African countries (Burkina Faso, Burundi, Uganda, Kenya, Tunisia, Zambia and Zimbabwe) benefited from European Commission funding to pilot a reporting mechanism for biodiversity at PAs using the Pressure-State-Response model adapted from the global IBA monitoring framework. The target sites for the project in Botswana are IBAs overlapping protected areas as listed above. However the Linyanti Swamps IBA, though not protected, was also considered, thereby increasing the list to seven.

Since not all species can be covered for biodiversity monitoring, birds were chosen as indicator species for showing biodiversity changes at protected Important Bird Areas mainly because; they are widespread, they are diverse, they are easy to survey, they have an aesthetic appeal and many people watch them as a sport/for fun, they are better known than other organisms and they have been shown to be effective indicators of biodiversity richness as opposed to other animals and plant groups. Over 50 recorders were trained on how to capture information on protected Important Bird Areas using the IBA global framework developed by BirdLife International. Out of the seven protected IBAs of the project focus, records were received from six *i.e.* Chobe National Park, Okavango Delta, Makgadikgadi Pans, Central Kalahari Game Reserve, Mannyelanong Game Reserve and Linyanti while the no records were received from Kgalagadi Transfrontier Park due to unforeseen circumstances. Lake Ngami is not a site included in the project scope, but the data recorded from this site were included in the analysis as they were seen to be important and relevant.

In 2008, there were 25 globally threatened bird species in Botswana, and a further eight species regarded as nationally threatened, or Birds of Conservation Concern in Botswana. Among the globally threatened species, it is significant to note that Botswana has no Critically Endangered bird species. There are only two Endangered species (both vagrants), nine Vulnerable and 14 Near Threatened species. On the whole, the status of birds throughout the country is relatively good; however, there is no room for complacency and BirdLife Botswana continues to monitor globally and nationally threatened birds. None of the species in Botswana is endemic – there are only two near-endemics, *viz*. the Slaty Egret, which has approximately 85% of its global population in the Okavango Delta, and the Short-clawed Lark, which has more than 90% of its global population in South-eastern Botswana. Twenty different types of threats were noted and scored accordingly by recorders. The three most important threats recorded are tourism activities, fires and disturbance to the habitat – all of which had an impact score of 5 out of 9. Flight path and fishing were picked at one site and having a low impact. Botswana total area: 578.150 km² of which 242.120 km² (41.9%) is set aside for conservation. About 17 percent of the country has been set aside as national parks and game reserves, and 20 percent is designated as wildlife management areas. Despite this, management of these sites still lacks co-ordinated monitoring of either species or habitat. Out

of the twelve IBAs only six are protected and the rest are not. Some sites, though not protected - such as the Tswapong Hills and Southeast Botswana - hold globally threatened species, namely the Cape Vulture and the Short-clawed Lark respectively. The main part of Sua Pan in the Makgadikgadi Pans where Lesser Flamingos breed in large numbers is also not protected. This is the only site in Botswana and one of the four in Africa where flamingos breed. Protected areas also differ in their management processes.

In conclusion, the biodiversity at protected areas as shown by birds as a proxy remains stable, with moderate threats and considerable conservation efforts.

1.0 INTRODUCTION

In 1998, BirdLife Botswana (the BirdLife partner in Botswana) identified and documented 12 sites as Important Bird Areas (IBAs) of Botswana (Barnes, 1998). These sites are; Chobe National Park, Linyanti Swamps, Okavango Delta, Lake Ngami, Central Kalahari and Khutse Game Reserve (CKGR), Makgadikgadi Pans, Gemsbok National Park, Tswapong Hills, Mannyelanong Hill, Phakalane Sewage ponds, South Eastern Botswana and Bokaa Dam (Map 1.1). The Chobe and Okavango Delta IBAs have the richest avifauna, with 433 and 464 species respectively.

In the process of designating IBAs, there is a great overlap between IBAs and protected areas. The majority of IBAs in Africa (57% of the 1,230 sites) overlap to varying degrees with some kind of protected areas. Six of Botswana's Important Bird Areas overlap protected areas (PAs). These are the Chobe National Park, Okavango Delta, Makgadikgadi Pans, Central Kalahari Game Reserve, Kgalagadi Transfrontier Park, and Mannyelanong Game Reserve. Even though a huge amount of work has been done by BirdLife Botswana in identifying and safeguarding these sites, monitoring efforts in these sites lack adequate co-ordination. This has been largely due to insufficient funding for designing and achieving active participation of stakeholders in reporting on IBAs.

In 2007 BirdLife Botswana together with seven other African countries (Burkina Faso, Burundi, Uganda, Kenya, Tunisia, Zambia and Zimbabwe) benefited from European Commission funding to pilot a reporting mechanism for biodiversity at PAs using the Pressure-State-Response model adapted from the global IBA monitoring framework. This four-year project, which commenced in 2007, is regionally referred to as the "Instituting effective monitoring of protected areas (Important Bird Areas) as a contribution to reducing the rate of biodiversity loss in Africa" project. This report is a product of that project which essentially aims at monitoring the biodiversity status and trends in protected areas which are critical parts of the world's natural ecosystem. The project will achieve its goals through ensuring that the appropriate capacity is built for monitoring and sustaining all stages of biodiversity monitoring at protected areas. Since monitoring is not co-ordinated in most countries, the project seeks to leverage the support from the national agencies mandated to manage biodiversity at protected areas to ensure that the process of monitoring is sustainable and embedded as a core activity that is undertaken on a daily basis. The process should generate information that is widely and effectively available to influence policy and management actions at various levels. In Botswana the programme has successfully gained full support of especially the Department of Wildlife and National Parks without which there would be very little success.

The target sites for the project in Botswana are IBAs overlapping with protected areas as listed above. However Linyanti Swamps IBA, though not protected was also considered because it falls under a private concession assuming a certain level of protection, thereby increasing the number to seven.

As indicator species, birds have many advantages as a group to use for biodiversity monitoring. Birds are widespread; diverse; easy to survey; have an aesthetic appeal and many people watch them as a sport/for fun. They are known more than other organisms and have been shown to be effective indicators of biodiversity richness as opposed to other animals and plant groups. Birds have also been recognisd as an excellent barometer for environmental

health in general especially in detailed studies where summary assessment data from a range of species may be obtained.

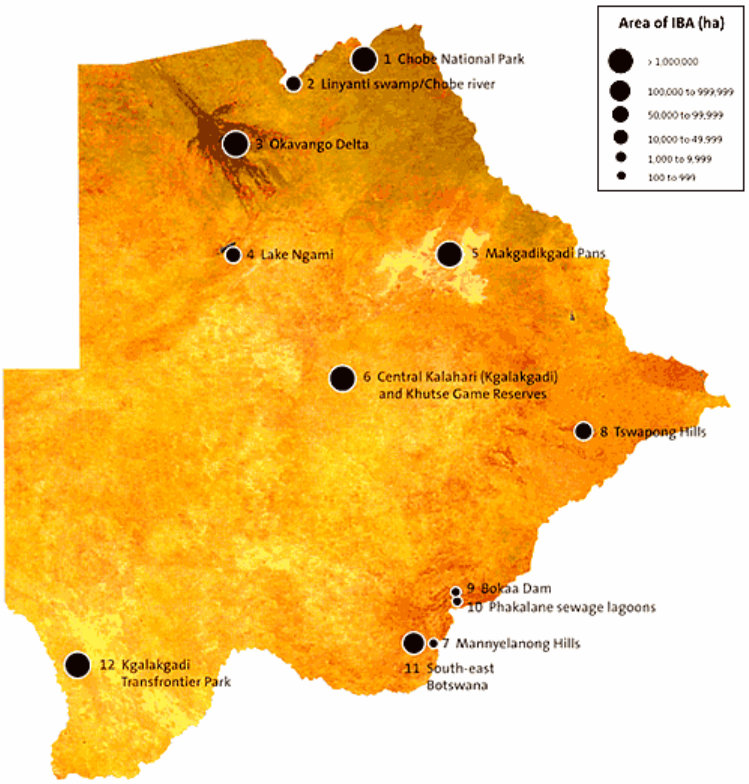
Aims and Objectives of the report

The report outlines the status of the habitat and/or species, pressures or threats and conservation efforts at PAs overlapping Important Bird Areas (referred to in some parts of this report as protected Important Bird Areas). Since not all species could be covered for biodiversity monitoring, birds were used as indicator species.

As this is the first of its kind, the report will primarily present baseline data regarding the current scenario with respect to avifauna in protected Important Bird Areas.

The other intention of the report is to depict contributions made by recorders trained in monitoring of sites using the IBA approach.

Map 1.1 Map of Botswana showing Important Bird Areas.



Map 1.2 Map of Botswana showing protected areas

2.0 MONITORING IMPORTANT BIRD AREAS

2.1 What are IBAs?

IBAs are generally sites of global conservation importance for birds and other biodiversity identified using standard internationally agreed criteria, which are objective, quantitative and scientifically defensible. The sites must, wherever possible, be large enough to support self-sustaining populations of those species for which they are important. These sites are distinct areas amenable for practical conservation and part of a wider, integrated approach to conservation and sustainable use that embraces sites, species, habitats, and people. IBAs are identified on the basis of the presence of globally threatened species, range restricted species, and biome restricted species or congregations. Species, which are considered in identifying the site as important, are referred to as trigger species. The trigger species in Botswana have been listed in 'Important Bird Areas of Botswana by Tyler and Bishop (1998). Appendix 1 shows a list of key trigger species for protected IBAs in Botswana. The list may change with time as more species qualify or disqualify as trigger species.

2.2 The IBA Programme

The Important Bird Areas (IBA) Programme of BirdLife International is a world-wide project launched in the mid 1980s aimed at identifying, monitoring and protecting a network of critical sites for the world's birds. The early stages of the Programme focused on developing national constituencies and identifying the sites, and the subsequent ones focus on activities to conserve and safeguard these sites in the long term, with effective monitoring and advocacy taking place. The aims of the programme are:

- Identify and document globally important places for bird conservation in Africa based on inclusion of endemic avifauna, threatened species, concentrations of numbers of individuals or species and representation of regionally characterised bird assemblages.
- Promote, develop and involve national organisations and contributors in the implementation of the programme.
- Increase national contributions to the programme through the promotion of institution-building, network development and training as appropriate.
- Publish and distribute widely a continental directory of sites, *Important Bird Areas in Africa and associated islands.*
- Promote the publication of national IBA directories in appropriate languages.
- Establish a database containing the critical IBA information in a way that can be maintained, updated and made available in individual countries and to the wider conservation community.
- Inform relevant national authorities, where appropriate, of the programme and seek their acceptance of its concept, aims and progress at the national level.
- Inform decision-makers at all levels of the existence and significance of Important Bird Areas.
- Encourage and initiate conservation actions at Important Bird Areas throughout the continent.

2.3 What is monitoring?

Monitoring involves repeated collection of information over time, in order to detect changes in one or more variables of interest. The general objective for monitoring is to evaluate the success of sustaining biodiversity by measuring specific indicators. Monitoring is a central part of the IBA process. IBA monitoring is needed both to assess the effectiveness of conservation measures and to provide an early warning of the extent of threats to biodiversity at a species, site, habitat, landscape and ecosystem level. Species are very sensitive to changes in their habitat quality and therefore there is an emerging need to understand what changes are relevant to sites and how these changes affect the survival of species for which the sites are designated as IBAs. Such information will help in adapting our interventions accordingly, as well as allocating the scanty resources effectively to the most deserving sites (BirdLife International, 2006).

At the site level, IBAs are monitored in order to:

- Detect and act on threats in good time. Monitoring data provide ammunition for advocacy and information for designing interventions.
- Assess the effectiveness of conservation efforts. Is investment in conservation actually bringing about an improvement? Are 'sustainable use' approaches really proving sustainable?

Nationally, IBA monitoring data provide information on biodiversity status and trends (BirdLife International, 2008). This has a great potential for generating information that could feed directly into the process of reporting to the Convention on Biological Diversity (CBD) and other international and (where appropriate) Multilateral Environmental Agreements (MEAs). It also allows the impacts of economic and environmental policies that affect more than one IBA to be assessed. A regular IBA status report is a useful product for national advocacy (BirdLife International, 2006).

2.4 The BirdLife global monitoring framework

In Botswana, monitoring of these areas and the avian biodiversity they contain has largely been predicated on the use of a global monitoring framework developed by BirdLife International (2006). The monitoring tool is based on a Pressure–State-Response model - Pressures are threats facing the trigger species and/or the habitat for the trigger species; the State refers to the condition or situation of the habitat or population of the trigger species; and the Responses are the conservation actions taken to reduce the threats or improve on habitat conditions. This monitoring tool uses the weakest link approach which detects change without giving details on the cause of the change. The weakest link approach is whereby the most negatively affected habitat or species is considered for management or intervention. Consistency in monitoring is crucial in ascertaining the actual measure of the population over time.

2.5 Monitoring history

In 2006, monitoring protocols for IBAs in Botswana were produced. In 2007, a comprehensive monitoring report for three IBAs (Lake Ngami, Makgadikgadi Pans and Linyanti Swamps) was then produced (BirdLife Botswana, 2007). The current report is now produced to provide baseline data as compiled from all stakeholders. It will however cover

only seven sites (Chobe National Park, Okavango Delta, Makgadikgadi Pans, Mannyelanong Game Reserve, Central Kalahari Game Reserve, Linyanti Swamp and Lake Ngami). No records were received from Kgalagadi Transfrontier Park due to unforeseen circumstances. Lake Ngami is not a site considered in the scope of this project but the data recorded from this site were included in the analysis as they were seen to be important and relevant. In the long run the intention is to monitor and assess all other IBAs and protected areas. It is worth noting that the content of the report is based on information received from those who have been trained on basic monitoring of sites and the literature reviewed.

3.0 METHODOLOGY

3.1 Application of the global monitoring framework

3.1.1 Status of the birds and habitat

The state indicator refers to the state of the bird species in terms of numbers recorded for a particular site or the condition of a particular habitat for the trigger species. A recorder can monitor the species number or the habitat condition or both depending on the recorder's confidence. The basic assessment of the habitat is considered in relation to the trigger species.

Table 1. A key to assessing the habitat condition as interpreted by the recorder

Status	Scores			
	0	1	2	3
Habitat	Very poor	Poor	Moderate	Good

3.1.2 Pressures/threats

Several threats were identified for a particular IBA and all described further by being assigned scores using Table 2 as a key to scoring. Scores were then summed to get a total impact score and a pressure or threat with a high score became a major threat at the site of assessment. It is worth noting that the summation is assigned a negative, as it is an unwanted item *i.e.* the more negative it is the more intense it is.

Table 2. Key to assigning scores to the threats or pressures to the bird species or habitat

	Scores			
	0	**1**	**2**	**3**
Timing	Past, unlikely to return, no longer happening	To happen beyond four years (long term)	To happen within four years (short term)	Happening now
Scope	Small area/few individuals (>10%)	Some of the area/small population (10-50%)	Most of the area/population (50-90%)	Whole area/ population (>90%)
Severity (Over 10 years or 3 generations)	No deterioration (<1%)	Slow deterioration (1-10%)	Moderate deterioration (10-30%)	Rapid deterioration (>30%)

3.1.3 Conservation measures/ response

Conservation measures at each site were recorded and assigned scores using guidance from Table 3.

Table 3. Key to recording the management intervention at the site and scores used in assessing different action types

Action type	Scores			
	0	1	2	3
Conservation designation	Little or no IBA covered (0 - 10%)	Some IBA covered (10-49%)	Most IBA covered (50-90%)	Whole area (more than 90%)
Management plan	No management planning has taken place	No management plan but management planning has begun	Management plan exists but out of date or not comprehensive	Comprehensive and appropriate management plan exists that aims to maintain or improve the populations of species
Conservation action	Very little or no conservation action is taking place	Some limited conservation initiatives in place	Substantive conservation measures being implemented but not comprehensive and limited by resources and capacity	Conservation measures needed for the site are being comprehensively and effectively implemented

3.2 Sources of information

? Review of management plans for protected areas overlapping Important Bird Areas to obtain information relating to the Response indicator of the global monitoring framework.

? Recorders from the Department of Wildlife and National Parks, tour operators (mainly professional guides), and communities around protected Important Bird Areas were trained using the BirdLife International Global Monitoring Framework version 1.2 (2006). The assessment forms were filled in to assess the State, Pressure (threats) and Response for IBAs/PAs and submitted to BirdLife Botswana for analysis. Appendix 3 shows the list of recorders in 2008. Appendix 4 shows the assessment form that was used.

3.3 Analysis and presentation approach

? Information was analysed for each site and presented accordingly to obtain the status quo. The sub-sections that follows outlays how the assessment and analysis were done.

4.0 RESULTS

This section provides information adapted from literature and recorders. Out of the seven protected IBAs that formed the project focus, records were received from six *i.e.* Chobe National Park, Okavango Delta, Makgadikgadi Pans, Central Kalahari Game Reserve, Mannyelanong Game Reserve and Linyanti while no records were received from Kgalagadi Transfrontier Park due to unforeseen circumstances. Lake Ngami is not a site considered in the scope of this project but the data recorded from this site were included in the analysis as they were seen to be important and relevant. In the long run the intention is to monitor and assess all other IBAs and protected areas.

4.1 Findings and discussion

4.1.1 State indicator

In 2008, there are 25 globally threatened bird species in Botswana, and a further eight species regarded as nationally threatened, or Birds of Conservation Concern in Botswana. It is significant to note that Botswana has no Critically Endangered bird species. There are only two Endangered species (both vagrants), nine Vulnerable and fourteen Near Threatened species. On the whole, the status of birds throughout the country is relatively good; however, there is no room for complacency and BirdLife Botswana continues to monitor globally and nationally threatened birds.

According to the official Botswana bird list from BirdLife Botswana, there are 587 species recorded throughout the country. The globally threatened birds are as follows:

Endangered species

These are species, which face a very high risk of extinction in the wild in the near future.
Egyptian Vulture *Neophron percnopterus* Basra Reed-warbler *Acrocephalus griseldis*

Vulnerable species

These are species, which face a high risk of extinction in the wild in the medium-term.	
Slaty Egret *Egretta vinaceigula*	Wattled Crane *Grus carunculatus*
Lesser Kestrel *Falco naumanni*	Cape Vulture *Gyps coprotheres*
Lappet-faced Vulture *Torgos tracheliotos*	Corn Crake *Crex crex*
Black Harrier *Circus maurus*	Blue Crane *Anthropoides paradiseus*
White-headed Vulture *Trigonoceps occipitalis*	

Near Threatened

These are species, which are close to qualifying for Vulnerable status.
Lesser Flamingo *Phoenicopterus minor* Pallid Harrier *Circus macrourus*

Denham's Bustard *Neotis denhami*
White-backed Vulture *Gyps africanus*
African Skimmer *Rhynchops flavirostris*
Black-winged Pratincole *Glareola nordmanni*
Great Snipe *Gallinago media*
Latakoo (Melodious) Lark *Mirafra cheniana*
Maccoa Duck *Oxyura maccoa*
Chestnut-banded Plover *Charadrius pallidus*
European Roller *Coracias garrulous*
Red-footed Falcon *Falco vespertinus*
Black-tailed Godwit *Limosa limosa*
Eurasian Curlew *Numenius arquata*

None of the birds of Botswana are endemic – there are only two near-endemics, *viz*. the Slaty Egret, which has approximately 85% of its global population in the Okavango Delta, and the Short-clawed Lark, which has more than 90% of its global population in South-eastern Botswana. Threatened species, especially those that have significant populations in Botswana, are regularly monitored by BirdLife Botswana. For example, the Okavango Delta has the largest single population of Wattled Cranes remaining in the world, and aerial surveys conducted by BirdLife Botswana, in conjunction with the Department of Wildlife and National Parks, in 2001, 2002 and 2003 showed that this population is stable (Craig and St C Gibson, 2001; Craig, 2002; Motsumi *et al*., 2003). Similarly, a study conducted by Brewster *et al*. (in press) shows that the Short-clawed Lark population in Botswana increased in numbers over the past 15 years, while there was little change to the range.

Graph 1 shows the numbers of birds recorded at each site. More than 10,000 birds were recorded at Lake Ngami during 2008, which was the highest number recorded during the year under review. Note that Chobe National Park had a zero record because the recorders did not capture data on birds or did not submit the information for analysis. This shows the importance of recording and submitting the data for analysis. The Makgadikgadi Pans and Linyanti recorded about 100 birds while the Okavango Delta recorded much more than a hundred. The Mannyelanong Game Reserve, which is mainly important for the Cape Vultures, recorded 60. Appendix 2 shows the raw data of species and numbers recorded.

Out of all the IBAs assessed, the three sites which recorded the highest number of birds, are CKGR, Okavango Delta and Lake Ngami. Types of bird species recorded varied from raptors to social birds (graph 2). Two species, which occurred in most sites, were the Lappet-Faced Vulture and the White-Backed Vulture. Their numbers were however independent of each other (graph 3). These were both recorded at CKGR, Makgadikgadi Pans and Linyanti Swamps. The Lappet-faced Vulture was also recorded in the Okavango Delta. Other sites recorded none.

Habitat and habitat quality

Habitat condition is moderate for species identified as trigger species. However, habitat rating is very subjective at an individual recorder level but this is reduced when many records are considered in the analysis. Questionable records are scrutinised before being considered. Graph 4 depicts scores assigned to habitat for different IBAs. The CKGR recorded a score of 3 meaning that it was interpreted to be in a good state while Makgadikgadi Pans, Lake Ngami and Chobe National Park each recorded a score of 2 meaning that the habitat was interpreted

to be in a moderate condition. However the Linyanti Swamps recorded a score of 1 for habitat assessment meaning that the state was interpreted to be poor. In summary, at a national level, the habitats are generally of a moderate condition.

4.1.2 Pressure indicator

Twenty different types of threats were noted and scored accordingly by recorders. The three most important threats were recorded as tourism activities, fires and disturbance to the habitat, all of which had an impact score of 5 out of 9. Flight path and fishing were selected at one site as having a low impact by scoring 1 out of 9 (graph 5). Even though scarcity of water recorded the impact score of 6 out of 9, it was applicable to a smaller area of one site.

Fires are one of the most important threats to IBAs

4.1.3 Response indicator

Botswana total area: 578,150 km² of which 242,120 km² (41.9%) is set aside for conservation. About 17 percent of the country has been set aside as national parks and game reserves, with 20 percent set aside for wildlife management areas. Though this is the case, management of these sites still lacks co-ordinated monitoring be it of species or habitat. Out of the twelve IBAs, only six are protected and the rest are not. Some sites though not protected such as the Tswapong Hills and South-eastern Botswana, hold globally threatened species, namely the Cape Vulture and Short-clawed Lark respectively.

The main part of Sua Pan in the Makgadikgadi Pans where Lesser Flamingos breed in large numbers is also not protected. This is the only site in Botswana and one of four in Southern Africa where flamingos breed. Protected areas also differ in their management processes. In the survey that was conducted in 2008 under the IBA/PA monitoring project, few recorders provided information on the conservation measures so focused review of relevant documents was done.

Lesser Flamingos breeding in Sua Pan (Photo: G McCulloch)

Submissions from recorders regarding responses or conservation measure (Table 4) were varied for different sites. This may be due to varying understanding of the conservation intervention at the site.

4.2 Relationship between Pressure, State and Response

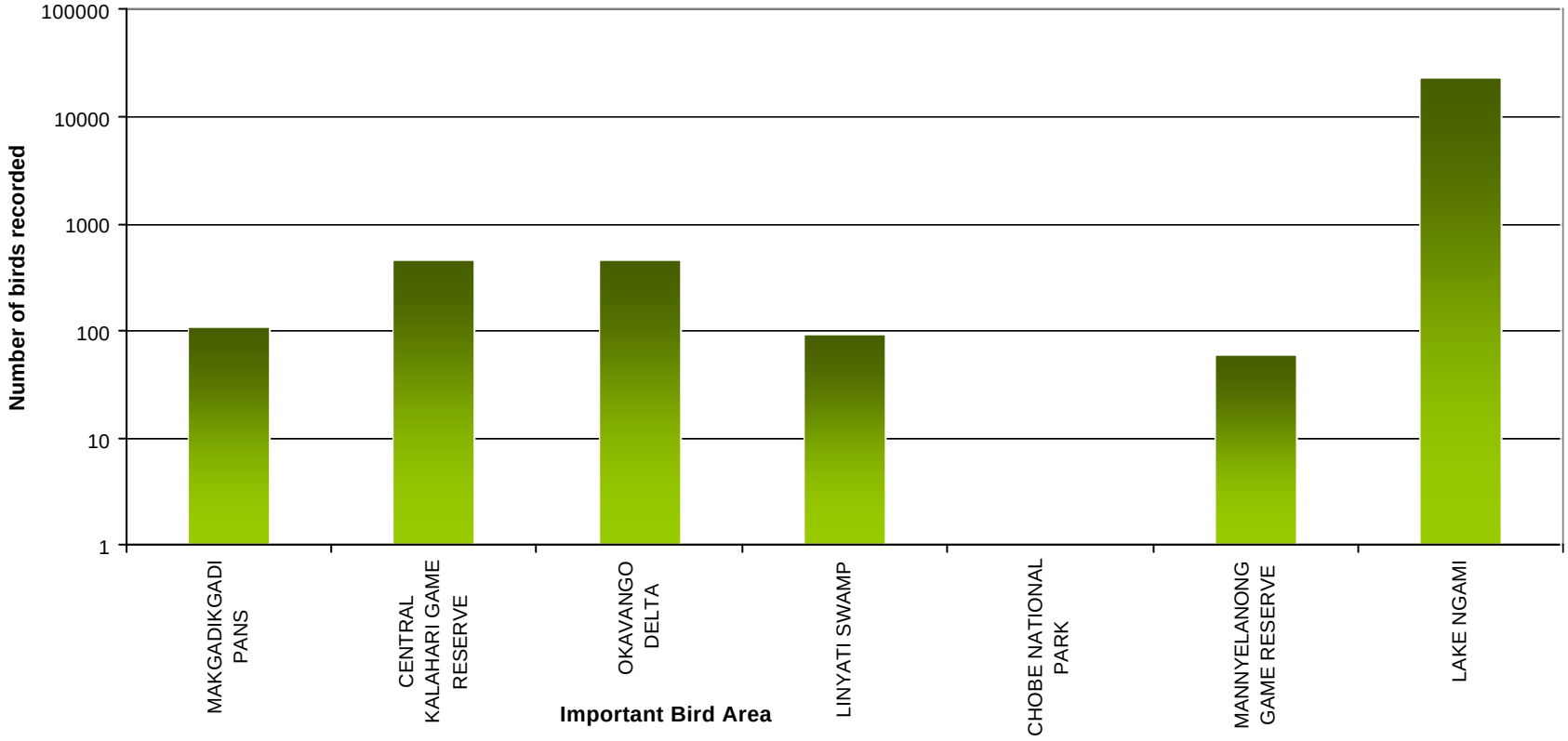
For some areas (such as the Linyanti Swamps and Lake Ngami) there is an indication that there has been a lot of pressure with moderate condition of the state and no or little management interventions (graphs 6 and 7). Sites such as the Okavango Delta recorded good values for state and considerable conservation measures but also a notable amount of pressure. This is interesting because when there are more intervention measures one would expect that pressures would decrease. However this basically depends on whether management interventions are being channelled in the appropriate direction that will address threats at the site. Sometimes, if what causes the ecosystem imbalance is not known, the tendency is to depend on speculations and real threats at the site continue unabated. This is one example where it is really important to document, monitor and assess threats continually.

At a national level, the pressure is still high (graph 8) though the response measure is significant and the state is moderate. And this may call for a review of what exactly it is that we may be doing wrong in terms of our management interventions. It is worth noting that more efforts may not necessarily yield good results, sometimes the best measure is to do nothing. However this applies to ecosystems that have not been interfered with.

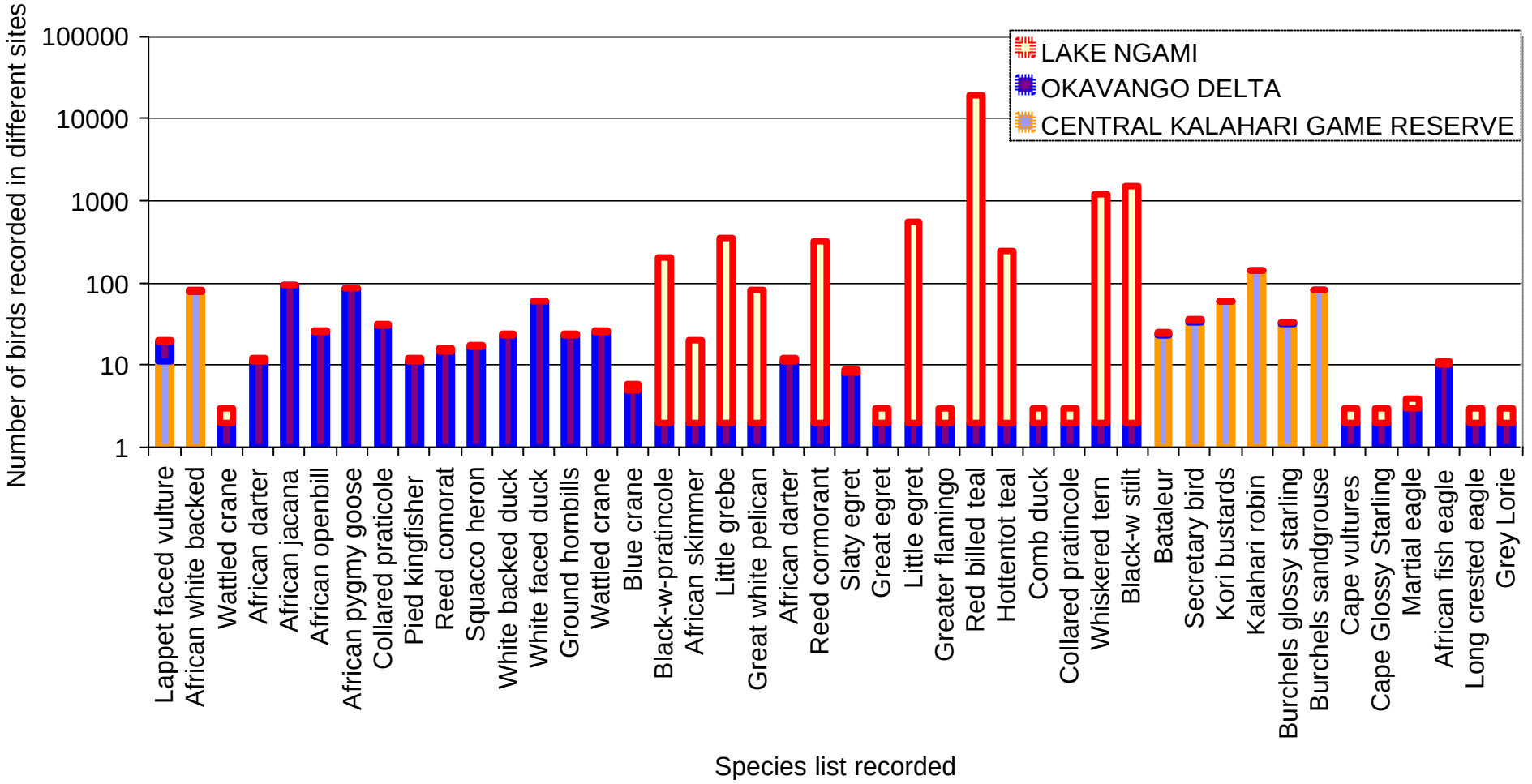
4.3 Graphs and Tables

This subsection presents tabulated results and graphical representation of findings.

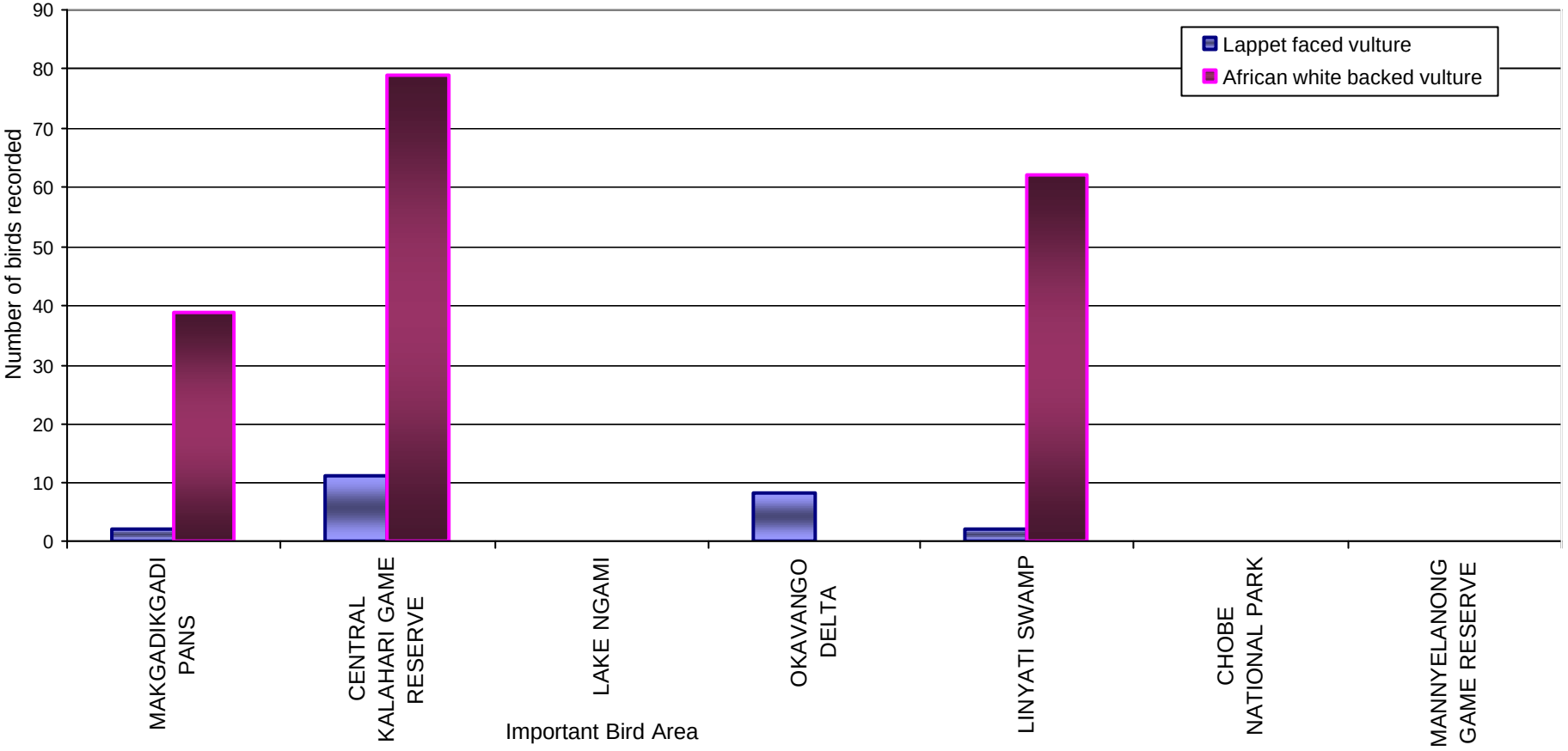
Graph 1. Number of bird recorded per site



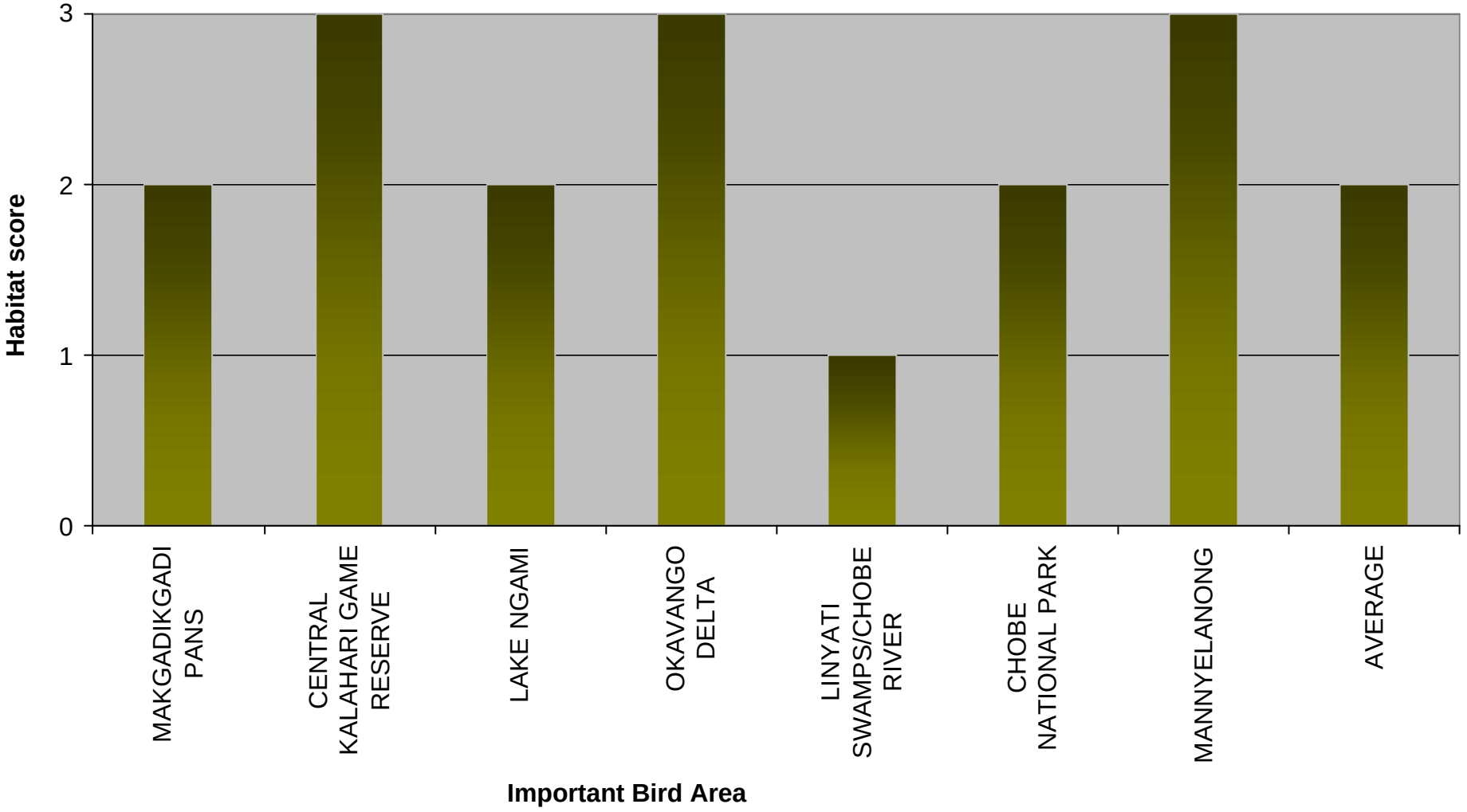
Graph 2. Different birds for three different sites that recorded highest numbers



Graph 3. Comparison of two species, which occurred in most sites; the White-backed Vulture and the Lappet-faced Vulture



Graph 4. Habitat scores for different sites



Graph 5. Impact scores for different types of threats as identified for protected Important Bird Areas

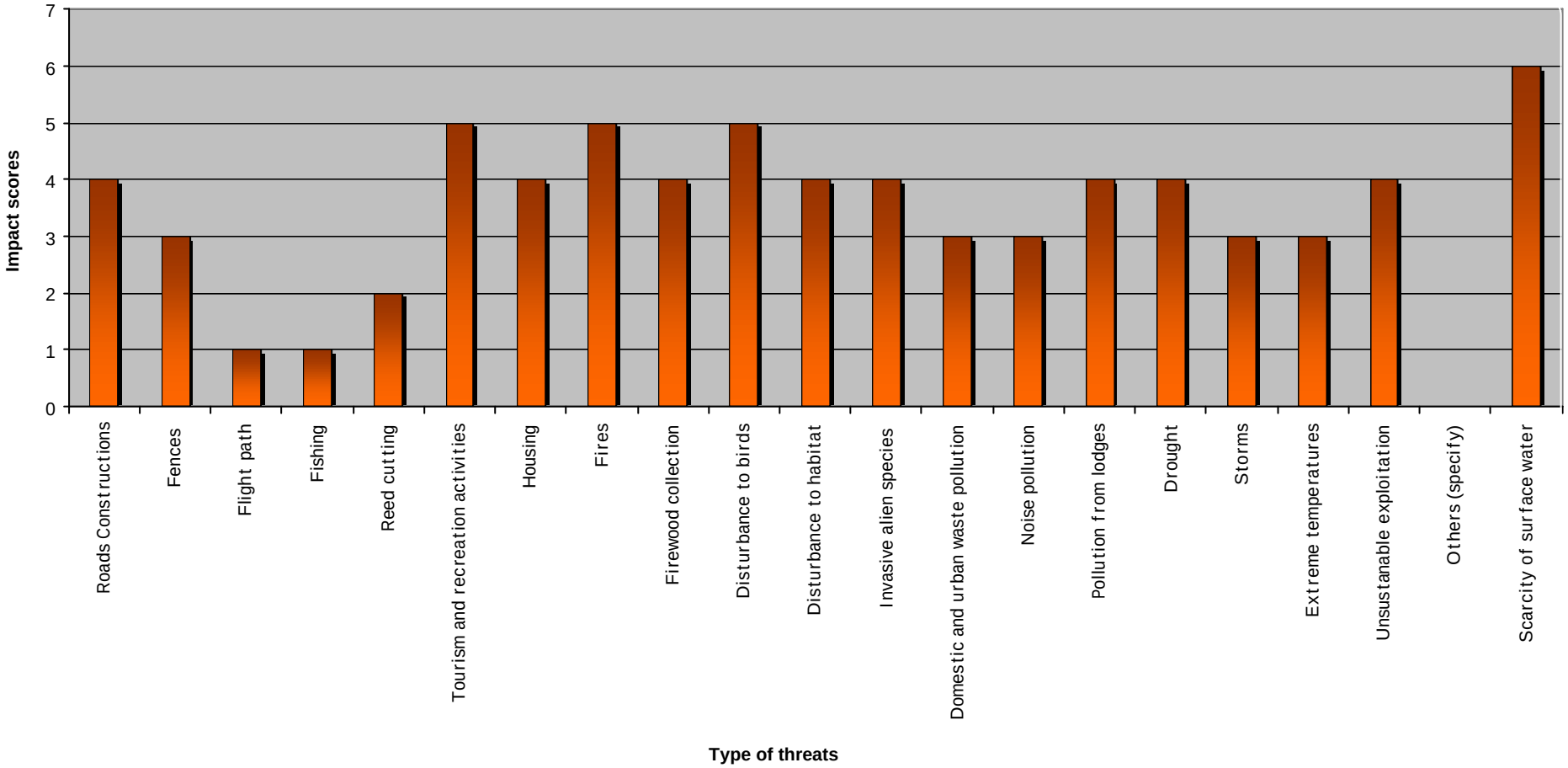


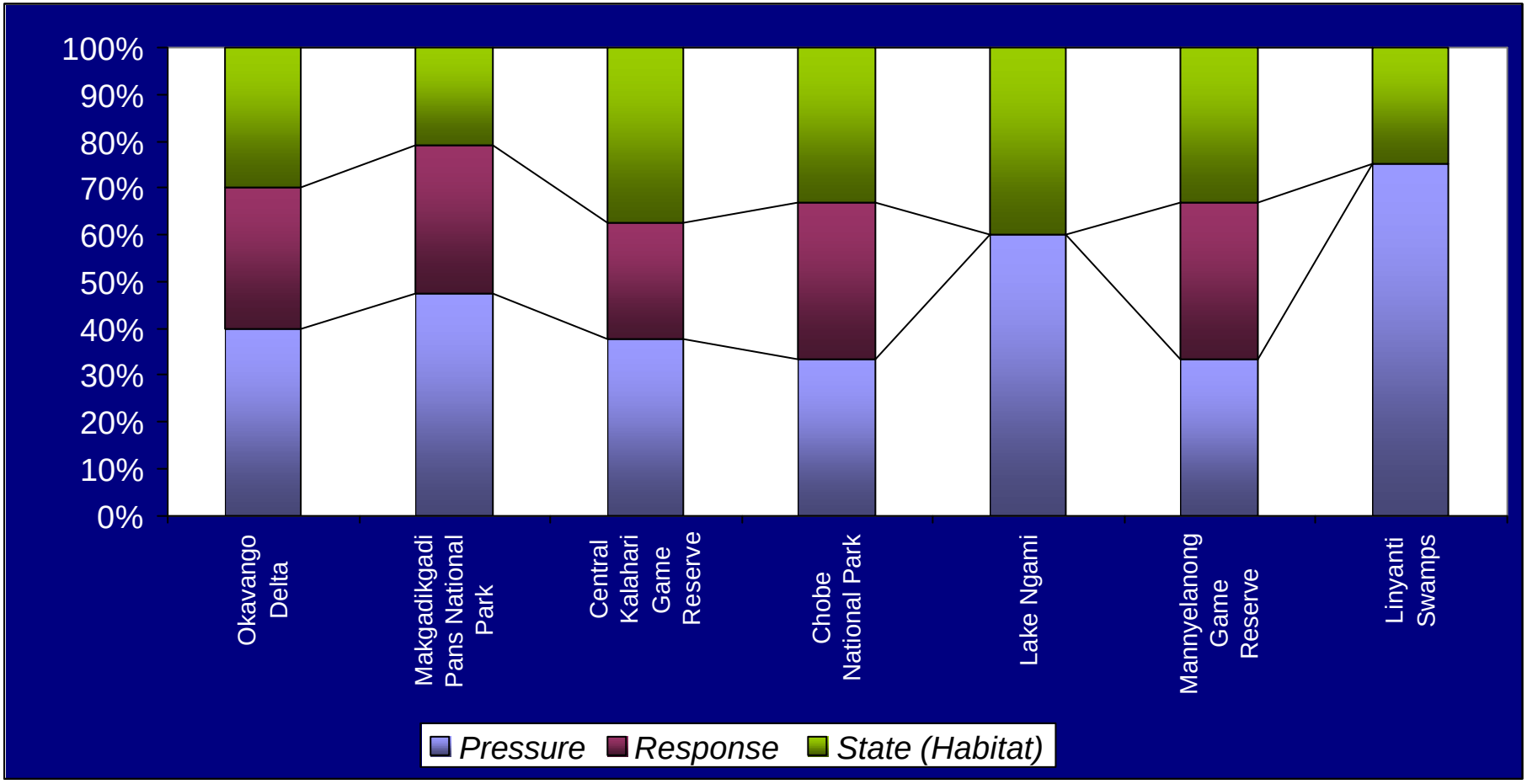
Table 4. Number of recorders who picked options for three main conservation interventions in different protected IBAs

Conservation Intervention	RESPONSES	MAKGADIKGADI PANS	CENTRAL KALAHARI GAME RESERVE	LAKE NGAMI	OKAVANGO DELTA	LINYANTI SWAMP	CHOBE NATIONAL PARK	MANNYELANONG GAME RESERVE
Conservation designation	*Whole area*	63	71		67	100	100	67
	Most of the IBA	13			17			
	Some of the IBA	13						
	Little/none of the IBA	0		100				
Management planning	*A comprehensive and appropriate management plan exists that aims to maintain or improve the populations of the qualifying species*	50	14		42		40	67
	A management plan exists but it is out of date or not comprehensive.	38			17	100	60	
	No management plan exists but the management planning process has begun.	0	57		17			
	No management planning has taken place.	0		100	8			
Conservation action	*The conservation measures needed for the site are being comprehensively and effectively implemented.*	0			25			67
	Substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity	75	71		42		100	
	Some limited conservation initiatives are in place (e.g. action by Local Conservation Groups)	0			17			
	Very little or no conservation is taking place	13		100		100		

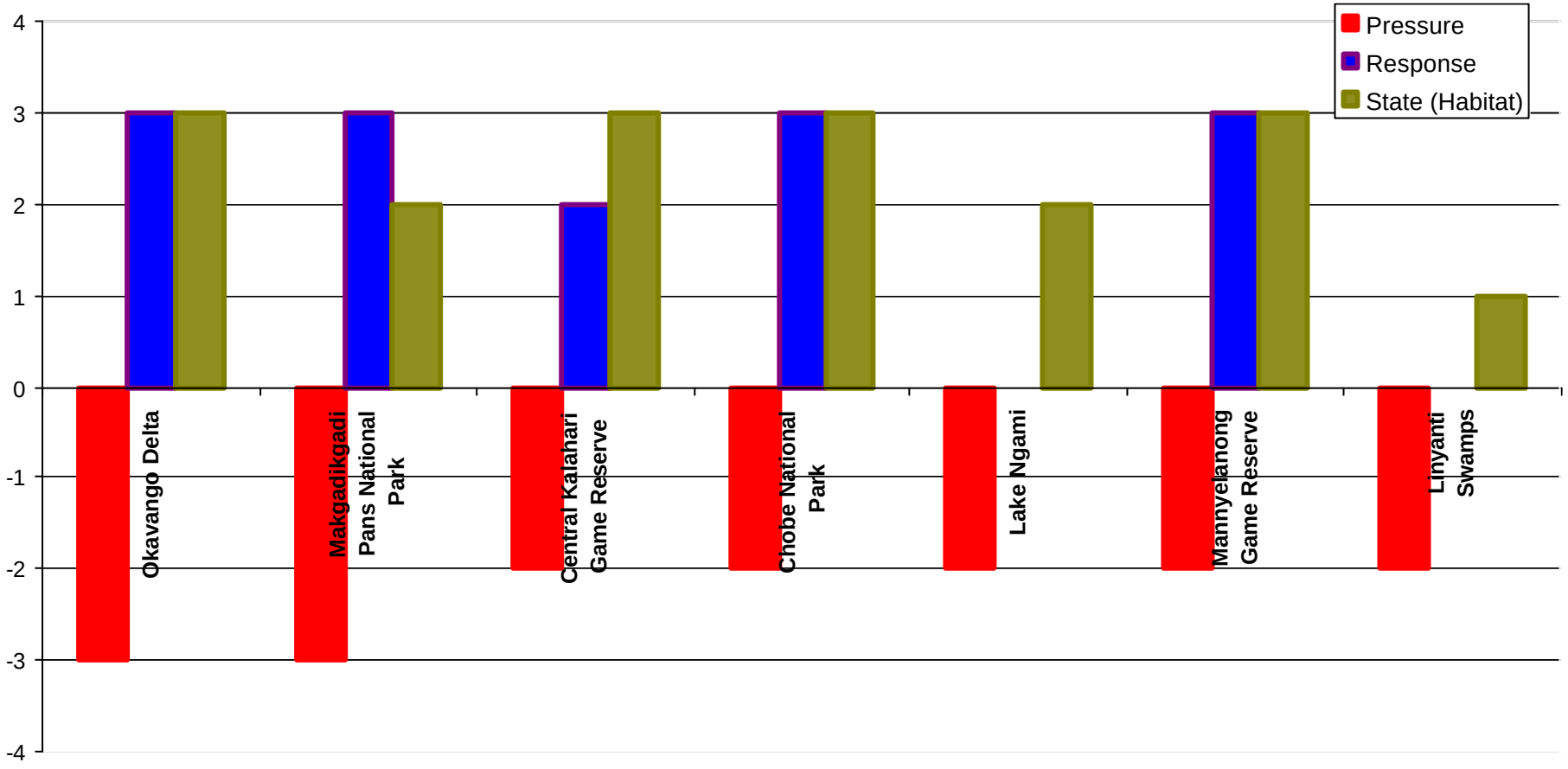
Table 5. Status of Management plans for the different sites

Protected Area	Management Plan	Status of the management plan	Size of the IBA in Ha	Percentage of IBA protected	Stakeholder monitoring the site
Central Kalahari Game Reserve	2003 (Final draft)	Appropriate for the objectives set	5 600 000	100	BLB DWNP
Kgalagadi Trans-frontier Park	1997 (Approved)	Outdated. Tourism development framework produced in 2006. Biodiversity monitoring is tied to revenue generation. Appropriate for the objectives set	2 840 000	100	BLB DWNP
Okavango Delta	2006 (Draft for Moremi Game Reserve)	Appropriate for the objectives set	6 864 000	33	BLB DWNP
Makgadikgadi Pans	1995 (Approved) for Makgadikgadi and Nxai Pans National Park	Outdated. Appropriate for the objectives set	1 200 000	30	BLB DWNP
Chobe National Park	2002 (Final Draft)	Appropriate for the objectives set	1 069 800	100	BLB DWNP
Mannyelanong Game Reserve	1997 (final draft)	Outdated. Appropriate for the objectives set	**c.** 100	100	BLB DWNP

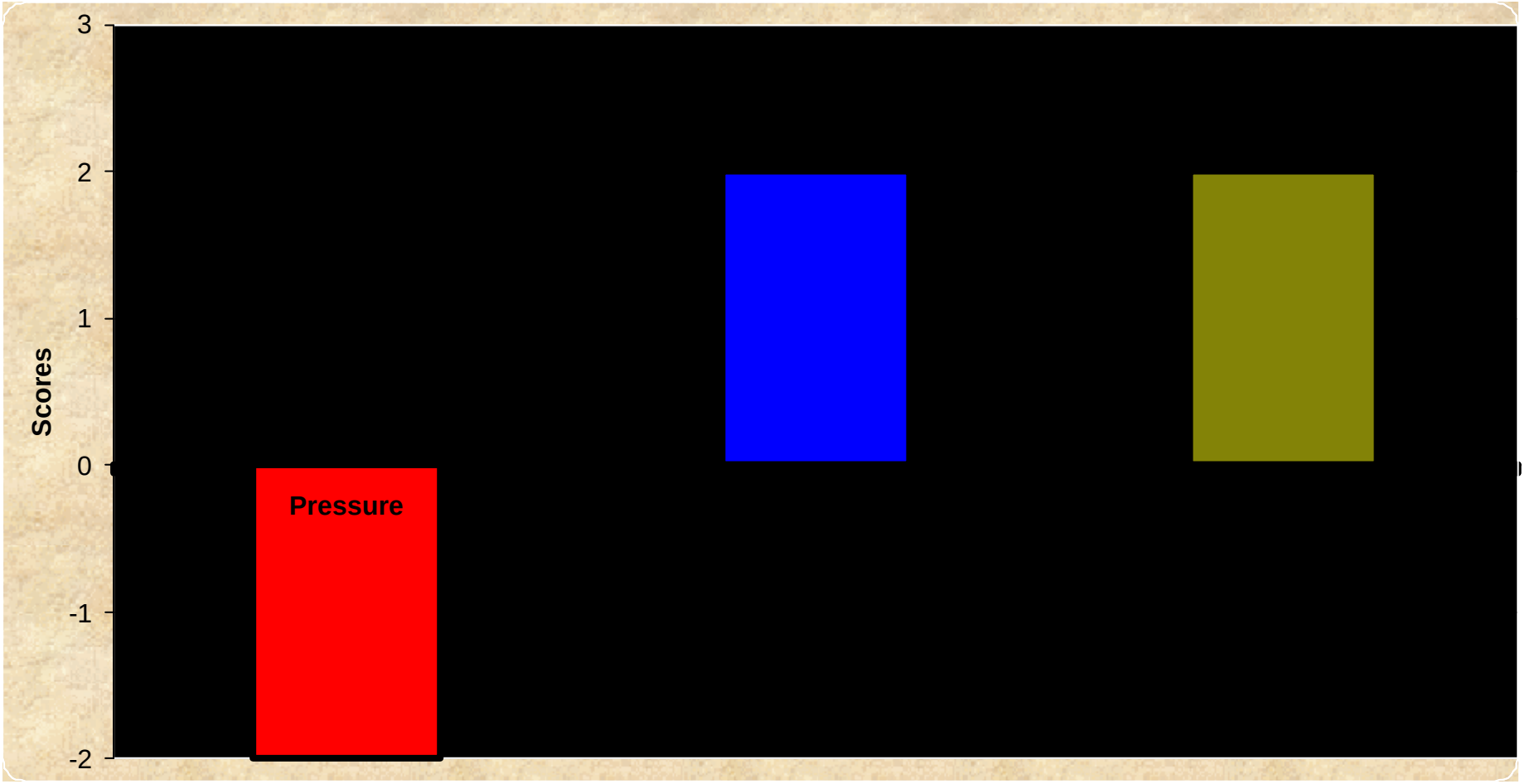
Graph 6. Percentage amount of Pressure State and Response at different sites



Graph 7. Scores of Pressure, State and Response at different sites



Graph 8. A composite of State, Pressure and Response scenario for Botswana protected IBAs in 2008



5.0 CONCLUSIONS

The state of the protected IBAs in Botswana is generally good, since the habitats are undisturbed by human impact. Of the Pressures on these IBAs, fire is the most important since severe fires already affect at least three IBAs, to a large extent. Human induced pressures are negligible due to low human population pressure. Four IBAs overlap completely with existing protected areas, where conservation action is being undertaken by Government following existing management plans; substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity. Research and monitoring in these areas is mainly done by BirdLife Botswana and independent researchers. At present, even unprotected IBAs are subject to minimal threats due to low human population pressures.

6.0 CHALLENGES DURING THE 2008 MONITORING SURVEY

Since this monitoring exercise is the first of its kind, challenges were met and are listed below:

- Recorders lacked significant knowledge on birds and their identification and habitats. This then affected scoring of the habitat for the trigger species because ideally the habitat scored is that utilised by the trigger species.

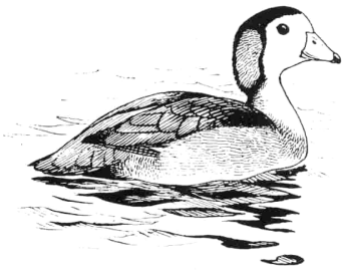
- Habitat quality rating was very subjective and this needs to be investigated and improved.

- There was a difficulty in obtaining data from target groups. Less than 60% of trained people submitted the completed assessment forms.

- The exercise is premised on basic monitoring as opposed to using specific detailed methodologies - hence providing an opportunity to introduce errors due to oversimplification.

- It has been difficult to assess some areas such as the Okavango Delta where there are several trigger species using diverse habitats at once.

- Questions surrounding what actually constitutes a particular habitat type, and defining scoring of the habitat have not been satisfactorily answered.



7.0 RECOMMENDATIONS

Further training is needed on IBA monitoring and bird identification (trigger species), as well as data management for stakeholders.

Site Monitoring Committees need to be strengthened in terms of composition and involvement.

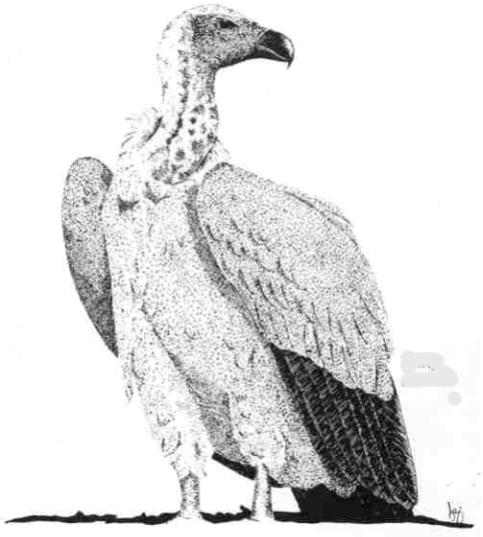
Additional financial and human resources support should be sourced from stakeholders in the implementation of the programme and to ensure the sustainability of the monitoring.

Provide a platform for participants to give feedback on their involvement, and identify ways of motivating participants to continue monitoring.

Organise exchange visits for community participants so that best monitoring practices can be shared.

The most important threats, especially fires, should be considered by managers of sites as priorities for management.

To have a comprehensive picture of the national status quo, the monitoring should be extended to unprotected IBAs. It could also be extended to protected areas that are not IBAs, to be more suited to meeting the CBD requirements on biodiversity status in the protected areas.



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9.0 ANNEXES

Appendix 1. List of main Trigger Species for protected IBAs in Botswana.

SPECIES	Chobe National Park	Okavango Delta	Central Kalahari Game Reserve	Kgalagadi Trans-frontier Park	Mannyelanong Game Reserve	Makgadikgadi Pans	Linyanti Swamps / Chobe River
Lesser Kestrel	X	X	X	X	X	X	X
Pallid Harrier	X	X	X	X		X	
Racket-tailed Roller	X	X					X
Kalahari Scrub-Robin	X	X	X	X		X	X
Broad-tailed Paradise Whydah	X						X
Bradfield's Hornbill	X	X				X	X
Barred Wren-Warbler	X	X	X	X		X	
Coppery-tailed Coucal	X	X					X
Kurrichane Thrush	X	X				X	X
White-bellied Sunbird	X	X	X			X	X
Woolly-necked Stork	X						
Lappet-faced Vulture.	X	X	X	X		X	
Dickinson's Kestrel	X	X					
Chirping Cisticola	X	X					X
Burchell's Starling	X		X	X			
Burchell's Sandgrouse	X		X	X		X	X
Arnot's Chat	X	X				X	X
Meves's Starling	X	X				X	X
Hartlaub's Babbler	X	X				X	X
Stierling's Wren-Warbler	X					X	X
Marabou Stork	X	X					X
Lesser Moorhen	X						
Cape Vulture		X	X		X	X	X
Slaty Egret		X					X
Corn Crake		X					
Black-winged Pratincole		X	X			X	X
Sharp-tailed Glossy Starling		X					
Great Egret		X					X
Squacco Heron		X					
Saddle-billed Stork		X					
White-backed Duck		X					
Lesser Jacana		X					
Black-crowned Night-Heron		X					
African Darter		X					X
Little Egret		X					
African Skimmer		X					

SPECIES	**Chobe National Park**	**Okavango Delta**	**Central Kalahari Game Reserve**	**Kgalagadi Trans-frontier Park**	**Mannyelanong Game Reserve**	**Makgadikgadi Pans**	**Linyanti Swamps / Chobe River**
Yellow-billed Egret		X					
Woolly-necked Stork		X					
Red-billed Teal		X					
Cattle Egret		X					
African Sacred Ibis		X					
Wattled Crane		X				X	X
Brown Firefinch		X					
Great White Pelican		X				X	
Rufous-bellied Heron		X					X
African Pygmy-Goose		X					
Collared Pratincole		X					
Goliath Heron		X					
Black Heron		X					
African Openbill		X					
African Spoonbill		X				X	
Spur-winged Goose		X					
Little Bittern		X					
Fulvous Duck		X					
Long-toed Lapwing		X					
White-backed Night-Heron		X					
Allen's Gallinule		X					
Denham's Bustard				X			
Sociable Weaver				X			
Lesser Flamingo						X	
Chestnut-banded Plover						X	
Greater Flamingo						X	
Kittlitz's Plover						X	
White-throated Robin						X	
White-headed Vulture							X
White-backed Vulture					X		X
Hottentot Teal							X
Miombo Rock Thrush							X

Appendix 2. Numbe rs of the trigger species counted at different sites

SPECIES	Makgadikgadi Pans	Central Kalahari Game Reserve	Lake Ngami	Okavango Delta	Linyanti Swamps	Chobe National Park	Mannyelanong Game Reserve
Lappet-faced Vulture	2	11		8	2		
White-backed Vulture	39	79			62		
Wattled Crane				24	30		
African Darter				10			
African Openbill				24			
African Pygmy-Goose				86			
Collared Pratincole				30			
Reed Cormorant			320	14			
Squacco Heron				16			
White-backed Duck				22			
White-faced Duck				58			
Black-winged Pratincole			200				
African Skimmer			18				
Little Grebe			350				
Great White Pelican			80				
Slaty Egret				7			
Great Egret							
Little Egret			560				
Greater Flamingo							
Red-billed Teal			19000				
Hottentot Teal			240				
Comb Duck							
Whiskered Tern			1200				
Black-winged Stilt			1500				
Bateleur	2	23					
Kori Bustard	11	59		1			
Kalahari Scrub-Robin		143					
Burchell's Starling		32					
Burchell's Sandgrouse		81					
Cape Vulture							56
Martial Eagle				2			

Appendix 3. List of recorders for the 2008 survey

Name	Organization		Site for which information has been availed
	Name	Sector	
Glynis Humphrey	Okavango Wilderness Safaris	Private Sector	Xigera, Chiefs Island
Kgalalelo Moagi	Department of Wildlife and National Parks	Parks Authority	Makgadikgadi Pans
Onkgopotse July	Khwai Development Trust	Community (Site Support Group)	Okavango Delta
Marcus Kajuusa	Department of Wildlife and National Parks	Parks Authority	Makgadikgadi Pans
Ishmael Sikwane	Department of Wildlife and National Parks	Parks Authority	Moremi Game Reserve
Elizabeth Sefako	Department of Wildlife and National Parks	Parks Authority	Moremi Game Reserve
Okar Setswalo	Department of Wildlife and National Parks	Parks Authority	Okavango Delta
Sylvester Masimega	Department of Wildlife and National Parks	Parks Authority	Okavango Delta
Lucas Johannes	Department of Wildlife and National Parks	Parks Authority	Central Kalahari Game Reserve
Justin Soupo	Department of Wildlife and National Parks	Parks Authority	Khutse Game Reserve (included with Central Kalahari Game Reserve)
John Mosenya	Department of Wildlife and National Parks	Parks Authority	Khutse Game Reserve (included with Central Kalahari Game Reserve)
Bethuel Direng	Department of Wildlife and National Parks	Parks Authority	Khutse Game Reserve (included with Central Kalahari Game Reserve)
Morui Kebiditswe	Department of Wildlife and National Parks	Parks Authority	Central Kalahari Game Reserve
Oreemetswe Dingake	Department of Wildlife and National Parks	Parks Authority	Central Kalahari Game Reserve
Mr Ntema			Okavango Delta
Batshabi R Boikanyo	Department of Wildlife and National Parks	Parks Authority	Chobe National Park
Mothusi Jenamiso	Department of Wildlife and National Parks	Parks Authority	Chobe National Park
Benjamin Setlhong	Department of Wildlife and National Parks	Parks Authority	Moremi Game Reserve
Mothonyane Kobamelo	Department of Wildlife and National Parks	Parks Authority	Moremi Game Reserve
K Moroba	Department of Wildlife and National Parks	Parks Authority	Chobe National Park

Name	Organization		Site for which information has been availed
	Name	Sector	
Madimabe M E	Bosele Lake Ngami Conservation Trust	Community (Site Support Group0	Lake Ngami
Zenzele Mpofu	Department of Wildlife and National Parks	Parks Authority	Makgadikgadi Pans, Okavango Delta
Rebecca Ryan			Makgadikgadi pans
Onalenna Selema	Department of Wildlife and National Parks	Parks Authority	Okavango Delta
Neil Taylor	BirdLife Botswana	Non Governmental Organization	Makgadikgadi Pans, Central Kalahari Game Reserve
Motshereganyi Virat Kootsositse	BirdLife Botswana	Non Governmental Organization	Chobe National Park, Makgadikgadi Pans, Central Kalahari Game Reserve
Benjamin Noga	Cape Vulture Environmental Club	Community (Site Support Group)	Mannyelanong Game Reserve
Moemedi Letshabo	Cape Vulture Environmental Club	Community (Site Support Group)	Mannyelanong Game Reserve
Ofentse Nthai	Cape Vulture Environmental Club	Community (Site Support Group)	Mannyelanong Game Reserve

Appendix 4. Biodiversity monitoring form

Help to monitor IBAs - Key sites for biodiversity conservation

PLEASE:

- ✍ Answer the questions below
- ✍ Give details wherever possible
- ✍ Return a completed form once a year if you are resident at a site or a regular visitor, but note that relevant information is helpful, at any time.
- ✍ Consider making use of sketch maps as an additional means of recording key results, such as the precise location & extent of threat, sightings of key species, extent of particular habitats, routes taken and areas surveyed etc.
- ✍ Return the completed form to the BirdLife Botswana or nearest Department of Wildlife and National Parks research office. For details of BirdLife Partners see www.birdlife.org/worldwide or www.birdlifebotswana.org.bw or write to BirdLife Botswana, Private Bag 003, Suite 348, Mogoditshane, Botswana

PART 1. ESSENTIAL INFORMATION (Please use a different form for each site)

Name of the IBA _____ Date _____

Your name _____

Postal address _____

Telephone/fax _____ E-mail _____

What does this form cover? (tick one box)

☐ (a) the whole IBA ☐ (b) just part of the IBA

If (b), which part/how much of the whole area?

_____

Do you live at or around the IBA?

☐ (a) Yes ☐ (b) No

If (b) when did you visit the IBA and for how long?

PART II. MONITORING THE IBA

You don't need to answer all the questions or fill in all the tables - please just put down the information that you have available.

THREATS TO THE IBA ('PRESSURE')

General comments on threats to the site and any changes since your last assessment (if relevant):

In the table below, please score each threat that is relevant to the important birds at the IBA, based on your observations and information, for Timing, Scope and Severity. In the 'details' column, please explain your scoring and make any other comments. Please note any changes in individual threats since the last assessment. If threats apply only to particular species, please say so.

Use the following guidelines to assign scores for Timing, Scope and Severity. The numbers are there to help you score, but are intended as guidance only: you don't need exact measurements to assign a score. For scoring combined threats, Timing, Scope and Severity scores should either be equal to or more than the highest scores for individual threats; scores cannot be less than those allocated to individual threats.

Timing of selected threat	**Timing score**
Happening now	3
Likely in short term (within 4 years)	2
Likely in long term (beyond 4 years)	1
Past (and unlikely to return) and no longer limiting	0

Scope of selected threat	**Scope score**
Whole area/population (>90%)	3
Most of area/population (50-90%)	2
Some of area/few individuals (>10%)	1
Small area/few individuals (<10%)	0

Severity of selected threat	**Severity Score**
Rapid deterioration (>30% over 10 years or 3 generations whichever is the longer)	3
Moderate deterioration (10-30% over 10 years or 3 generations)	2
Slow deterioration (1-10% over 10 years or 3 generations)	1
No or imperceptible deterioration (<1% over 10 years)	0

Notes on threat types

1. Agricultural expansion & intensification. Threats from farming and ranching as a result of agricultural expansion and intensification, including silvi-culture, mariculture and aquaculture. Note that wood and pulp plantations include afforestation, and livestock farming and ranching includes forest grazing. Agricultural pest control and agricultural pollution-specific problems apply to point 5. "Over-exploitation, persecution and control", and point 9. "Pollution" respectively.
2. Residential and commercial development. Threats from human settlements or other non-agricultural land uses with a substantial footprint; resulting in habitat destruction and degradation, also causing mortality through collision. Note that domestic or industrial pollution-specific problems apply to point 9. "Pollution".
3. Energy production & mining. Threats from production of non-biological resources; resulting in habitat destruction and degradation, also causing mortality though collision. Note that renewable energy includes windfarms.
4. Transportation & service corridors. Threats from long narrow transport corridors and the vehicles that use them, including shipping lanes and flight paths; resulting in habitat destruction and degradation, erosion, disturbance and collision.
5. Over-exploitation, persecution & control. Threats from consumptive use of wild biological resources including both deliberate and unintentional harvesting effects; also persecution or control of specific species. Note that hunting includes egg-collecting, gathering includes firewood collection, and logging includes clear cutting, selective logging and charcoal production.
6. Human intrusions & disturbance. Threats from human activities that alter, destroy and disturb habitats and species associated with non-consumptive uses of biological resources.
7. Natural system modifications. Threats from actions that convert or degrade habitat in service of managing natural or semi-natural systems, often to improve human welfare. Note that 'other ecosystem modifications' include intensification of forest management, abandonment of managed lands, reduction of land management, and under grazing. 'Dams & water management/use' includes construction and impact of dykes/dams/barrages, filling in of wetlands, groundwater abstraction, drainage, dredging and canalization.
8. Invasive & other problematic species and genes. Threats from non-native and native plants, animals, pathogens and other microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity (through mortality of species or alteration of habitats) following their introduction, spread and/or increase in abundance.
9. Pollution. Threats from introduction of exotic and/or excess materials from point and non-point sources causing mortality of species and/or alteration of habitats. Note that domestic and urban waste water includes sewage and run-off; industrial and military effluents includes oils spills and seepage from mining; agricultural and forestry effluents and practices includes nutrient loads, soil erosion, sedimentation, high fertilizer input, excessive use of chemicals and salinization; and air-borne pollutants includes acid rain.
10. Geological events. Threats from catastrophic geological events that have the potential to cause severe damage to habitats and species.
11. Climate change & severe weather. Threats from long-term climatic changes which may be linked to global warming and other severe climatic/weather events.

THREAT TYPE	Scores			DETAILS
	Timing	Scope	Severity	
1. Agricultural expansion & intensification Give details of specific crops, *e.g.* oil palm, or animals *e.g.* cattle, & issue				
Annual crops - Shifting agriculture				
- Small-holder farming				
- Agro-industry farming				
Perennial non-timber crops - Small-holder plantations				
- Agro-industry plantations				
Wood & pulp plantations - Small-holder plantations				
- Agro-industry plantations				
Livestock farming & ranching - Nomadic grazing				
- Small-holder grazing, ranching or farming				
- Agro-industry grazing, ranching or farming				
Marine & freshwater aquaculture - Subsistence/ artisanal aquaculture				
- Industrial aquaculture				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in Combination*				
2. Residential & commercial development Give details of type of development & issue				
Housing & urban areas				
Commercial & industrial areas				
Tourism & recreation areas				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
3. Energy production & mining Give details of specific resource & issue				
Oil & gas drilling				
Mining & quarrying				
Renewable energy				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
4. Transportation & service corridors				
Roads & railroads				
Utility & service lines				
Shipping lanes				
Flight paths				
If more than one threat is scored in this section,				

please also score here their Timing, Score and Severity in combination*				
5. Over-exploitation, persecution & control of species Give details of issue				
Direct mortality of 'trigger' species-hunting & trapping				
- Persecution/control				
Indirect mortality (by-catch) of 'trigger' species - hunting				
- Fishing				
Habitat effects - hunting & trapping				
- Gathering plants				
- Logging				
- Fishing & harvesting aquatic resources				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
6. Human intrusions & disturbance Give details of specific activity & issue				
Recreational activities				
War, civil unrest & military exercises				
Work & other activities				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
7. Natural system modifications Give details of the alteration & issue				
Fire & fire suppression				
Dams & water management				
Other ecosystem modifications				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
8. Invasive & other problematic species & genes Give details of the invasive or problematic species & issue				
Invasive alien species				
Problematic native species				
Introduced genetic material				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
9. Pollution Give details of pollution source if known (*e.g.* Agricultural, domestic, industrial) & issue				
Domestic & urban waste water				
Industrial & military effluents				
Agricultural & forestry effluents & practices				
Garbage & solid waste				
Air-borne pollutants				

Noise pollution				
Thermal pollution				
Light pollution				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
10. Geological events Give details of specific events and issue				
Volcanic eruptions				
Earthquakes/tsunamis				
Avalanches/landslides				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
11. Climate change & severe weather Give details of specific event & issue				
Habitat shifting & alteration				
Drought				
Temperature extremes				
Storms & floods				
If more than one threat is scored in this section, please also score here their Timing, Scope and Severity in combination*				
Other If the threat does not appear to fit in the scheme above, give details here of the threat, its source if known and how it's affecting the IBA				
1.				
2.				
3.				

*This is to enable an assessment to be made of the Timing, Scope and Severity for this threat type as a whole, recognizing that the combination of threats within each type may result in higher overall scores for each of Timing, Scope and Severity.

CONDITION OF BIRD POPULATIONS AND HABITATS ('STATE')

General comments on condition of the site and any changes since your last assessment (if relevant):

If you have estimates or counts of bird populations, or other information on the important bird species at the IBA, please summarize these in the table below

Bird species or groups	Population estimate (State whether individuals or pairs)	Details/other comments

If you have information on the area of the natural habitats important for bird populations at the IBA, please summarize it below. Please note any major changes since last assessment in the 'details' column.

Habitat	Current area if known (Include units, *e.g.* ha, km²) or code	Details/comments/major changes

† Habitat area codes: Choose from Good (overall >90% of optimum), Moderate (70-90%) or Very Poor (<40%). If you do not know the actual habitat area, give your best assessment of the current habitat area at the site, in relation to its potential optimum if the site was undisturbed. The percentages are given as guidelines only: use your best estimate. Please justify your coding in the 'details' column.

If you have information on the quality of the natural habitats important for bird populations at the IBA, please summarize it below. Please note any major changes since last assessment in the 'details' column.

Habitat	Quality rating*	Details/comments/major changes

Habitat quality rating: Choose from Good (overall >90% of optimum), Moderate (70-90%), Poor (40-70%) or Very Poor (<40%). Give your best assessment of the average habitat quality across the site, it terms of its suitability for the important bird species. The percentages relate to the population density of the 'trigger' species in its key habitat. Thus 100% means that the species is at carrying capacity in its habitat. The percentages are given as guidelines only: use your best estimate. Please justify your selection in the 'details' column.

CONSERVATION ACTIONS TAKEN AT IBA ('RESPONSE')

General comments on actions taken at the site, including recent changes or developments:

Please tick the box next to the text that applies for each of conservation designation, management planning and conservation action below. Please add any details and where appropriate give a brief explanation for your choice.

CONSERVATION DESIGNATION

☐ Whole area of IBA (>90%) covered by appropriate conservation designation

☐ Most of IBA (50-90%) covered (including the most critical parts for the important bird species)

☐ Some of IBA covered (10-49%)

☐ Little/none of IBA covered (<10%)

Details and explanation

MANAGEMENT PLANNING

☐ A comprehensive and appropriate management plan exists that aims to maintain or improve the population of qualifying species

☐ A management plan exists but it is out of date or not comprehensive

☐ No management planning exists but the management planning process has begun

☐ No management planning has taken place

Details and explanation

CONSERVATION ACTION

☐ The conservation measures needed for the site are being comprehensively and effectively implemented

☐ Substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity

☐ Some limited conservation initiatives are in place (e.g. action by Local Conservation Groups)

☐ Very little or no conservation action is taking place

Details and explanation

Please record any details of Local Conservation Groups (LCGs) (*e.g.* SSGs, Caretaker Groups) established at the site in the table below.

LCG name	Total members	Male members	Female members	Other information

In the table below, please indicate the activities undertaken by any of the LCGs, other CBOs, the BirdLife Partner, Government agencies or other organizations or people at the IBA. This should include current activities, and activities carried out in the last four years.

Notes on action type:

1. Land/water protection. Actions to identify, establish or expand parks and other legally protected areas.

2. Land/water management. Actions directed at conserving or restoring sites, habitats and the wider environment.

3. Species management. Actions directed at managing or restoring species, focused on the species of concern itself.

4. Education & awareness. Actions directed at people to improve understanding and skills, and influence behaviour.

5. Law & policy. Actions to develop, change, influence, and help implement formal legislation, regulations (including at the community level), and voluntary standards.

6. Livelihood, economic & other incentives. Actions to use economic and other incentives and to influence behaviour.

7. External capacity building. Actions to build infrastructure resulting in better conservation, including through civil society development (*e.g.* enhancing community role in decision-making on natural resource use).

ACTION TYPE	Action being undertaken by					DETAILS
	LCG	Other CBO	BirdLife Partner	Government	Other (specify)	
1. Land/water protection						
Site/area protection						
Resource & habitat protection						
2. Land/water management						
General site/area management						
Invasive/problematic species control						
Habitat & natural process restoration						
3. Species management						
General species management						
Species recovery						
Species (re)introduction						
4. Education & awareness						
Formal education						
Training						
Awareness, publicity & communications						
5. Law & policy						
Public legislation						
Policies and regulations						
Private sector standards & codes						
Compliance, enforcement & policy						
6. Livelihoods, economic & other incentives						
Linked enterprises & livelihood alternatives (*e.g.* eco-tourism)						
Substitution (alternative products to reduce pressure)						
Market forces (*e.g.* certification)						
Conservation payments						
Non-monetary values (*e.g.* spiritual, cultural)						
7. Capacity building						
Institutional & civil society development						
Alliance and partnership development						
Conservation finance						
8. Other (*e.g.* surveys, monitoring, research, EIAs)						

Please give any further information or details that you think may be helpful. For example • Number of conservation staff and volunteers • Number of visitors • Revenue generated • Interesting bird records • Lists or details of other fauna or flora • Useful contacts (for research or conservation projects, tourism initiatives *etc.*) • other notes. Please attach or send more sheets or other documents/reports as necessary.

COLLABORATING GOVERNMENT DEPARTMENTS

DEPARTMENT OF WILDLIFE AND NATIONAL PARKS

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