



THE STATE OF UGANDA'S BIRDS

Indicators of
our changing
Environment

2014



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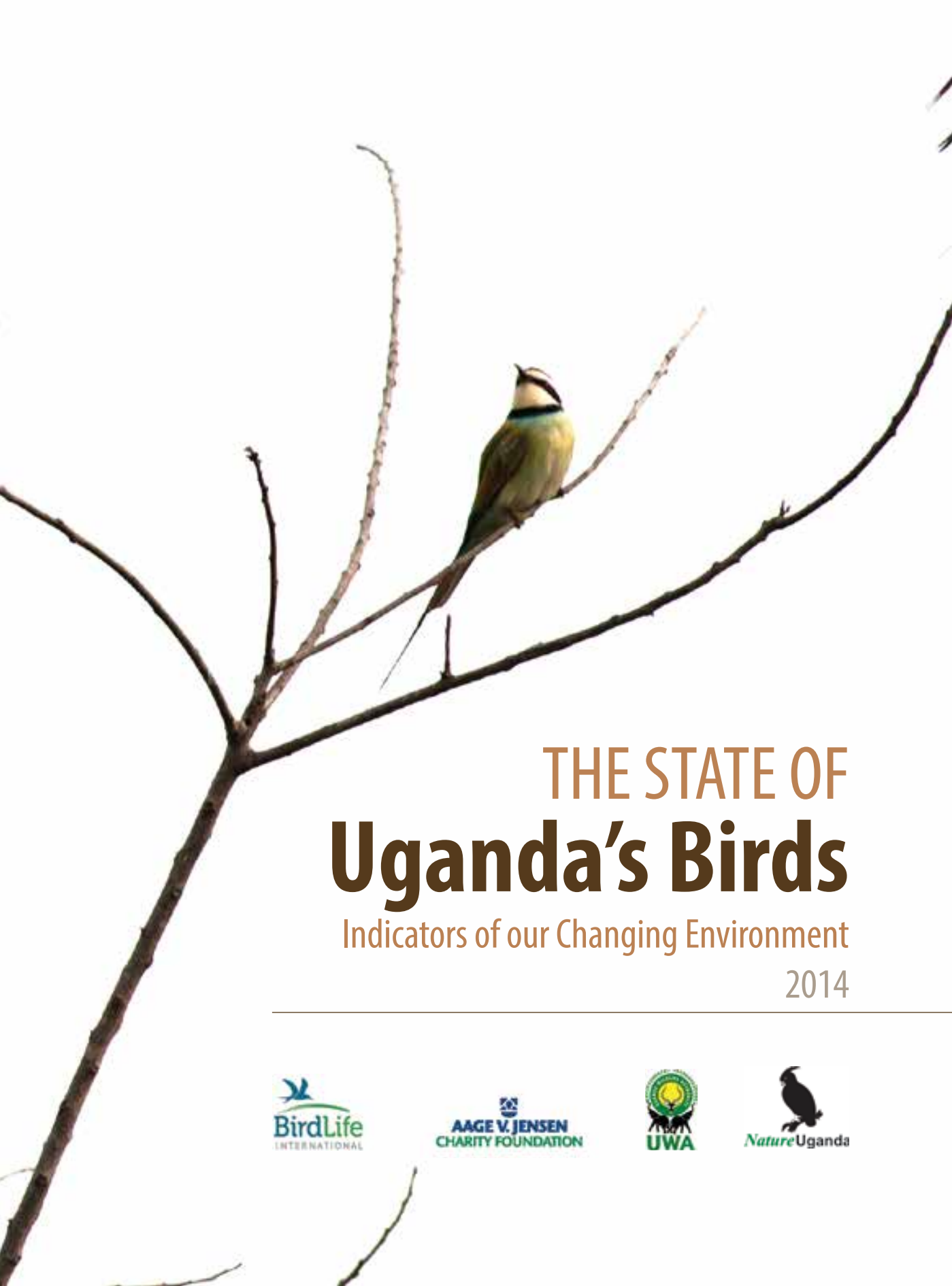
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Yellow-throated Bee-eater.





THE STATE OF **Uganda's Birds**

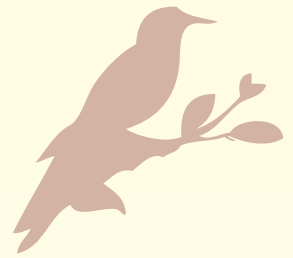
Indicators of our Changing Environment

2014





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List of Acronyms

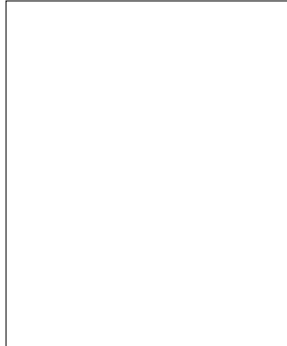


AEWA	African Eurasian waterbird Agreement
AWC	Africa waterbird census
CBD	Convention of Biological Diversity
CITES	Convention of International Trade of Endangered Species
CMS	Convention of Migratory Species
EANHS	East African Natural History Society
EN	Endangered,
GDP	Growth Domestic Product
GDP	Gross Domestic Product
IBA	Important Bird Area
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KNP	Kidepo National Park
LMNP	Lake Mburo National Park
MEA	Multilateral Environmental Agreements
MUIENR	Makerere University Institute of Environment and Natural Resources
NBSAP	National Biodiversity strategy and action Plan
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NGO	Non-governmental Organisation
NU	NatureUganda
QENP	Queen Elizabeth National Park
UN	United Nations
UWA	Uganda Wildlife Authority
VU	Vulnerable
WBI	Wild bird Index
WMD	Wetlands Management Department



Foreword.

Foreword by the Ministry of Tourism, Wildlife and Antiquities



Uganda's economic development is powered by nature-based investments, in particular agriculture, tourism, fisheries and forestry. The Uganda Vision 2040 which is a long -term plan containing aspirations of Ugandans for the next 30 years aims at transforming Ugandan Society from a peasant to a modern and prosperous Country. In addition the National Development Plan which is a medium tern plan for the next five years 2016-2021 prescribes short term measures to strengthen Uganda's competitiveness for wealth creation, inclusive of growth and employment and hinges on priority areas such as Agriculture, Tourism, Minerals, Infrastructure and Human Capital Development.

To contribute to this overall goal the Ministry of Tourism, Wildlife and Antiquities aims to develop and promote tourism, wildlife and cultural heritage resources as targets to enhance Uganda as a preferred tourist destination, with accelerated sector contribution to the national economy. This will be achieved through its affiliate agencies including Uganda Wildlife Education Centre Trust (UWECT), Uganda Tourist Board (UTB), Uganda Wildlife Training Institute (UWTI), Hotel and Tourism Training Institute (HTTI), Uganda Wildlife Authority (UWA).

The Ministry and indeed the government of Uganda can achieve its mission and contribute to overall goal and vision of the country by working together with all stakeholders at international level and national level including national government agencies, local governments, non-government players, Research institutions and the local people.

The State of Uganda's Birds report clearly shows that there is wok to be done to safeguard our natural resources and the heritage on which our economy is based. Although the report focuses on birds, the negative trend shown by many species is likely to be the same for other species of plants and animals. The impact of this loss on tourism development, agriculture and provision of other ecosystem services is immense. However, based on the threats identified in this report, the loss can be avoided or can be halted in line with international commitments and national obligations.

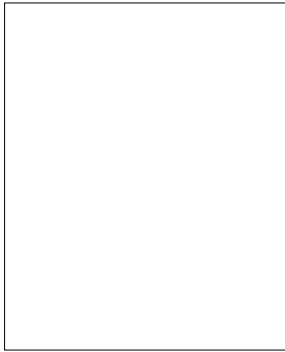
Our resolve to conservation of biodiversity in and outside protected areas is contained in national regulatory frameworks, the laws and policies and the international commitments through international multilateral environment agreements (MEAs).

The work of NatureUganda is commendable in particular research studies that provide evidence on the state of biodiversity in Uganda, in this case the birds. I am confident that this information will be critical in informing decision making processes to mitigate threats and improve conservation of natural heritage.

Hon. Maria Mutagamba
Minister of Tourism, Wildlife and Antiquities

Foreword.

Foreword by the Chairman, NatureUganda



The tenth meeting of the Conference of Parties to the CBD adopted decisions in 2010 in which it was decided that the national reports should focus on the implementation of the 2011-2020 Strategic Plan and show progress achieved towards the Aichi Targets. This report of Status of Birds in Uganda is our response to that decision, and a contribution to showing the worsening biodiversity crisis. The aim of the report is to support national decision-makers and other key stakeholders with detailed and best information available on birds in Uganda.

Since birds are well known to be good indicators of ecosystem health, the state of birds will provide indications of the status of biodiversity in general in the country. Government agencies and many NGOs and specialized institutions have already done much to try to respond to conservation challenges with varying success. Nonetheless, the pressures on biodiversity continue to grow as shown in this report, often with focus targeted to some threatened or charismatic species such as Mountain Gorillas but with fragmented actions to halt biodiversity loss in general. Targeting conservation efforts to safeguard biodiversity, rather than focusing on charismatic species is important and there is need to pose serious questions about how we choose to target our limited conservation resources to maximise impact. Whereas the situation on the ground is much more complex, the results from monitoring response indicate that although investments in conservation have tremendously increased, threats to biodiversity have not reduced but increased. This may highlight the fact that conservation targets are chosen for various different reasons. However, if we do believe that preserving biodiversity should be part of our conservation goals, then our studies show that current spending is fundamentally at odds with what we want to achieve.

Also, we have to acknowledge that we will never have enough resources to protect all species under threat, and hence tough choices will have to be made (the 'Noah's Ark' dilemma). However, an encouraging message from our research is that, correctly targeted, we can still do a lot and save more biodiversity with a relatively small amount of money. We believe the science is clear. More species of birds are declining in Uganda than increasing. This may reflect the status of other animals and plants. The rate of habitat loss, especially wetlands and forests has not yet reduced. Rather, if development projects continue as proposed, the rate of loss of natural wetlands, grasslands and forests is predicted to increase.

The Status of Birds in Uganda report also provides strong evidence of the link between bird population trends and the area and quality of habitats. While the science will continue to be improved, and refined, what is known is already sufficient to use by decision makers.

Dr. Robert Nabanyumya
Chairman, NatureUganda

About the Report

NatureUganda is the Partner of BirdLife International in Uganda. It works on the conservation of nature through research and conservation programmes in many parts of the country. For over 20 years NatureUganda has taken lead on research, monitoring and conservation of birds including identification of the Important Bird Areas (IBAs); the monitoring of birds through the African waterfowl census conducted twice a year and covering over 25 sites; land bird population monitoring covering over 80 sites annually. Other monitoring activities include the biannual vulture monitoring in all the four grassland national parks of Uganda that is MFNP, QENP, LMNP and KNP; raptor monitoring and monitoring of individual species such as the Marabou Stork, Grey Crowned Crane and Grauer's Swamp Warbler.

In order to effectively achieve its intended goal of ensuring protection and conservation of all bird species in Uganda, NatureUganda works together with lead government agencies such as Uganda Wildlife Authority, National Forestry Authority, National Environment Management Authority, Wetlands Management Department and related Ministries as well as national and international non-government organizations. NatureUganda has, in addition, established good working relations with communities through Site Support Groups which are involved in activities to conserve the important sites for the conservation of birds.

Therefore, this report is a culmination of the information collated through these initiatives and the contribution of information from all our partners. The report is our contribution to highlight the plight and status of birds in Uganda and the need to increase our conservation efforts to save our national heritage.

Whereas Uganda has a high biodiversity and in particular bird species richness due to the diverse habitats in the country, the recent history of the country shows tremendous change and habitat loss. This loss of habitat is having a heavy toll on species numbers and distribution. In this report we highlight several examples where there is already evidence of species declines or disappearance due to human activities. Since tourism in Uganda is mainly nature-based and an important factor in income generation for Uganda, the loss of species will not only affect the diversity of species in the country but will have an impact on the country's economic development.

We hope that this document will be used as a tool to raise awareness of biodiversity in Uganda among all the sectors of our society and all ages about the value of these beautiful species and landscapes. They share with us the waters, the forests, the wetlands, the grasslands and the mountains and we have a responsibility to ensure that they live for us to enjoy and for the future generations as well.





Key messages in the report

- By the end of December 2014 when the compilation of the report was finalized, 1057 species has been adequately identified. Although some species may be known from old or few records, Uganda has a small bird watching community and based on knowledge available no evidence that there extinct species
- 80% (847) are resident species expected to be in Uganda more regularly, but suffice to note that some of these species may be rarely seen or recorded
- 20% (236) species are described as migratory species. Such species stay or visit Uganda at some times of the year and move to other regions or countries in other seasons. Such species include Palearctic migrants (move to northern hemisphere such as the White winged Tern that breeds in Siberia or Lesser Black-backed Gulls that breeds in Finland). Uganda is a major destination for migrants due to the diversity of habitat such as wetlands, open water saline craters, various types of vegetation zones and receives probably over 5 million birds from the northern hemisphere annually.
- Other types of migrants include intra African migrants that move within the African Continent such as the Abdim's Stock that travels and breeds in West Africa and the Blue Swallow that travels and breeds in Southern Africa.
- 24 species are threatened with global extinction with 9 in the globally endangered category and 15 in the globally vulnerable category
- No species in Uganda is known to be extinct atleast for the last 100 years. However many species have declined substantially during the last 40 years including the Grey Crowned Crane (the national symbol) which has lost over 80% of its known numbers in 1970s.
- 1004 species are recorded to be of least concern globally. However, based on the regional assessment there areSpecies threatened with extinction at regional level. A national assessment is ongoing which may reveal status of more species at national level
- Uganda has one endemic bird species the Fox's Weaver. However its status is not known and it is very rare in its known range and sites. More research is required to establish the status, stronghold sites so that appropriate conservation measures are taken.
- 34 Important Bird Areas have been identified that when effectively conserved would protect over 90% of bird species in Uganda and over 87% of other plants and animals.

- Some progress has been made in conservation of birds in Uganda and there is evidence that species occurring in protected areas have stable populations or increasing in numbers. However species occurring outside protected areas are declining substantially.
- The main threats to birds in Uganda are habitat loss in particular resource harvesting, agriculture intensification and expansion, grazing, burning, deforestation and wetlands degradation.
- Agricultural landscapes host many species of birds but many species occurring on agricultural land/ farms are in serious decline
- Uganda urban environments still contain many species. Kampala alone will have over 200 species. However environmental unfriendly development such as clearing mature trees that are host large birds such hornbills and turaco and redevelopment of open spaces or public parks is driving away species.
- A few species though have been urbanized especially scavenging birds such as Marabou stork, Pied crow, Black kite, Hooded Vulture. Although they may appear many in towns but have been driven out of the landscape into urban centres.
- Birds are a big attraction to visitors and large birding community around the world. They have become a critical tourism product accounting for large amounts of money into the economy, providing opportunity for employment, and establishment of Medium-sized enterprises and source of income for local communities.
- Many species of birds in Uganda are not well documented and although the birding community is steadily increasing through bird guides and national enthusiasts, there is need for a mechanism to share information and records to inform the current gaps in knowledge of species.
- Wildlife trade has been piloted in Uganda for over 15 years. However, there is little or no scientific basis on which quota is provided. Care needs to be taken or precautionally principles applied on species for which little information is available or suspend trade until a specific policy on wildlife trade has been promulgated.
- Finally, birds are probably better known and documented than other species of plants and animals. Nonetheless there is needed for improved knowledge on ecology, population status and movement of some key species such the Shoebill.



Uganda is commonly referred to as the Pearl of Africa due to its magnificent natural scenery, diversity of wildlife and a rich mosaic of tribes and cultures. The southern part of the country covers the northern shores of Lake Victoria, shared with Kenya and Tanzania, situating the country in the African Great Lakes region.

Uganda also lies within the Nile basin, and has a varied but generally equatorial climate. It experiences a temperate climate even though the majority of the country is within the tropics with temperatures ranging from 16 - 26° C for the majority of the year (April - November), but reaching 30° C and above in the warmest months (December- March). Ecologically, Uganda lies at the confluence of the East African savannah with the West African jungle and northern Africa arid regions. This makes Uganda an ecotone of a diverse range of habitats and weather conditions resulting in a high diversity of plants and animals. (Therefore Uganda is the only safari destination whose range of forest primates is as impressive as its selection of plain antelopes, and a vast bird population of more than 1,000 species.) Situated at the geographical heart of the African continent, Uganda has long been a cultural melting pot, as evidenced by the existence of 30-plus different indigenous languages belonging to five distinct linguistic groups, and an equally diverse cultural mosaic of music, art and handicrafts (ref..). The official language of Uganda is English. Luganda, a central Ugandan language, is widely spoken across the country, and multiple other languages are also spoken including Lusoga, Runyoro, Runyankole Rukiga, Luo and many others.

Birds of Uganda

Uganda holds at least 1050 confirmed bird species (Carswell et al. 2005, NatureUganda 2012), representing almost half of the 2250 species recorded on the African continent (Fry & Keith 2004) Given Uganda's relatively small size in surface area compared to many other Africa countries, this makes Uganda one of the richest countries in Africa in terms of species per unit area. The diversity of species is a result of the location of Uganda on the confluence of major vegetation zones at the heart of the continent and with varied climatic conditions. Uganda is indeed a microcosm of the continent with the only absentees being the sea, the desert and associated bird species.

Uganda Bird Checklist

For some time now, it was realized that an up to date checklist of 'Birds of Uganda' was needed. NatureUganda, through its Birdlife working group published the first ever comprehensive Ugandan Bird checklist in 2012. It is hoped that this list will prove useful to researchers, conservation practitioners, birders and also visitors to Uganda. It also must be stressed here that World Bird taxonomy is still evolving and that future lists may bear a number of differences on total species, scientific and common names of the birds.

Currently NatureUganda has refrained from following the "New Order" of families in bird nomenclature and have preferred to follow established patterns to aid observers who periodically use



the established English names in the literature available such as Uganda Bird Atlas or Birds of East Africa by Stephenson and Fanshawe. The checklist includes Global and Regional status and category of threat (Critically Endangered, Endangered, Vulnerable, Near Threatened, and Data Deficient).

Due to environmental changes in Uganda with the increasing population, degradation of the environment through cutting down of trees and draining of wetlands and therefore loss of habitats, several bird species which were once common such as rails, crakes and forest dwellers are now very scarce.

Nonetheless, some species that had not been seen before in some areas have been observed by the increasing bird watching community. For example the following species have been added to Uganda' list in the last 20 years; Saker Falcon, Red-footed Falcon, Wattled Crane, Pacific Golden Plover, Great Knot, White-eyed Gull, Thick-billed Cuckoo, Akun Eagle Owl, Crested Barbet, Yellow Penduline Tit, Ansorges Greenbul, Boran Cisticola, Southern Black Flycatcher, House Sparrow, Golden-napped Weaver, Orange-cheeked Waxbill and the Blue-capped Cordon-bleu. This may indicate a range extension of some species or a measure of vagrancy to new areas.





State of Birds In Uganda

About Uganda Birds

The checklist of birds of Uganda stands at approximately 1050 since 2015. Among the country list of species, about 190 are regular migrants including those from the Palearctic region (137) and the intra-African migrants (54). The majority of birds in Uganda (815) are resident species and breed in the country. A small proportion of the migrants have also been recorded breeding in the country although reliable data on the extent of this occurrence is scarce (Carswell et al. 2005).

More species on Global Red data list

Birds in Uganda have been assessed at regional level (Bennun et al 2000) and at the International (BirdLife International 2014) to determine their conservation and threat status. (Table 1) shows the list of globally threatened species in Uganda's as listed on the IUCN Red List. Uganda has 24 (2%) globally threatened species and 29 (3%) Near-threatened species with the rest of the species being of least concern. The globally threatened species include 9 endangered species and 15 vulnerable species. The Endangered species include the country's national bird, the Grey-crowned Crane and three of the vulture species in Uganda; White-backed Vulture, Rüppell's Vulture and Hooded Vulture.

On the regional level, 73 species are regionally-threatened while 118 are either Near-threatened or of regional responsibility (Bennun and Njoroge 1996). Uganda has not developed its national threat classification for birds, an effort that may improve the outlook of species at national level.

Whereas Uganda still has some very pristine or relatively intact environments capable of supporting biodiversity, many species are declining rapidly nationally and regionally, mainly as a result of habitat destruction and degradation.

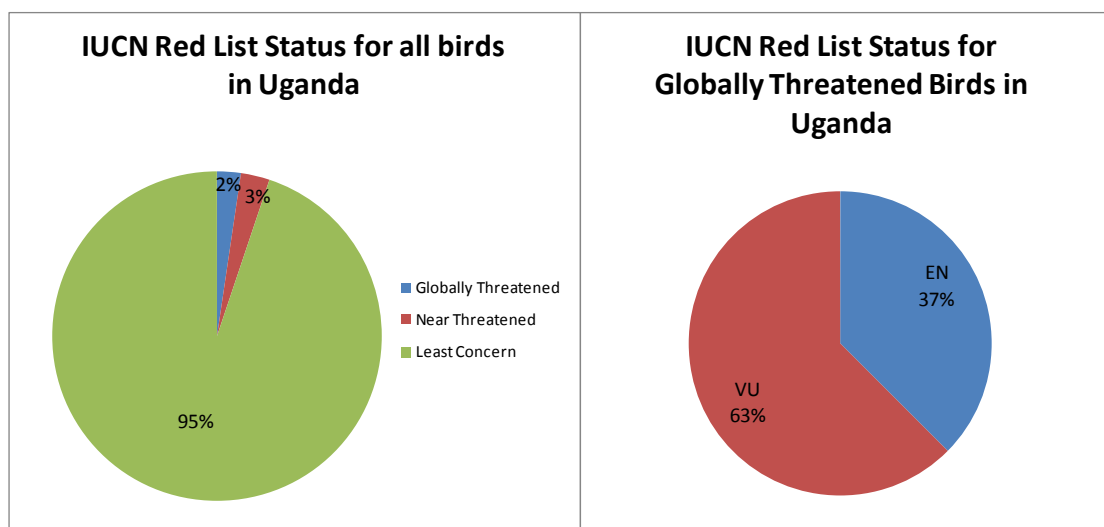


Figure 2: BirdLife International (2014) <http://www.birdlife.org/datazone/country/uganda..>

Table 1: List of Globally threatened birds of Uganda: EN= Endangered, VU= Vulnerable.

Scientific name	Common name	Red List Category
<i>Acrocephalus griseldis</i>	Basra Reed-warbler	EN
<i>Ardeola idae</i>	Madagascar Pond-heron	EN
<i>Balearica regulorum</i>	Grey Crowned-crane	EN
<i>Bradypterus graueri</i>	Grauer's Swamp-warbler	EN
<i>Eremomela turneri</i>	Turner's Eremomela	EN
<i>Gyps africanus</i>	White-backed Vulture	EN
<i>Gyps rueppelli</i>	Rüppell's Vulture	EN
<i>Necrosyrtes monachus</i>	Hooded Vulture	EN
<i>Ptilopachus nahani</i>	Nahan's Partridge	EN
<i>Apalis karamojae</i>	Karamoja Apalis	VU
<i>Balaeniceps rex</i>	Shoebill	VU
<i>Bucorvus leadbeateri</i>	Southern Ground-hornbill	VU
<i>Chloropeta gracilirostris</i>	Papyrus Yellow Warbler	VU
<i>Circaetus beaudouini</i>	Beaudouin's Snake-eagle	VU
<i>Cryptospiza shelleyi</i>	Shelley's Crimson-wing	VU
<i>Falco fasciinucha</i>	Taita Falcon	VU
<i>Hirundo atrocaerulea</i>	Blue Swallow	VU
<i>Muscicapa lendu</i>	Chapin's Flycatcher	VU
<i>Polemaetus bellicosus</i>	Martial Eagle	VU
<i>Pseudocalyptomena graueri</i>	African Green Broadbill	VU
<i>Psittacus erithacus</i>	Grey Parrot	VU
<i>Sagittarius serpentarius</i>	Secretarybird	VU
<i>Torgos tracheliotos</i>	Lappet-faced Vulture	VU
<i>Trionoceps occipitalis</i>	White-headed Vulture	VU

BirdLife International (2014) <http://www.birdlife.org/datazone/country/uganda>.

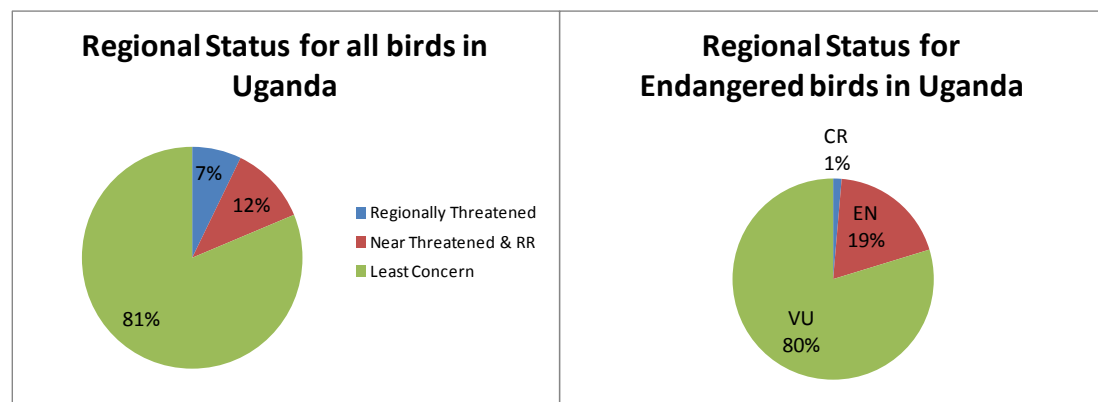


Figure 3: Regional status categories adapted From: Bennun & Njoroge 1996

Where to watch birds in Uganda

Uganda bird atlas

Basing on habitat associations, the Uganda Bird Atlas categorises 18% of the species as Forest interior species (FF), 12% as forest dependent species (F) and 10% as forest edge species (f) (Carswell et al., 2005; Bennun at al. 1996). A further 22.5% of the total species in Uganda are classified as water or wetland related species. However, it is important to note that over 50% of the bird species in Uganda are not categorized under any classification.

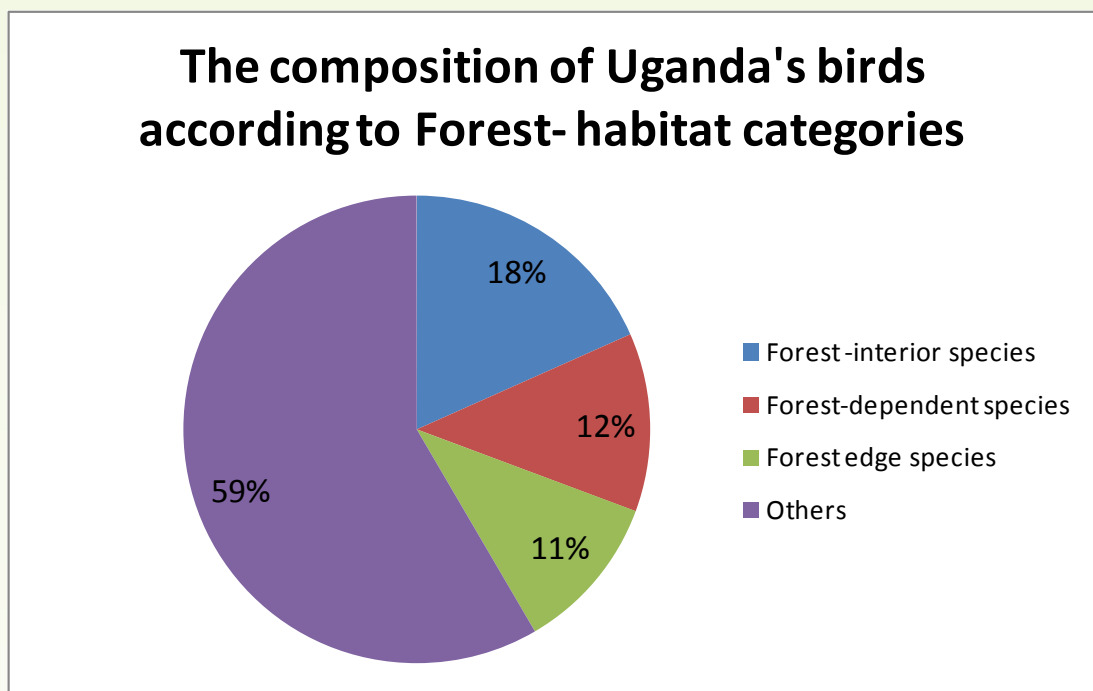


Figure 4: Based on Data from the Uganda Bird Atlas; Carswell et al. 2005

Unlike in the European setting, there is no clear documented definition of birds in some categories like Farmland birds, garden birds and urban birds in Uganda, the reason being that there is no clear-cut distinction in these habitat types in Uganda. Most of the urban centres remain well vegetated with a good number of trees; the farmlands and gardens are interspersed with homesteads and large-scale farming practices in the country are still limited in scope in different parts of the country.

Twenty years of monitoring water birds points to conservation priorities

There have been recent advances in estimating the size and status of waterbird populations at the global level. The main objective of waterbird counts is to identify critical species or populations and protect wetlands important for those species and other resources within the habitats. In addition, many waterbirds are migratory and their conservation is a shared responsibility among all the countries along their flyways. Monitoring of waterbirds is conducted in January and July of every year and NatureUganda has undertaken this activity on selected sites since the 1990s.

Identifying Important Bird Areas and Ramsar sites

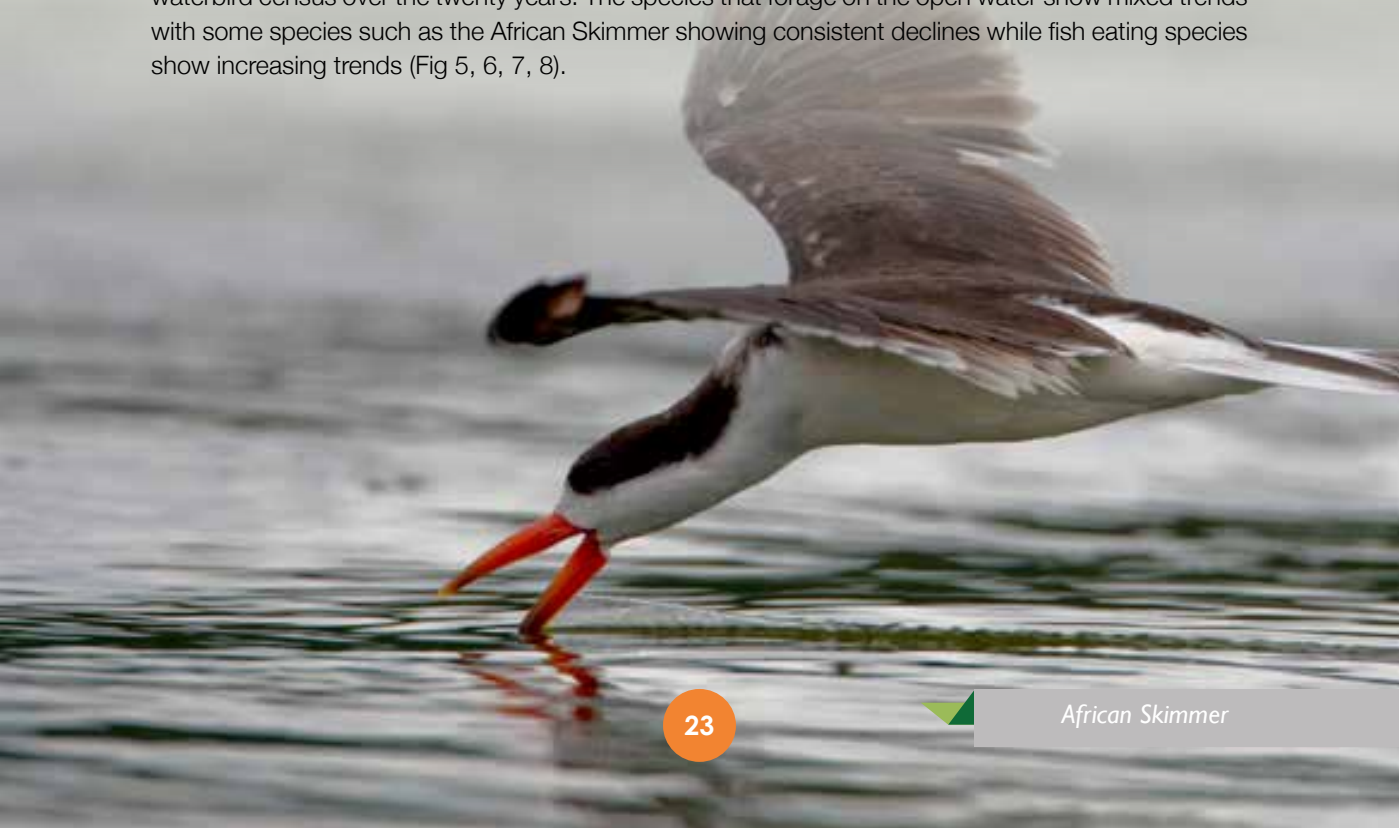
The data from waterbird monitoring contributed to the identification of Important Bird Areas (IBAs) in 2001 and these sites have since become priority areas for conservation in the country. Subsequent studies have shown that the IBAs in Uganda contain over 87% of Uganda's biodiversity, indicating that IBAs are Key Biodiversity Areas (KBAs) (Brook et al 2001).

Waterbird monitoring also covers protected areas such National Parks and Wildlife Reserves. Therefore data is shared with government agencies responsible for nature conservation such Uganda Wildlife Authority, National Environment Management Authority or Wetlands Management Department to support development or implementation of government policies.

The data from waterbird monitoring and other studies (Byaruhanga 2005) have also contributed to the identification of wetlands of international importance, referred to as Ramsar Sites. Government has already instituted measures to protect these sites including the development of management plans. In total, over 30 sites have been monitored regularly for 20 years. These sites fall under different national protection status and management regimes. All national parks with water bodies and 11 Ramsar sites have been monitored.

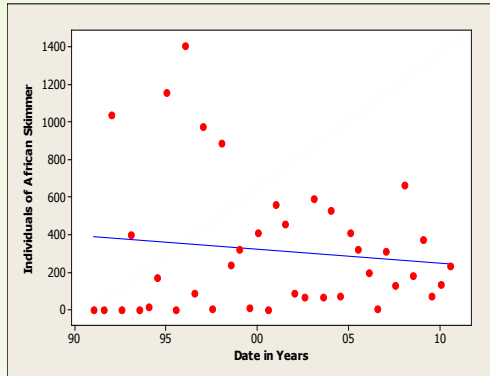
Population trends of selected species or groups of species

Trends of species and groups of species have been assessed and show that various species have reacted differently to the changes in environment at different times. The species and groups considered include African skimmers, flamingos, gulls and terns, kingfishers, pelicans, cormorants, raptors, storks, herons, ducks and geese. These were selected because of their roles in the ecosystem in particular as indicators of the habitats in which they occur. The main causes of the declines are habitat degradation and or destruction. The graphs below will show trends of some of the species recorded during the waterbird census over the twenty years. The species that forage on the open water show mixed trends with some species such as the African Skimmer showing consistent declines while fish eating species show increasing trends (Fig 5, 6, 7, 8).



Population trends of selected species or groups of species

African Skimmer



Lesser Flamingo

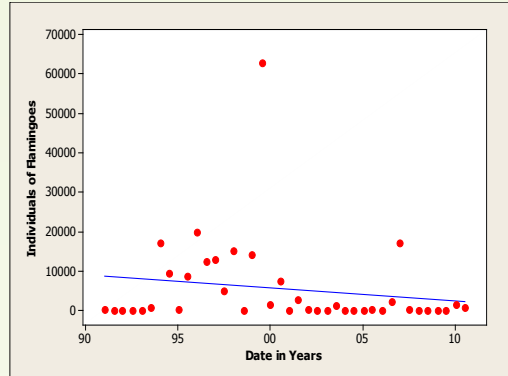
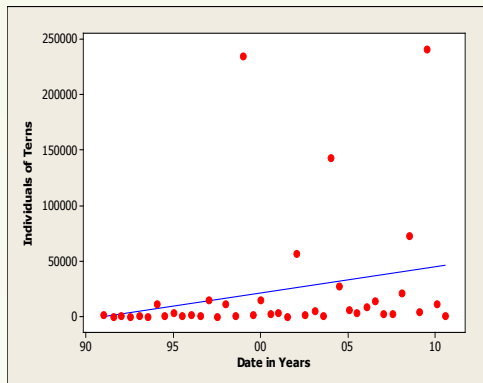


Figure 5: IUCN category species -African Skimmer and Lesser Flamingo are globally threatened species and show decreasing trends

Gulls



Terns

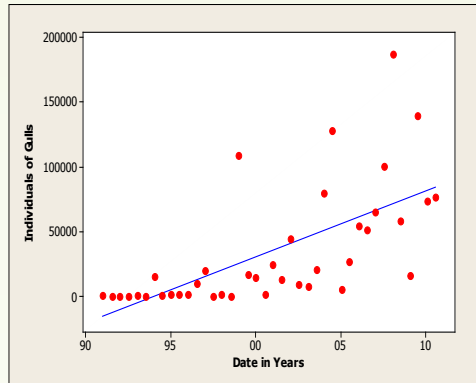
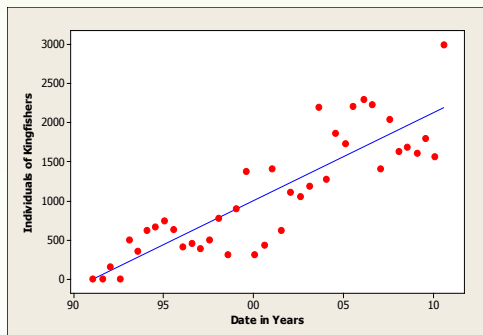
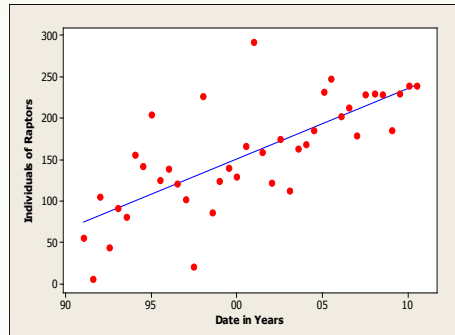


Figure 6: The gulls and terns represent mostly the migrant groups and they show increasing trends in their populations over the 20 years.

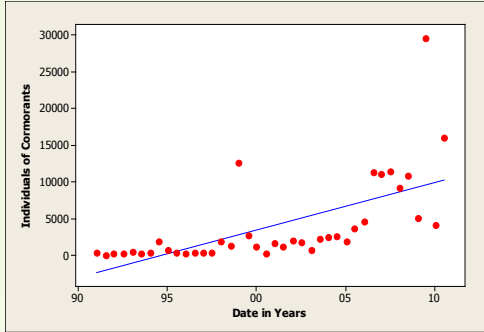
Kingfishers



Raptors



Cormorants



Pelicans

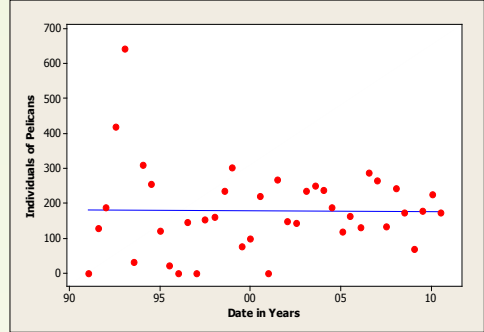
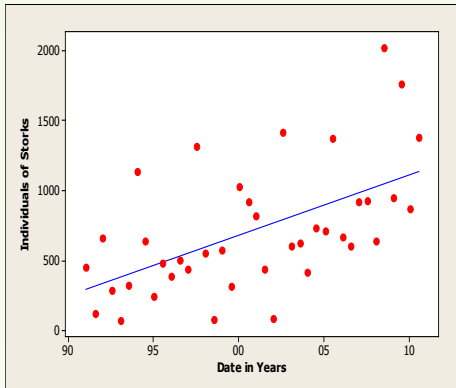
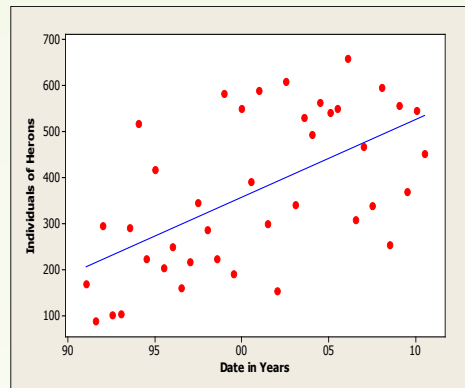


Figure 7: Fish eating species are good indicators of ecosystem health since they sit on top of the food chain. This group seems to represent increasing population trends in kingfishers, raptors, and cormorants, while the pelicans show a stable population.

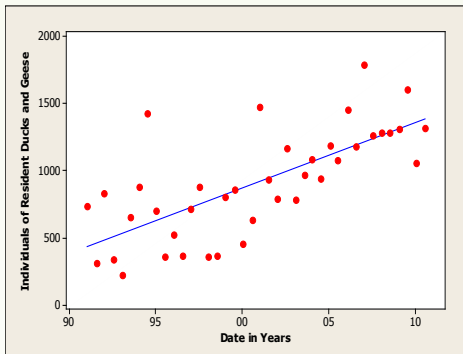
Storks



Herons



Resident Ducks and Geese



Migratory Ducks and Geese

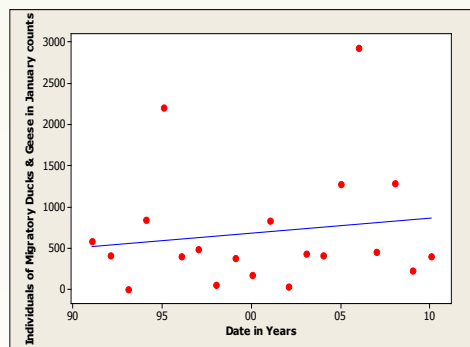


Figure 8: Herons and storks represent more resident groups and they show increasing population trends. In the same way, resident ducks and geese represent an increasing population but the migrants show a less significant trend than the resident groups

The tragedy of the Grey-crowned Crane:

From a wide spread species to globally endangered in less than 40 years

Despite being the national bird for Uganda and flying high on the national flag, the population of the Grey-crowned Crane *Balearica regulorum* has plummeted by 80% since the 1970s. Its habitat is seriously degraded and quickly disappearing. Its population has drastically reduced from more than 35,000 birds of the 1990s to less than 13,000 individuals as per the estimates of 2010. The Grey Crowned Crane is declining both nationally and globally (listed as Endangered on IUCN Red List). The trend is also reminiscent of the status of the seasonal flooded wetlands, the main habitat for the species.

However, surveys show that Cranes are also threatened by illegal trade, use in witchcraft and domestication. Whereas the records since 2000 show signs of recovery due to increased public awareness, there is need to develop a national species action plan that will guide the country on protection of its national flagship species. The Species Action plan will define conservation action such as designation of sites important for cranes, stopping trade and the use of the species or its products for witchcraft.

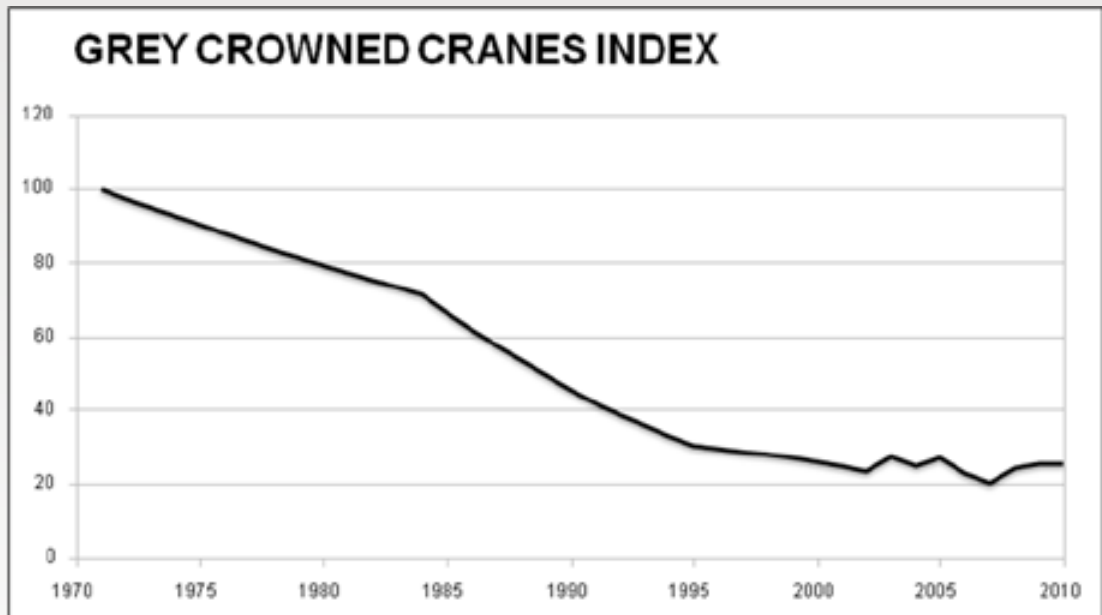


Figure 9: Population trends of Grey Crowned Crane; adopted from MUIER 2011



Migratory birds

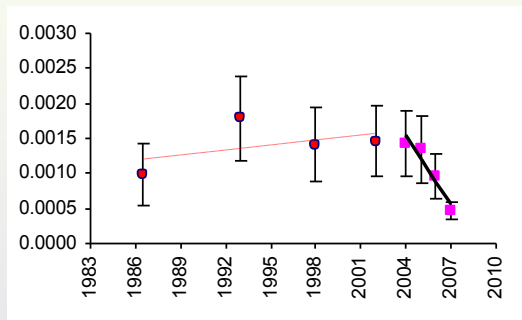
Uganda as a major stop over point and destination for migratory birds

Uganda has nearly 100 migratory waterbirds of which 82 are Palearctic and 17 are Afro-tropical migrants. Large numbers of waterbirds in particular gulls, terns and ducks arrive in large flocks in the period September-October and remain in the country until March.

Migratory waterbirds utilise interconnected networks of wetland sites for feeding during their stay or movement between the wintering and breeding areas. The network of wetland sites act as refueling points during the long periods of travel back to the Palearctic breeding regions. Whereas Uganda has made tremendous efforts to conserve wetlands in the country through appropriate legislation and designation of critical areas, the protection of migratory birds requires a combined international effort along the flyways.

Fig 10 clearly indicates that migratory waterbirds have declined in numbers since 2004 and the decrease continues to accelerate. Whereas the trigger could be beyond Uganda, the decline also calls for increased efforts and vigilance in protecting Uganda's wetlands. Similarly, although the populations of Afrotropical migrants remain stable, increased efforts to protect habitats will maintain or improve the diversity.

a) Palearctic migrants



b) Afro-tropical migrants

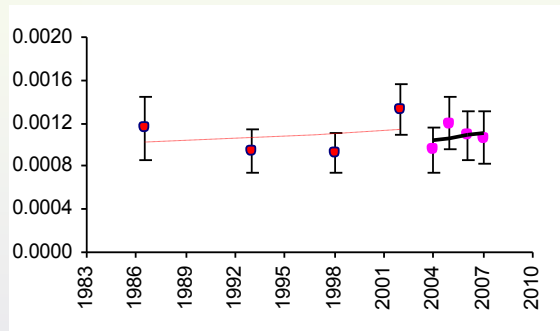


Figure 10 a and b: Population trends of Palearctic migrants and Afro-tropical migrants respectively



Populations of migratory species on the decline in Uganda

Whereas migratory birds are found in non-wetland sites, wetlands are by far the most critical areas for migratory birds in Uganda. However, despite the importance of wetlands as vital habitats for migratory species, they are amongst Uganda's most threatened ecosystems mainly due to conversion for agriculture, livestock and settlements.

The reduction in wetland habitats is correlated with the sharp declines in many migratory species (Fig 11). As already noted that migratory birds depend on interconnection of wetlands, the destruction of one key wetland can lead to a devastating impact on the numbers of species. Therefore, it is critical to maintain this network of such critical wetland sites in order to achieve conservation of migratory birds. The results of twenty years of monitoring wetlands and water birds show that a lot more needs to be done to safeguard wetlands over the whole country. Such efforts would complement the global efforts such as AEWA that target action along the migratory flyways.

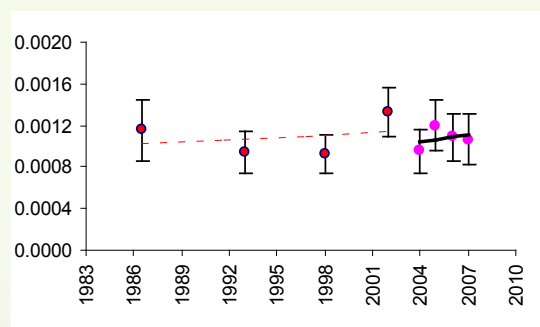
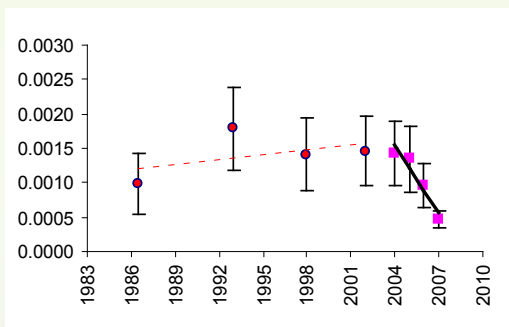


Figure 11a: Trends in population of migratory species

Figure 11b: Trends in population of migratory species



Priority sites for conservation of birds

Important Bird Areas (IBAs) as Key Biodiversity Areas (KBAs)

Important Bird Areas (IBAs) are sites of global conservation importance and cover at least 6% of the total land surface area of Uganda (Byaruhanga et al 2001). They are practical tools for conservation, identified using standard internationally agreed criteria. Uganda has identified 34 IBA sites and nearly all the bird species of Uganda are captured within these IBAs. Other biodiversity studies show that all the plants and animals in Uganda are represented in the IBAs (Brooks et al 2001; Tushabe et al 2006). This makes the IBAs in Uganda Key Biodiversity Areas (KBAs) and critical sites for conservation. Among the IBAs, 31 sites have legal government recognition as conservation sites. These include 10 National Parks, three Wildlife Reserves, nine Forest Reserves and nine Ramsar Sites. This has contributed much to the conservation of these sites and the species that reside therein. However, three sites including Doho Rice Scheme, Kibimba Rice Scheme and Nyamuroiro wetland have no legal conservation status.

IMPORTANT BIRD AREAS IN UGANDA

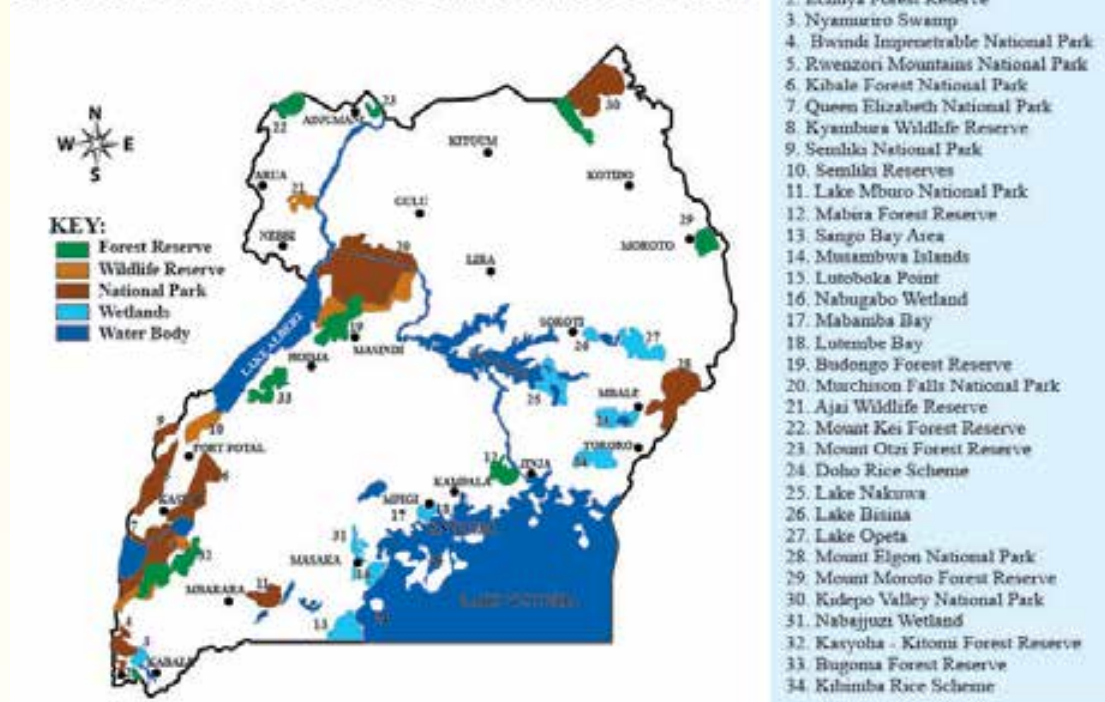
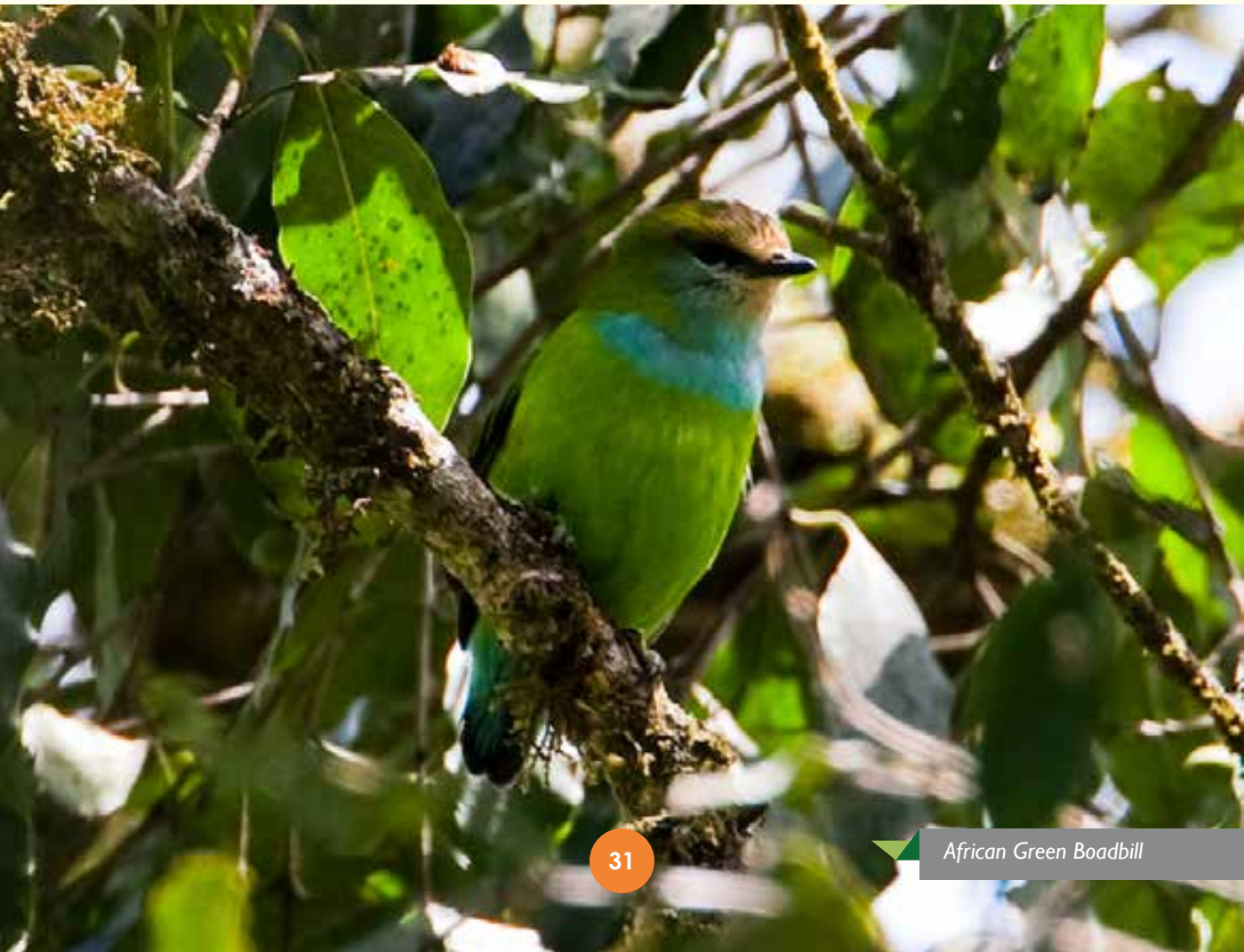


Figure 12: Map of Uganda showing all Important Bird Areas.

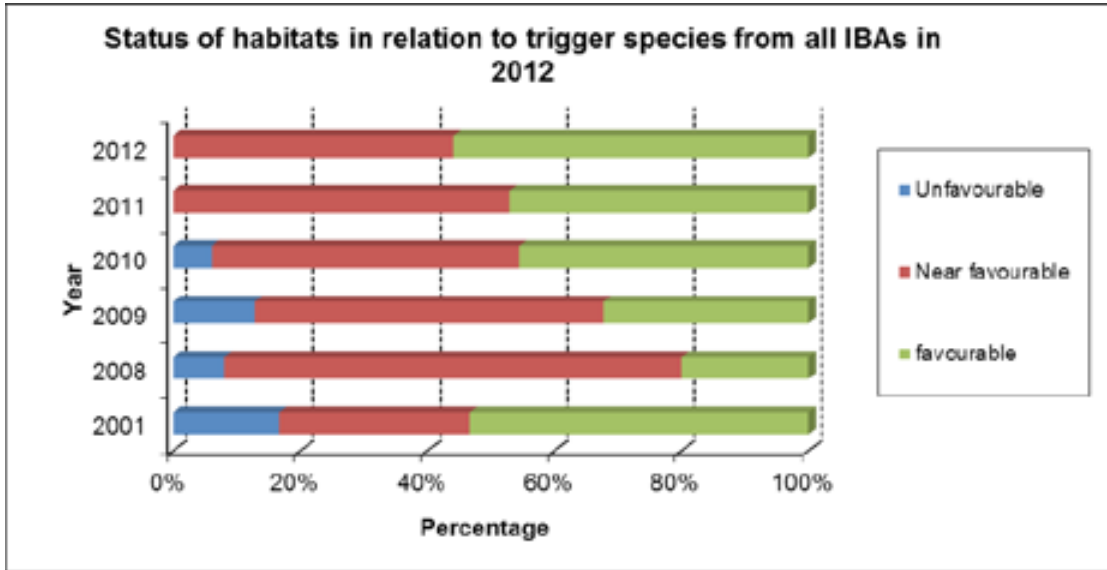
State of IBAs improving

NatureUganda established a monitoring programme for the IBAs in 2001 and ratings provided based on conservation status of the sites (NatureUganda 2008, 2009). Three status ratings are considered in IBA monitoring including; Favourable, Near Favourable and Un-favourable. The analysis in 2012 showed that the majority of IBAs (56%) generally seemed to have been in Good (Favourable) condition as compared to 32% in 2009. The results in 2012 are an indication of the impact and outcome of the several years of conservation effort. While the proportion in the Bad (Un-favourable) condition has gone down to zero sites from 17% of the sites in 2001 and 8% in 2008 (NatureUganda 2011).. The proportion of sites in the fair (Near Favourable) condition remains positive and with sustained efforts and investments in conservation, the trend will continue to improve as has been the case for the past years since the baseline year 2001. However, despite the positive trends in the status of IBAs, there should not be complacency because the threats to biodiversity remain high in the face of high economic growth but paradoxically with increasing poverty levels in rural areas. As the disparity between the rich and the poor increases, more and more poor communities are increasingly becoming more dependent on natural resources for basic needs such as fire wood, domestic supplies of non-timber forest products, subsistence agriculture, and domestic water sources. Due to concerted conservation efforts from conservation organization or agencies including NatureUganda and other partners, the general status of the IBAs in Uganda has greatly improved (Fig 13), indicating a better future for biodiversity conservation in the country.



Trends in State of IBAs since 2001 indicating how the sites are still favourable to trigger species

(a)



(b)

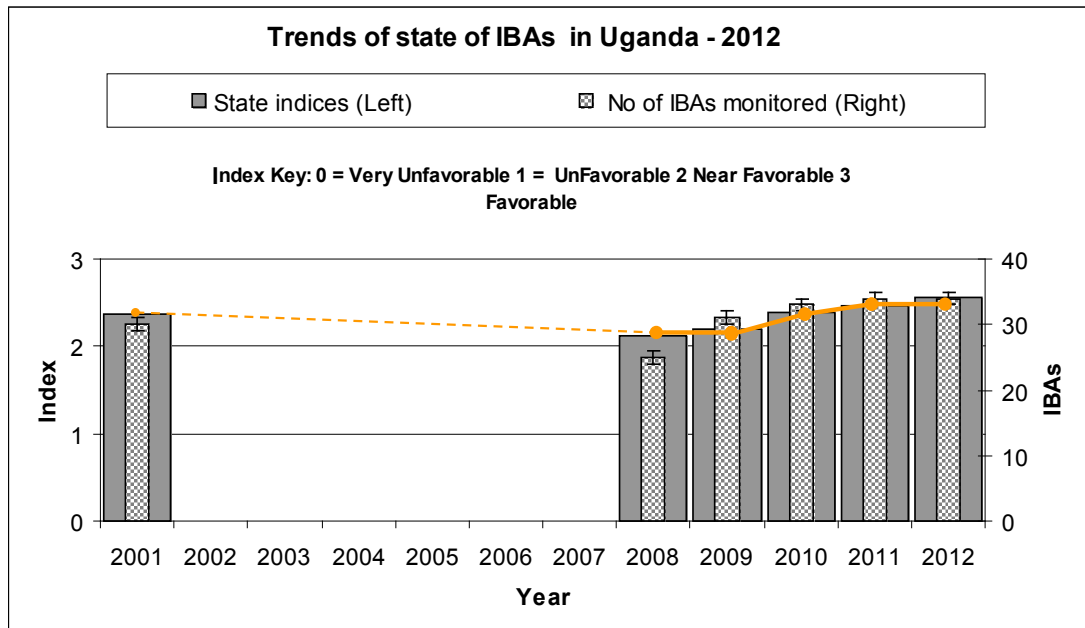


Figure 13. Trends in State of IBAs since 2001 indicating how the sites are still favourable to trigger species



Pressure/ Threats

Habitat loss is the major threat to birds

Nationally biodiversity is faced with multiple threats. These include habitat loss and degradation through development projects such as expansion of agricultural land, settlement and urbanization. Overharvesting including wildlife trade or domestic consumption and occasionally accidental poisoning has had impacts on some species.

Monitoring sites and species over the last twenty years has shown some sharp declines in some species such as Grey Crowned Cranes, various other water bird species, and various records of vulture death have been reported both in and outside protected areas. Although forest birds are difficult to monitor at species level, they are likely to be facing similar trends. An example that has been heavily impacted by over-harvesting is the Grey Parrot. Whereas site monitoring data from the last 5-10 years indicate some stability in the ecological state of the sites using threatened species as trigger species, equally the threats to sites have similarly continued to escalate (NatureUganda 2009, 2010, 2012).

Farming methods and their impacts on birds

As already showed, habitat loss constitutes the main threat to biodiversity and it is reflected in the decline of species. To illustrate this, NatureUganda conducted surveys of biodiversity on farmland in central Uganda. Similar studies have been conducted on farmland birds, especially in Europe, but little efforts had been undertaken in most of tropical Africa. A study was conducted on farmlands in central Uganda (Buganda region) between 2006 and 2009 (Nalwanga 2011), to investigate how the number of birds in farmland habitats relates to local landscape features. This study revealed that birds will quickly react to changes in the environment with the increasing human population and associated effects such as habitat destruction and pollution. However, the same study found that different types of farming had varied effects on biodiversity.

For example mixed farming had positive effects on birds and increasing crop diversity will result in increase in the number of birds in the area (Fig 14). This is probably as a result of the diversity of food options and micro-habitats created by the different types of crops. Similar effects were observed in uncultivated bushes on hedge rows or on land left to rest during cropping seasons (fallow) due the different micro habitat types created in the landscape. In such situations, some rare species such as those found in forests may persist in such habitats but would quickly disappear when the habitat is removed or further degraded.

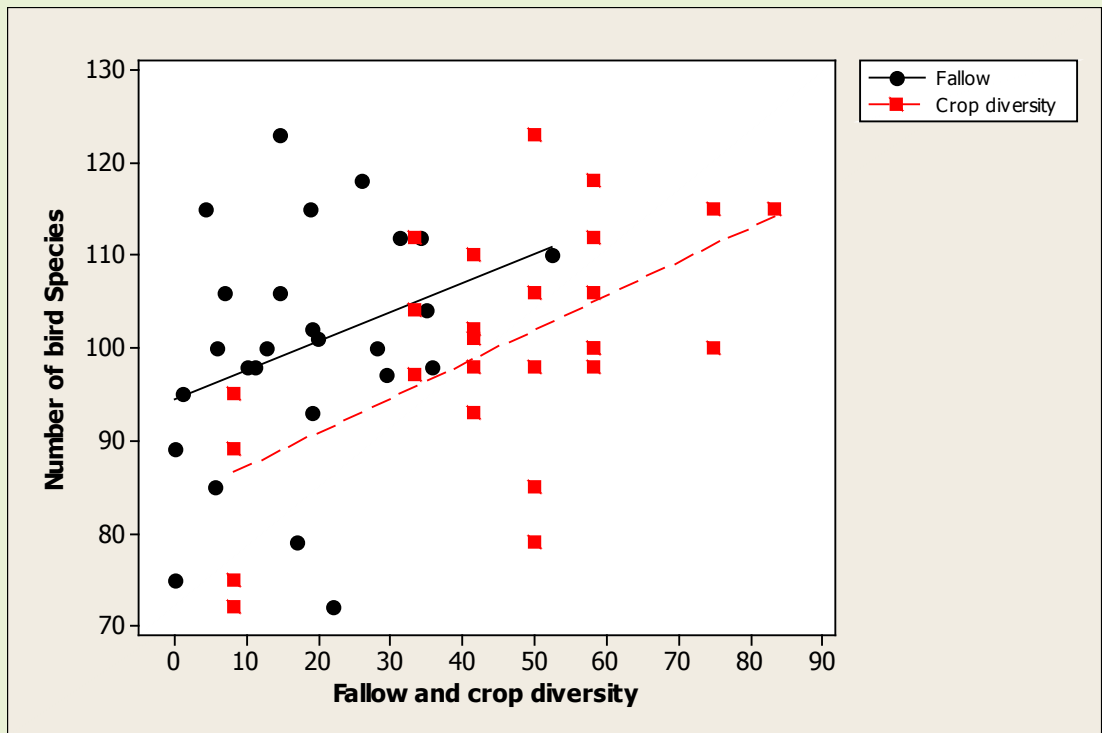
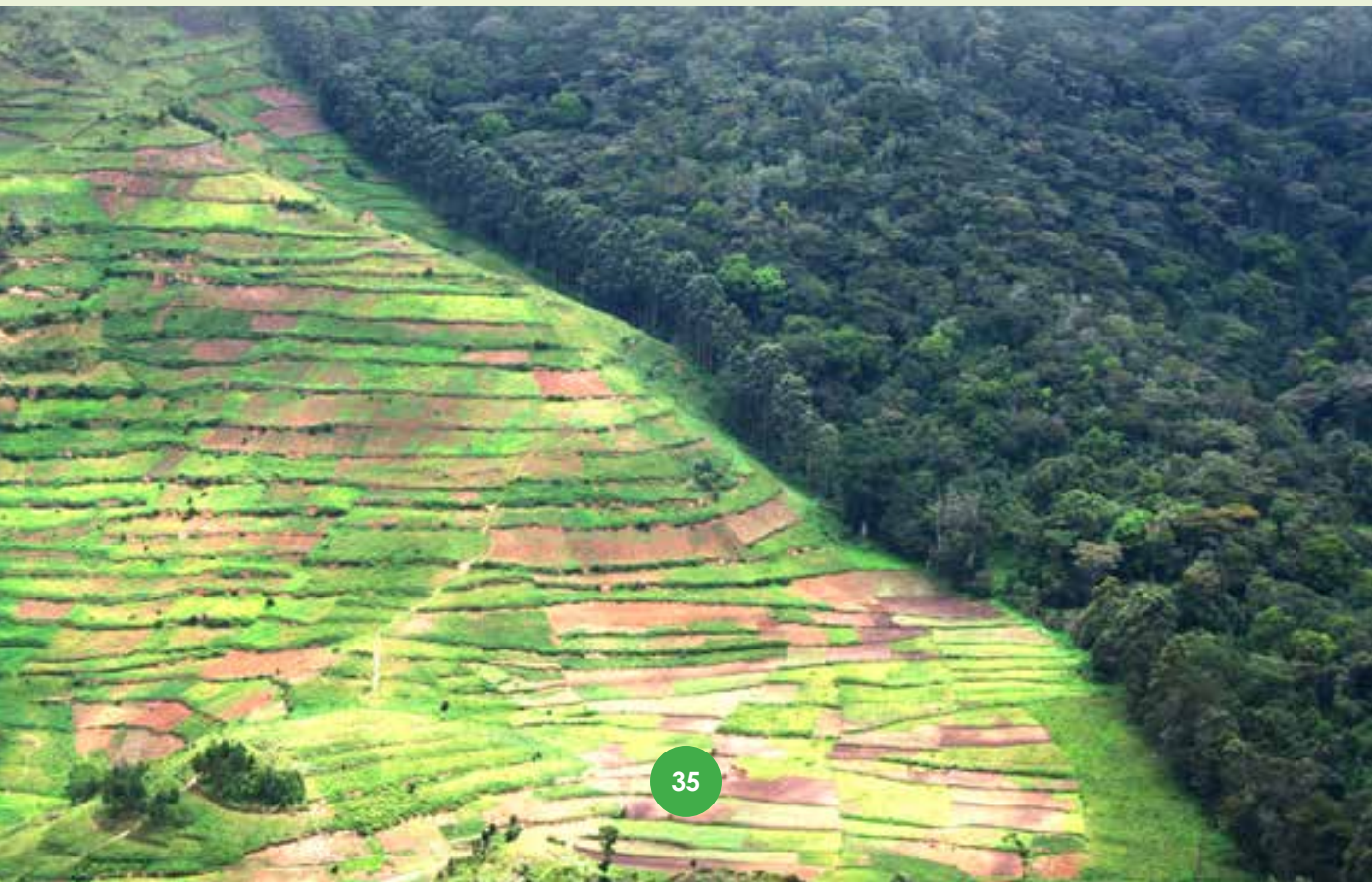


Figure 14: Farmland with a greater diversity of crops and more fallow is associated with greater bird species richness. Adapted from Nalwanga 2011



More trees on farmland are associated with more birds

In the same study, farmlands with many trees usually have more birds than those with few trees (Fig 15) and more trees in the landscape will support more species. This is highly significant with habitat dependent species, such as the species that highly depend on forests for their survival. The trees on a farm create a heterogeneous environment for different bird species and other biodiversity due to the diversity of suitable microhabitats created by the trees.

The study shows that small scale and mixed farms host more species than the large scale monocultural farms. Large monoculture farms provide only one major habitat type and thus host a limited number of bird species which find such habitat suitable (Nalwanga 2011). Nonetheless, the small-sized birds such as manikins and waxbills may survive in this kind of habitat as they require small niches at local scales, but the larger birds such as hornbills and turacos may not find such degraded areas suitable to survive.

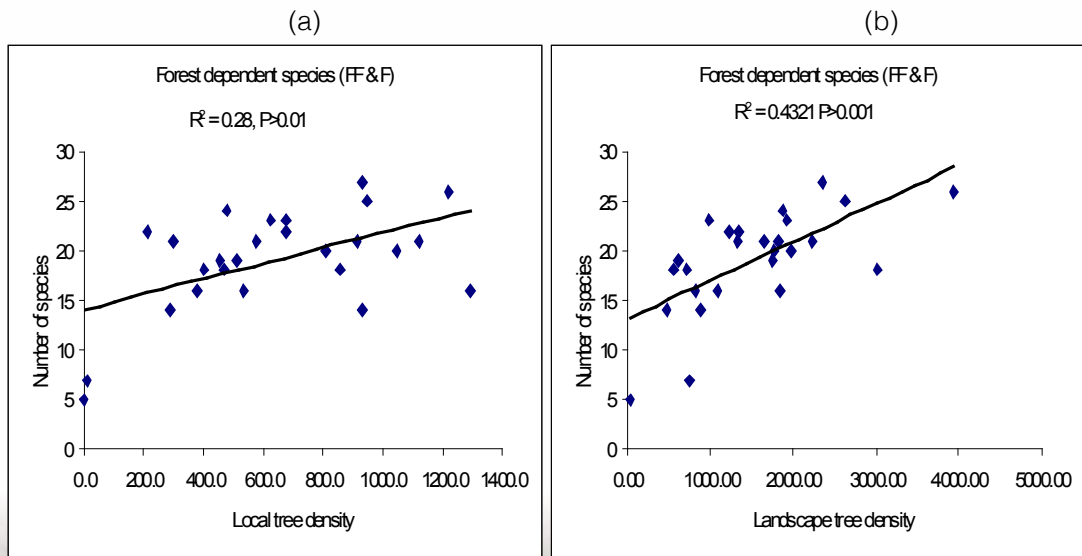


Figure 15 a and b: Relating Bird species and number of trees on farmlands. Adapted from Nalwanga 2011

Oil and gas development and its impacts on biodiversity in Uganda

Oil and gas exploration is a new industry in Uganda and its operations have intensified in the last decade. The main exploration areas are located in the Albertine Graben (in geological terms) but commonly referred to as the Albertine rift. This region is globally known as a biodiversity hotspot due to the diversity, richness and endemism of plants and animals. Nearly 80% of the total number of birds recorded for Uganda are represented in the Albertine rift area including 25 species endemic to the region.

Plumptre et al. (2003) reviewed the variety of threats that sites within the Albertine Rift were faced with, the major ones of which included forest loss, hunting, timber exploitation, mining for minerals as well as oil and gas exploration. Even without oil exploration, the growing human population and accompanying demand for natural resources will see further impacts on the survival of ecosystems and wildlife. Although no particular studies have been conducted to determine the impact of this industry on birds, studies elsewhere indicate big potential threats ranging from habitat loss and degradation due to infrastructure development, oil spills in case of accidents and poor waste management (NatureUganda 2011).

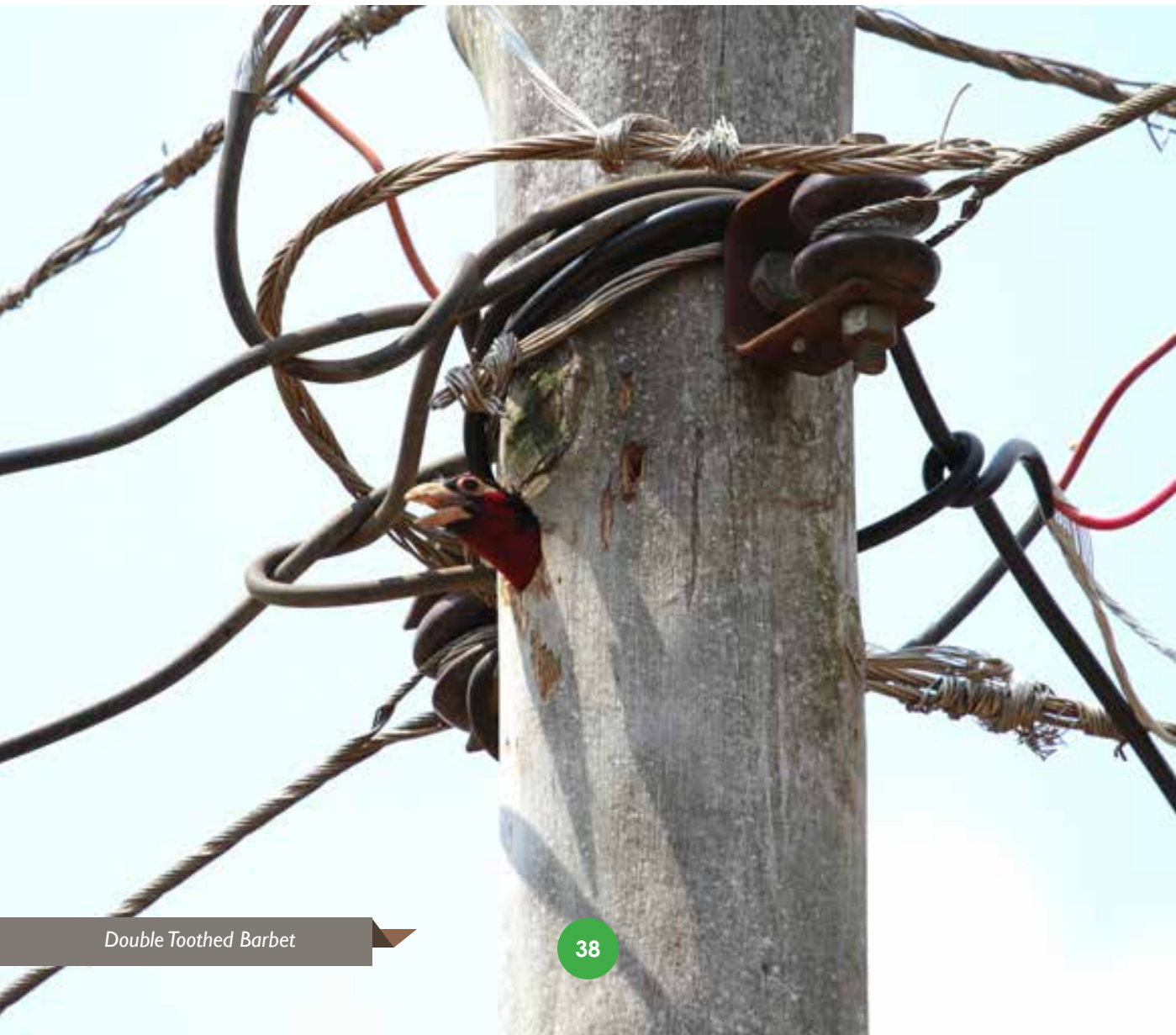
Similarly, the Rift valley and the Nile valley are two most important routes or flyways for migratory birds and millions of birds pass through this route twice a year. The effects of oil and gas development on these migratory species may not be benign. Of particular concern is a phenomenon called 'photopollution' or light pollution ("nocturnal circulation events") (Gauthreaux and Belser 2006.) where flocks of migrating birds become disoriented by brightly lit oil platforms and end up flying in circles around a single platform for hours. Birds ranging from warblers to wading birds sometimes circle a platform until they die of exhaustion, or fatally collide with either another bird or the structure itself. The question of artificial lighting in migration routes and protected areas such as national parks will require particular attention by developers and government authorities to reduce migratory birds' mortality.



Electricity transmission lines as a hazard to birds

Electricity transmission lines may be 'silent killers' of thousands of birds every year in Uganda. Records of electrocuted large birds such as Cranes, Vultures, Herons have been recorded under or hanging on electricity transmission lines. In Sudan one of the most deadly power lines in Africa to migratory soaring birds especially the Endangered Egyptian Vultures referred to as the 'killer line' has recently been replaced (www.birdlife.org/africa/news/sudan-killer-line-disconnected). With the planned regional and national increase in electricity generation and transmission capacity, care will need to be taken to reduce bird strikes and collision.

The methods, the technology and techniques such as using insulation and or reflectors on high voltage electricity lines are well known and available. The operating companies in Uganda already use these techniques in other countries where they have similar operations and same standards must be employed in Uganda.



Double Toothed Barbet



Wildlife trade is a major threat to birds

Whenever people sell or exchange wild animal and plant resources, this is wildlife trade. It can involve live animals and plants or all kinds of wild animal and plant products.

Wildlife trade has the potential to be very damaging. Populations of species on earth declined by an average of 40% between 1970 and 2000 (Global Biodiversity Outlook 2006) and biodiversity loss in Uganda is estimated at 1% annually (NBDB 2008). Wildlife trade is the second-biggest direct threat to species survival, after habitat destruction. Perhaps the most obvious problem associated with wildlife trade is that it can cause overexploitation to the point where the survival of a species hangs in the balance. In return, it affects livelihoods of the population who depend on these resources and harms the balance of nature. In Uganda, tourism the highest foreign exchange earner is dependent on wildlife and over exploitation of species may affect visitor numbers and therefore income from such an activity. Therefore wildlife trade is a threat to national economy.

Uganda is one of the countries that still allows export of wildlife and wildlife products. However, this trade is not guided by a specific national policy. The user-rights guidelines by UWA lack specificity on species and the implementation is hampered by lack of accurate information on populations of species and decisions to trade are taken in absence of reliable scientific data. This has led to the illegal export of some rare and threatened species as well as smuggling of others. For example CITES data shows that the Grey Parrot is the most exported species from Uganda and together with other species such as the Grey Crowned Crane, have been driven to the endangered list by wildlife trade. With poor or unreliable data on population of species and constraints of customs officials at border posts who may not usually be knowledgeable of wildlife specimens, Uganda needs to reconsider the policy on wildlife trade.

IBAs in danger; what are the threats?

The Important Bird Areas have been monitored since 2001 and based on the State, Pressure and Response study, the results show that pressure or threat rating with respect to trigger species declined from very high in 2001 to low in 2012 (Fig 16, Fig 17) while the conservation was increasing (Fig 18). The most common threats at IBAs are over exploitation/resources harvesting, agriculture, over grazing, burning of vegetation and firewood collection (Fig 19). However, agriculture especially shifting cultivation and resource harvesting remain the highest threats to sites in Uganda. Such threats represent the main factors responsible for the slow ecological recovery of many sites in Uganda. Other threats such as siltation pose significant threat to some IBAs. For example, the receding shoreline of Lake Nakuwa has been attributed to the continued deposition of silt into the swamp from crop fields or settlement areas in the catchment. Overgrazing is also a major factor and concern to some areas particularly those that neighbour pastoral communities such as Semliki NP, Mt Elgon NP, Nabugabo wetlands, Kidepo NP and Lake Mburo MNP.

Since 2012, a total of 25 threat categories at IBA sites were reported (Nature Uganda 2012). On average, each IBA recorded about six different threat forms, with the lowest having two (2) and the highest with thirteen (13) threat forms (Fig 19). Looking at the trends of the threats and considering information on their timing, scope and severity for each of them , many threats are shifting from the undesirable end of higher rating to the lower end, i.e. very high pressure ratings scoring 40%, 27%, 27% and 6% respectively in 2010 and 53%, 38%, 9% and 0% respectively in 2012 (Fig 17). It is important to note that the 2011 – 2012 years registered only three different pressure ratings including low, medium, high, where the fourth “Very high” scored zero.

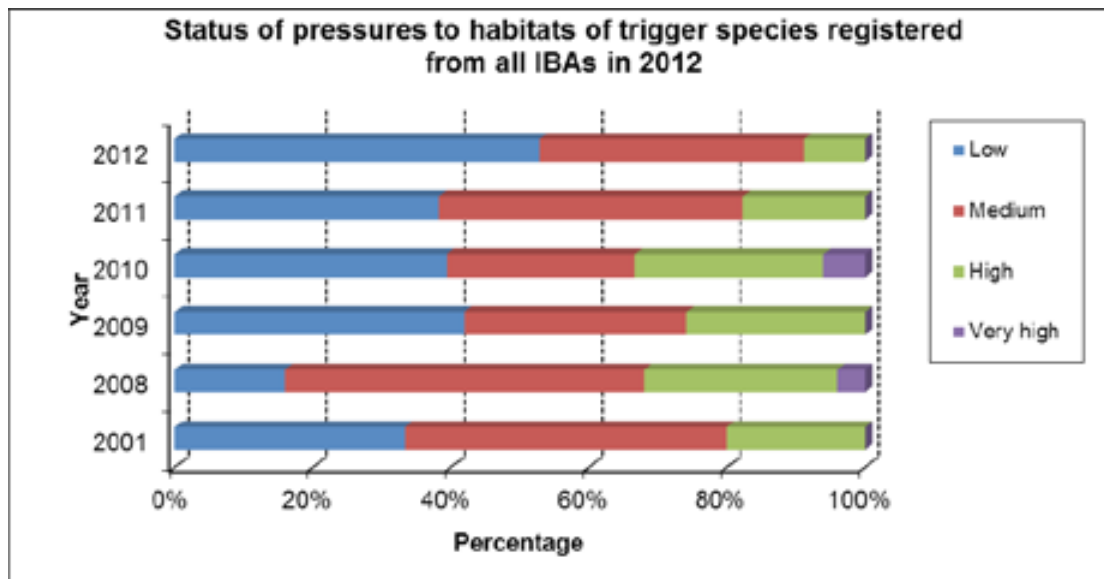


Figure 16: Trends in pressures (threats) to habitats of trigger species since 2001

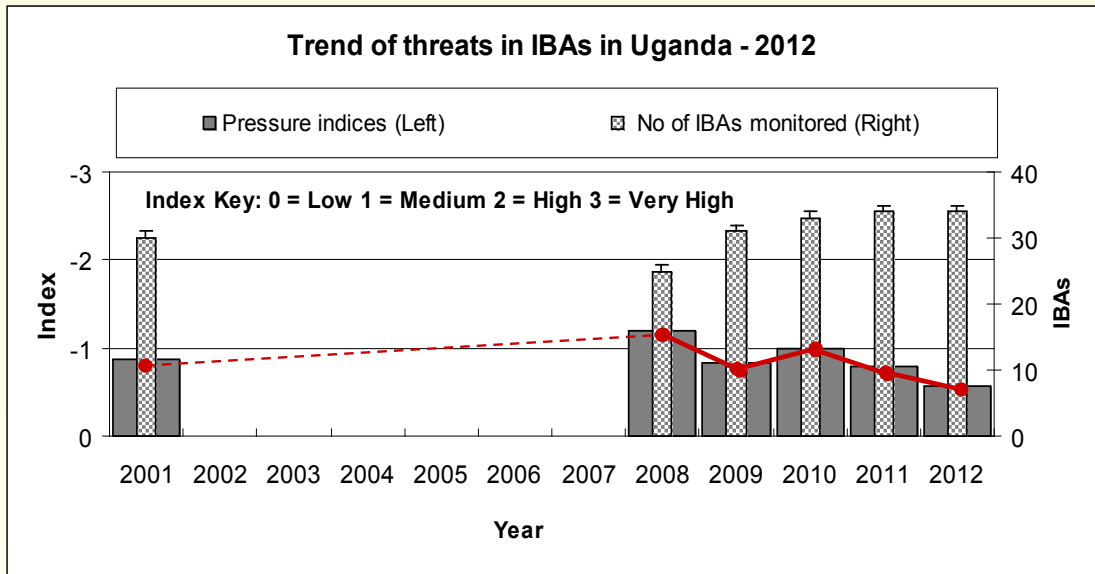


Figure 17: Trends in pressures (threats) categorised in extent of severity to the sites

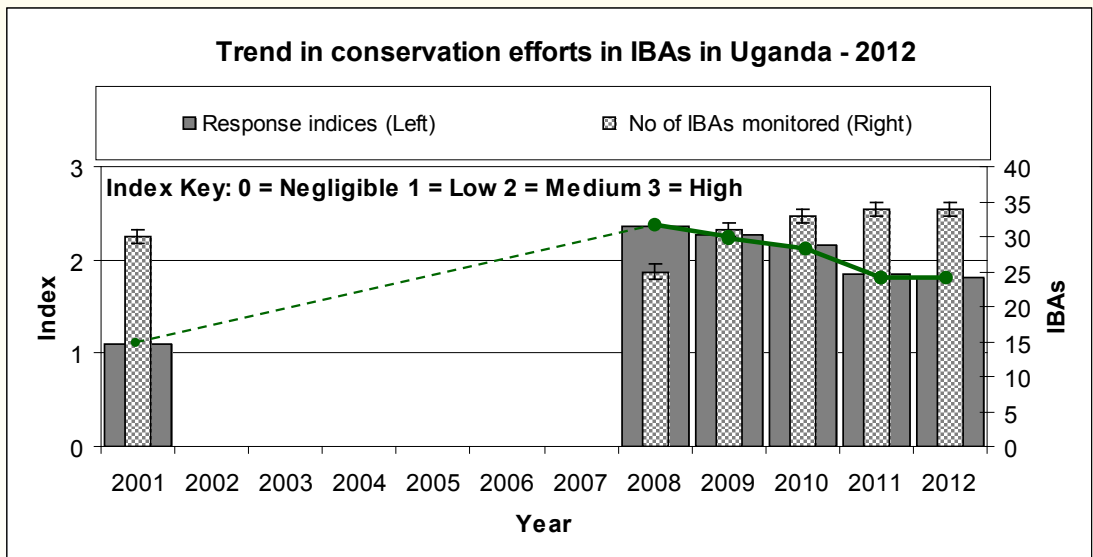


Figure 18: Trends in conservation effort (response) to IBAs since 2001

Identified threats to IBAs

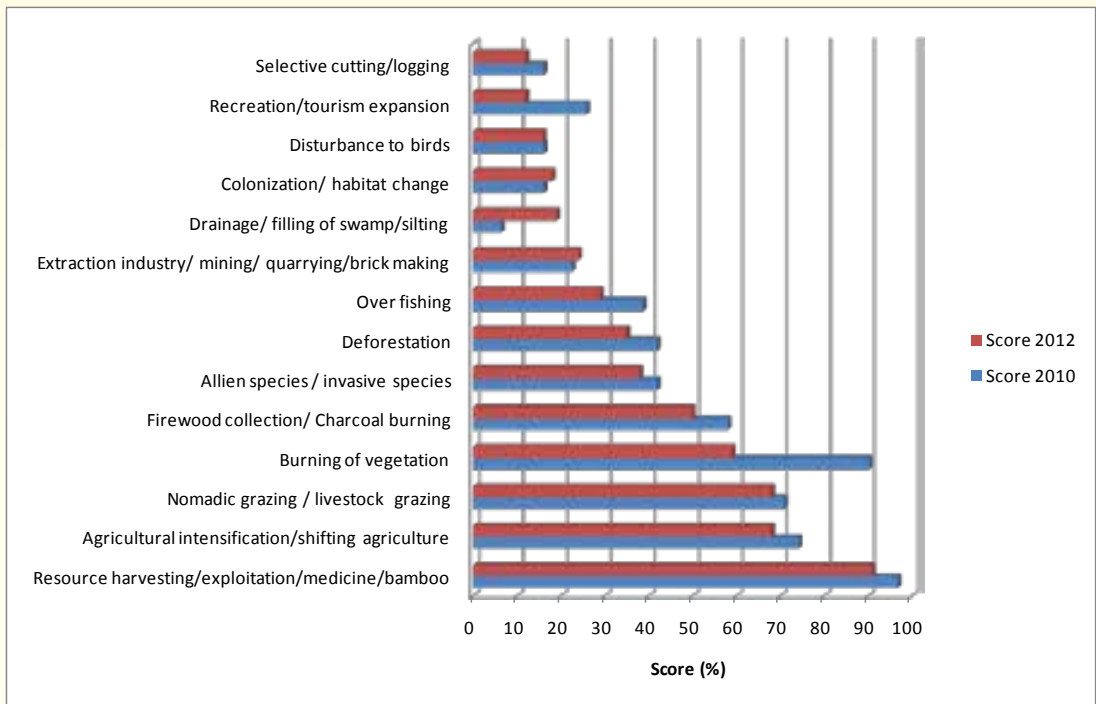


Figure 19: A comparison of scores of 15 most common threats in IBAs for 2010 and 2012 period. Scores represent the proportion of IBAs that recorded the threat.



Green Breasted Pitta

Urbanization and its impacts on birds

Although bird communities in urban environments are often dominated by a few exotic and ubiquitous species such as Rock Pigeons and House Sparrows, a surprising number of native birds have adapted to life around humans in Uganda's urban centres. Through a combination of habitat destruction, human population intensification and the associated urban growth, the bird population of urban areas is changing. Species that were once common in towns are retreating as their old refuges are destroyed to develop new structures and infrastructure to accommodate a growing population. Roads, factories and dwellings are being constructed over swamps and hillsides resulting in habitat loss. Many small passerines such as waxbills, buntings and canaries which rely on scrub cover to raise their broods have lost out and declined sharply. Similarly, birds which require undisturbed habitats such papyrus swamps have all disappeared as their papyrus homes have been converted. Species such Payprus Gonolek or White-winged Warbler that could be commonly heard around Kampala swamps have since disappeared.

However, some species show positive trends in towns. Red-billed Firefinch shows increasing trends, the breeding colonies of Black-headed Herons have increased probably due to urban sprawl and the new feeding opportunities. Other species such as the Marabou Stork, the Pied Crows, and the Black Kites have benefited from the increasing amount of food in rubbish skips in town centres. Today Kampala city has the biggest breeding population of the Marabou Storks in the World. Other newcomers in the urban environments are the Speckled Pigeon which has greatly increased in number in the last ten years.

The increase or decrease of species in towns may represent a sensitive "first alert" to environmental changes or environment quality. For example, it is believed that the population of Marabou Storks in Kampala is an indicator of poor waste management and it is expected that when the city gets clean the Marabous will probably relocate to new areas.

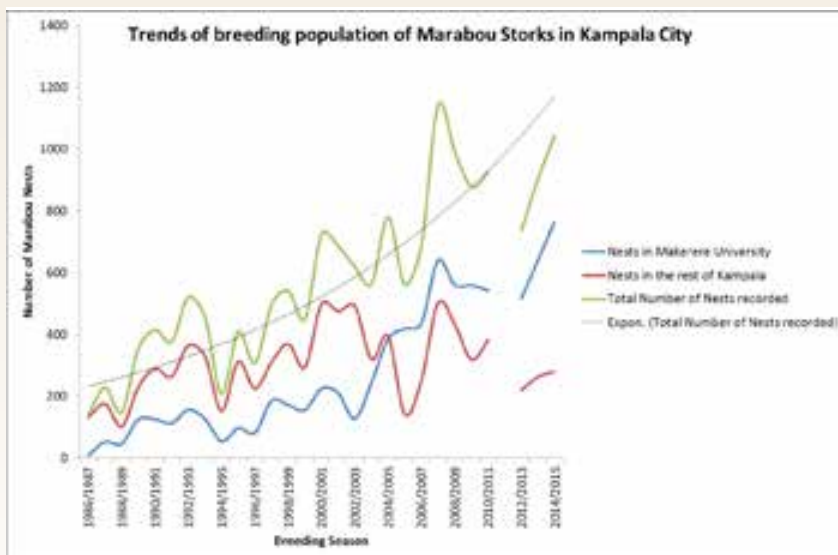


Figure 20: Trends in the breeding population of Marabou Storks in Kampala City: Adapted from Derek Pomeroy & Michael Kibuule 2010

Fully urbanised Marabou storks

Marabou storks (*Leptoptilos crumeniferus*) are residents and local migrants throughout tropical Africa from Senegal to Somalia, South to Botswana, but rare in the extreme South. While mainly scavengers, they can also be active predators. They can swallow whole lumps of food of up to 1kg. The only other two close relatives are found in Asia, thus the Marabou is the only one of its kind that occurs in Africa.

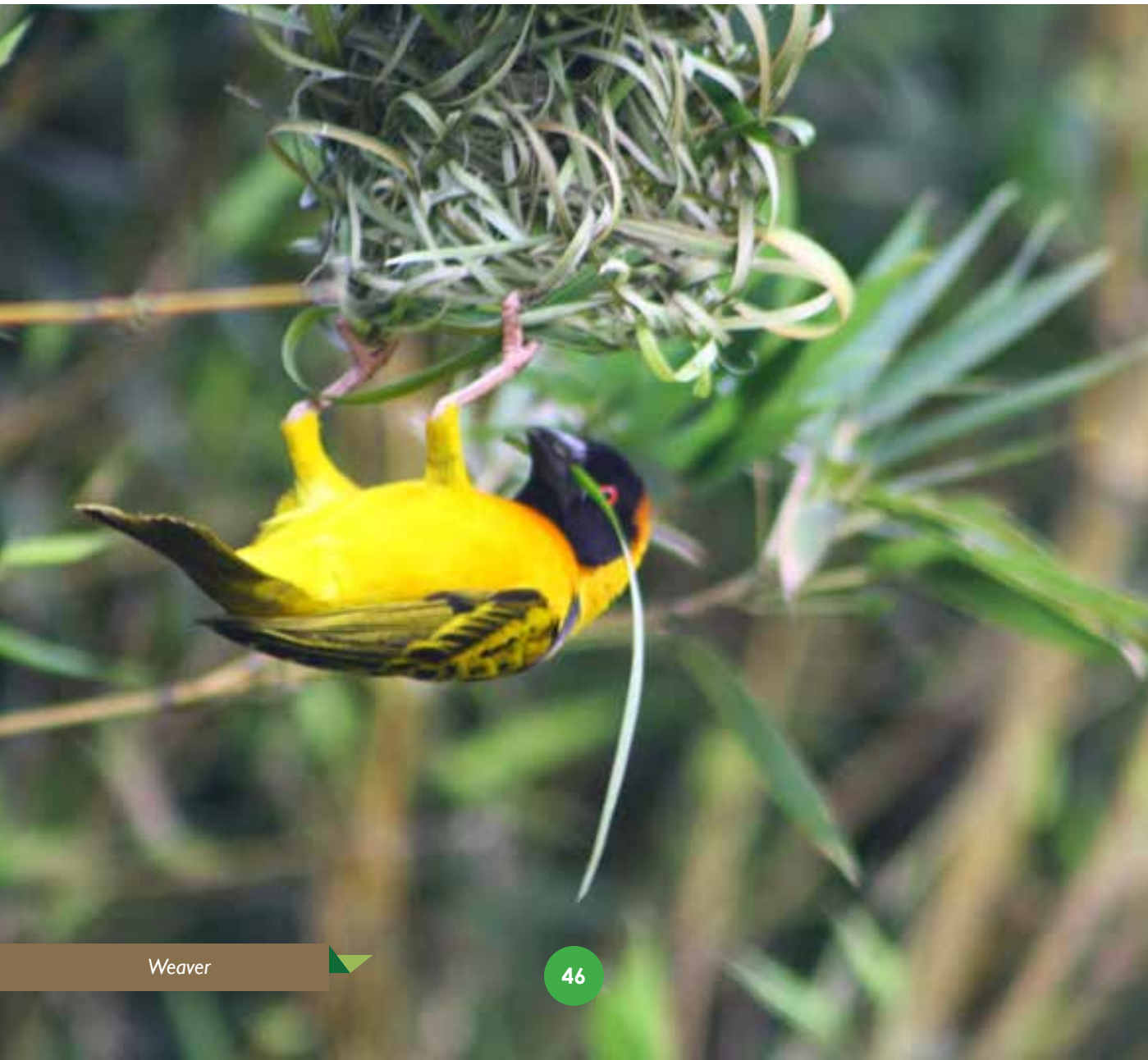
Marabous were initially wetland breeding species and preferred open or semi desert areas, rare within forested and true desert areas. They are associated with people near fishing villages and towns. However, today, Marabous can breed more successfully near human settlements like towns and cities and can be seen on rubbish dumps and abattoirs where they forage for food. Notably in Kampala; the capital city of Uganda, Marabous have become very successful that the city is host to the biggest breeding population for the species recorded with over 1200 nests annually (Pomeroy et al 2010). Their association with human settlements may be a result of easily accessible, adequate food and availability of strong trees (good nesting sites) to support their heavy nests which are the key requirements for their successful breeding. Marabous are harmless creatures that associate well with people and therefore less persecuted. It is no surprise that Marabous nest and forage near large institutions such as Universities, hospitals or large corporate organizations such as hotels. Poor disposal of garbage especially food items in the many food vending markets in the city, overflowing garbage skips scattered in towns, poorly tended abattoirs and butcher shops are all good scavenging areas for the urbanized marabous.

The population of Marabous has been increasing in Kampala since 1969 when the first count of the breeding population was made. Since then, the breeding population has increased from 11 pairs in 1970 to over 600 by 2007. Today, the total breeding population in the city is over 1,000 breeding pairs. The reduction in the Kampala Marabou population since 2008 could be an indication of improved city cleanliness (Fig 20).



Weavers and other passerines edged out of the urban areas

Counts of breeding colonies of Black-headed Weavers and Vieillot's Black Weavers on a series of roads radiating out of Kampala were made in 1982. Follow up counts were made in 2001 and repeated in 2006. Initial records in 1982 indicated that these species were common in the urban areas and less common as you go out of town. The counts in 2006 show that both species increased in areas outside Kampala City because there were remnants of bushes remaining whereas today settlements have increased and covered most areas. The increase in suburbs (more rural parts of the city) with more vegetation provides more food and nesting opportunities. So whereas scavengers are being sucked into the city due to easy feeding opportunities, other species such as weavers and other passerines are continually pushed out of the urban areas due to lack of the same opportunities.





Response

Monitoring waterbirds

National waterbird census

The principle aims of the scheme are to identify population sizes, determine trends in numbers and distribution, and identify important sites for waterbirds in Uganda. Counts are made bi-annually at approximately 30 wetland sites that include areas of open water, major rivers such the Nile in MFNP, saline craters especially in QENP area, rice schemes such as Kibimba and Doho in eastern Uganda, as well as marshes and shallow lakes such as Lutembe Bay, Mabamba and sites in Kyoga basin including Opeta/ Bisina lakes. Some sites have been monitored for over 25 years. Overall, waterbird census provides the longest and continuous biodiversity monitoring programme in Uganda. Below is a selection of some sites and species that show example of trends of birds at various sites in Uganda.



White-winged Terns at Lutembe Bay.

Lutembe bay is an Important Bird Area since 2001 and a Ramsar site since 2005. It is located on the northern shores of Lake Victoria at the mouth of Murchison Bay. The site regularly holds counts of up to 50,000 birds in January and counts of huge congregations have been made. For example over 2,000,000 were counted in 1999 and 2000 (Byaruhanga et al 2002), and similar numbers were reported in Western Uganda. However, the big numbers are predominantly made up of Palearctic wintering gulls, terns and waders with White-winged Black Terns being the dominant species, constituting over 70%. Despite the importance of the Lutembe bay for migrations, it has been degraded by pollution and conversion due to the proliferation of horticultural flower farms around the bay. Since 2000, an estimated 25% of the open water/marsh has been lost to these developments and more swamp continues to be lost every year due to flower farm expansion. The loss and degradation of the ecosystem causes impacts on the lake fauna and flora but critically reduces ecosystem services to the surrounding communities. NatureUganda works with local community (the Site Support Group) and partners at this site to monitor and advocate for the increased conservation of the site and aim to halt the threats to the ecosystem.

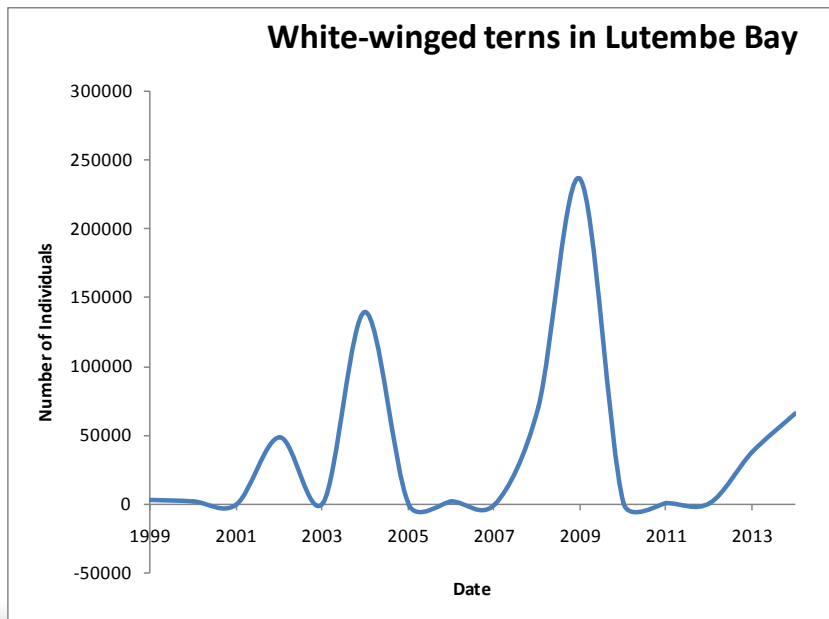


Figure 21: Trends of White-winged Terns at Lutembe Bay since 1999. The graph shows trends in January and July



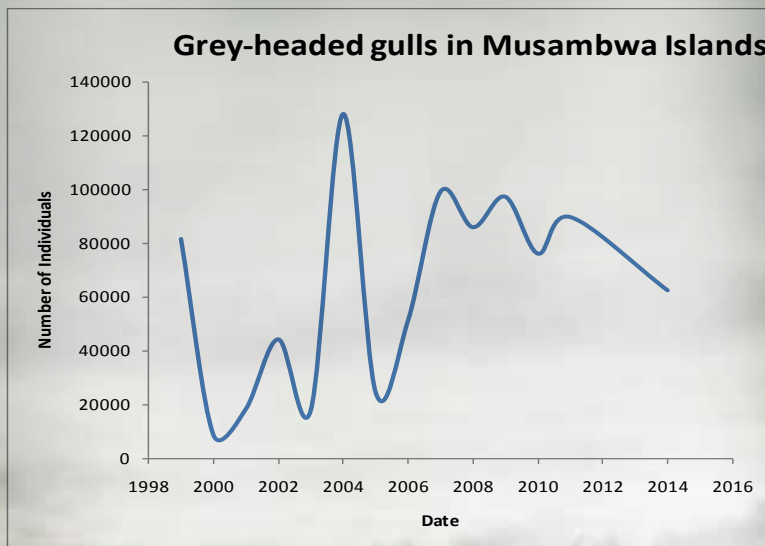
Grey-headed Gulls at Musambwa Islands

The Musambwa Islands located on the western end of Lake Victoria were identified as an Important Bird Area since 2001 and Ramsar site since 2005. The Islands are composed of three rocky Islands which are three kilometres offshore from Sango Bay. The largest Island Ennene (which means “the big one”) is 5 ha, the second largest; Entono (which means “the small one”) is 3 ha, while the smallest is just a small rocky outcrop jutting out of the lake.

The islands are important and renowned for huge numbers of breeding Grey-headed Gulls. It has been estimated that over 16% of the world population of Grey-headed Gull use these islands for breeding, while large congregations of egrets and cormorants also occur and breed on the islands. For long, the harvesting of birds’ eggs especially Grey -headed Gulls have occurred mainly for local domestic consumption. However, the increased number of fishermen has resulted in the clearance of larger areas for settlement causing disruption to the breeding birds. Although originally only 60 people were allowed at the island, over the years the numbers have swollen to hundreds. The increase in number of people has resulted in more use of spatial resources, all trees have been cleared for firewood and the harvesting of eggs has intensified from subsistence to commercial use. This has disrupted the breeding of birds and posed a threat to the survival and long-term sustainability of the breeding colony. NatureUganda started a programme in 1998 to work with the local community on sustainable fisheries, sustainable harvesting of eggs, alternative energy saving technologies and limiting settlement to reduce impact on the area required for breeding birds.

Subsequently, harvesting of Grey-headed Gull eggs for consumption has ceased, settlement is limited to the agreed area on only one Island (ennene) and a Site Support Group (SSG) that works to guide the community on living together with birds has been established. As shown in Fig 22, the number of the breeding Grey-headed Gulls shows some stability and more monitoring will determine whether community interventions are sustainable for the survival of the species on the island.

Figure 22: Trends of Grey-headed Gullss at Musambwa Islands since 1999. The graph shows trends in January and July



Waterbirds populations in protected areas show stability

It is generally expected that protected areas safeguard all biodiversity that occurs within its borders. However, it is important to note that there are many species that occur outside protected areas as well, some of which may not be well represented in the protected areas network. This is true for waterbirds where many more species occur outside protected areas because the protected area network in Uganda does not contain many wetland areas. Even in circumstances where waterbodies appear to be in a National Park, they are not fully under jurisdiction of the protected area management. For example, despite the fact that Lake Mburo is within the confines of Lake Mburo National Park, the open waters are open access except for a strip of the shoreline. The same applies to Kazinga Channel in QENP

A selection of water bodies from sites in Lake Mburo (LMNP), Queen Elizabeth (QENP) and Murchison Falls (MFNP) National Parks and Kyambura Wildlife Reserve are included in the waterbird census. An analysis of a selection of two groups of species (Pied Kingfishers and Fish Eagles) was made to show the status of waterbirds in protected areas as compared to the same species outside protected areas.

Pied Kingfishers

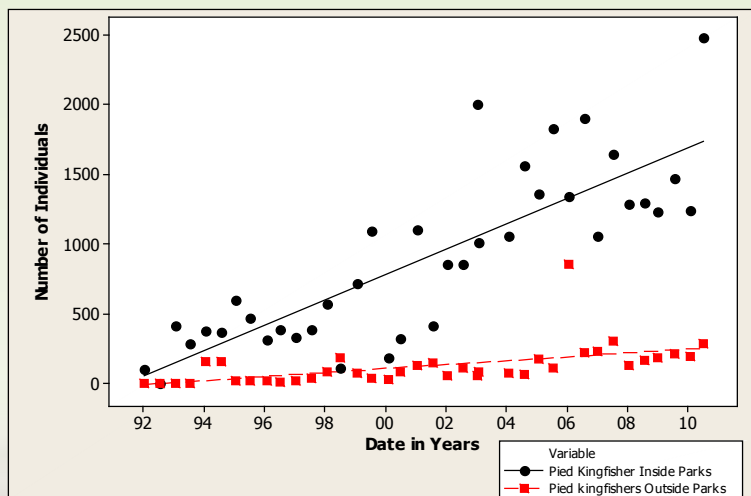


Figure 23: Trends of Pied Kingfishers comparing records from protected and non-protected sites. Data extracted from AWC

Records of Pied kingfishers (Fig 23) indicate that the numbers of this species have been increasing both inside and outside Protected Areas. However, the trends in protected areas show a much bigger increase than the sites outside PAs. This is a good indication that human activities have a very big impact on the status of species even where there is no direct competition. 88% of the total numbers of all individuals recorded during the waterbird counts were from PAs.

Fish Eagles



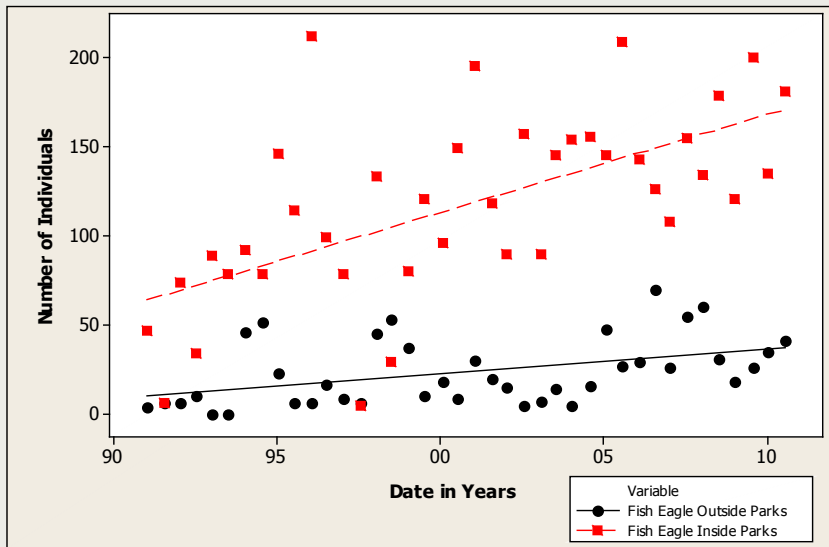


Figure 24: Trends of Fish Eagles comparing records from protected and non-protected sites. Data extracted from AWC

Similarly, the waterbird census records show that the African Fish Eagle *Haliaeetus vocifer* is generally successful both inside and outside national Parks (Fig 24). However, similar trends are true that Fish Eagles are more successful in PAs than outside PAs. Also 83% of the numbers recorded were from inside PAs. Again these results show the critical importance of PAs and impact of human activities on biodiversity loss.



African Skimmers

African Skimmer is listed as a near threatened species by the IUCN Red Data List and shows a downward trend in Uganda (Fig 25). It is an intra-African migrant and the total global population is estimated to be less than 25,000 individuals and declining. The highest number recorded in Uganda was 1400 in 1996 which makes the total population in Uganda very significant for the survival of the species. Although there is no concrete explanation for this decrease in number, the causes are suspected to emanate from wetland habitat degradation, over-exploitation and human disturbance over the whole range in east, central and West Africa.

In Uganda, the Skimmers are mainly recorded on Kazinga Channel in QENP and along the river Nile in MFNP. The decline observed in Uganda therefore, may be caused by factors beyond the national borders.

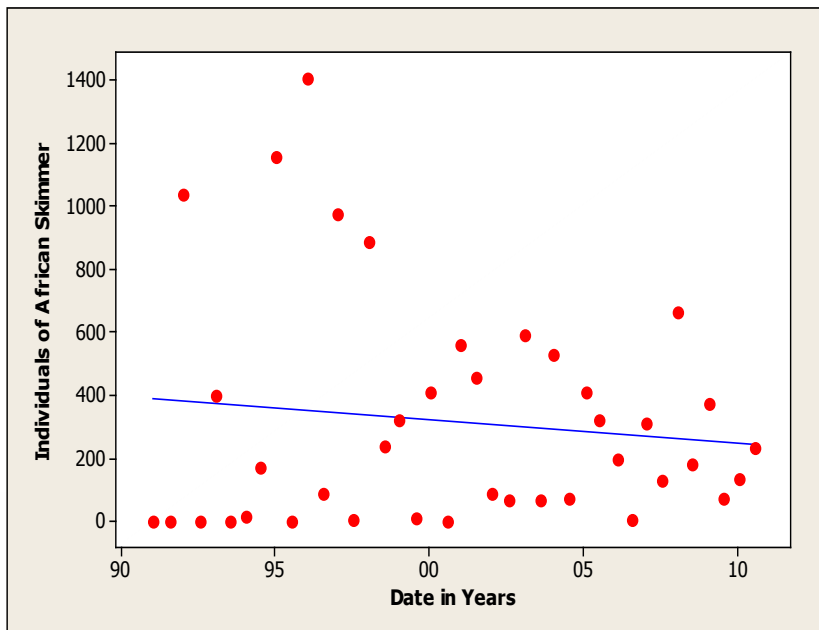
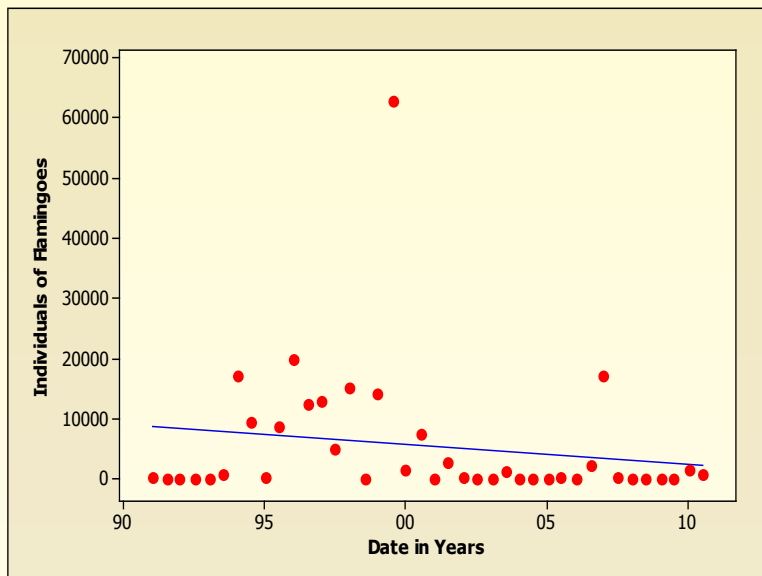


Figure 25: Trends of African Skimmers from 1990 to 2010 based on records from protected areas. Data extracted from AWC



Flamingos

Two species are recorded in Uganda, the Lesser Flamingo and the Greater Flamingo. Although there are isolated records of these species in different parts of the country including MFNP and Lake Victoria, the main sites for flamingos are the crater lakes in QENP and Kyambura Wildlife Reserve. Of the two species, the Lesser Flamingo is more abundant with sparse records of the Greater Flamingo. However the trend for the Lesser Flamingo numbers shows decline which may point at events at breeding sites outside Uganda but also the quality of sites especially the saline craters within Uganda (Fig 26).





Birds in ‘transformed’ wetlands;

A case of Kibimba Rice Scheme

The term wetland describes areas with characteristic plant and animal communities, and soil types adapted to water logged conditions. Therefore a wetland can be with natural habitats and vegetation but it can also be a transformed wetland such as a paddy rice scheme. Doho and Kibimba rice schemes are examples. Such wetlands may be good opportunistic feeding grounds for birds and if the changes are permanent, may become important sites for water birds.

Kibimba Rice Scheme, identified as an Important Bird Area (IBA) in 2012 has become an important area for birds in the last twenty years because the modified wetland favour some species such as herons, egrets, Ibises, cranes and many waders. In the last ten years, the number of species and individuals has been increasing especially the Palearctic migrants (Fig 27). Recent records of the Wattled Crane and Eurasian Curlew in the scheme show how such transformed wetland may be important for migratory species.

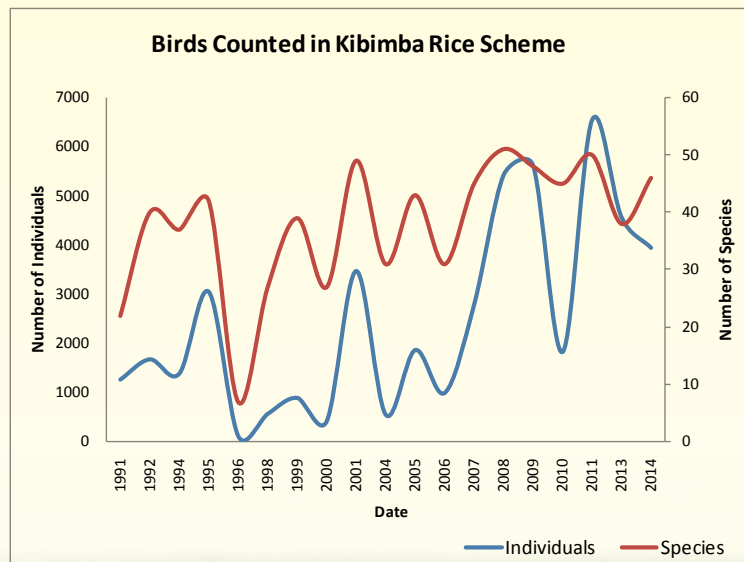
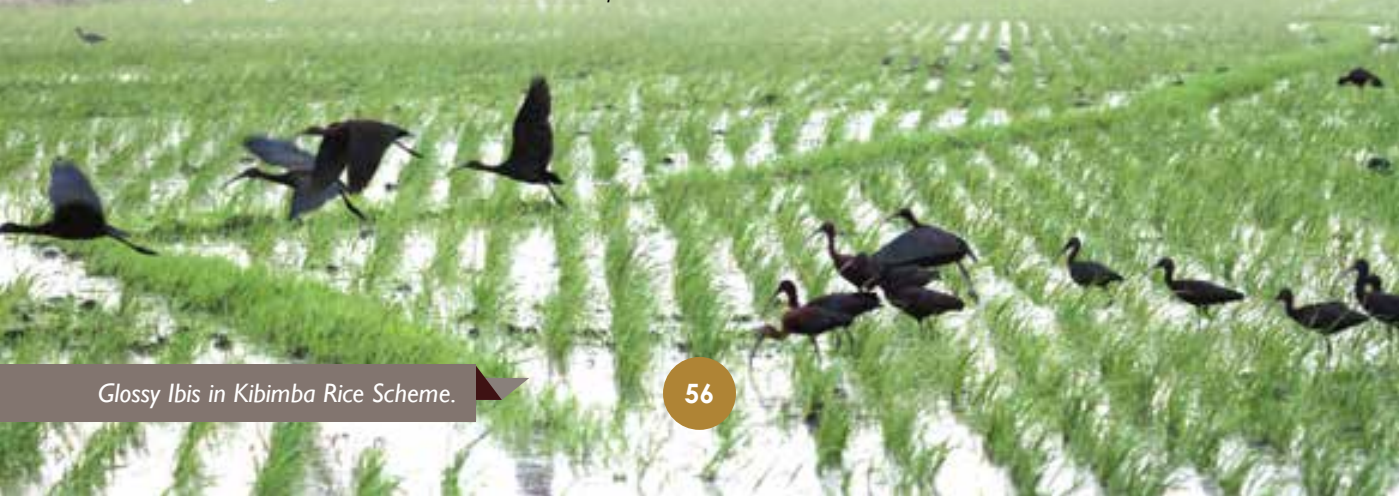


Fig 27: Trends in the number of species and number of individuals recorded in Kibimba Rice Scheme during the period 1991 - 2014



Monitoring land birds:

Bird Population Monitoring Scheme

The Common Birds Monitoring Scheme is a programme aimed at monitoring trends in the population of common and widespread bird species, following other successful schemes in Europe. In Uganda, this scheme is called the Bird Population Monitoring (BPM) because due to high diversity of birds and habitats and biodiversity uniqueness of different regions, there were no universal common birds across the country. The scheme has been running for six years from 2009-2014 covering 102 sites (Fig 28). The scheme has grown with increasing number sites monitored, the number of species recorded (Fig 29) and volunteers involved. Over 760 species (72% of the total for Uganda) have been recorded and the scheme has involved more than 120 volunteers.

The scheme comprises standardised counts along predetermined transects twice a year, in January and July. During the monitoring, observers record all bird species seen/heard (recognised by calls) in each of the 200m sections along the transect. Data generated by this scheme is used for species and site monitoring and informing national conservation action. The trends in species observed will show the current human activities or environmental changes in a particular site or impacting particular species. Currently the data generated by this scheme has been used to update the bird species checklist for Uganda. Finally knowing the status of the species in the country can guide national and global action in the conservation of these species. Currently the information helps tour operators and promoters on the best places for tourism development and is also shared with natural resources lead agencies to support management and conservation actions. The information has also been shared with private sector partners such as oil and gas exploration companies to determine avoidance areas where developments are taking place.

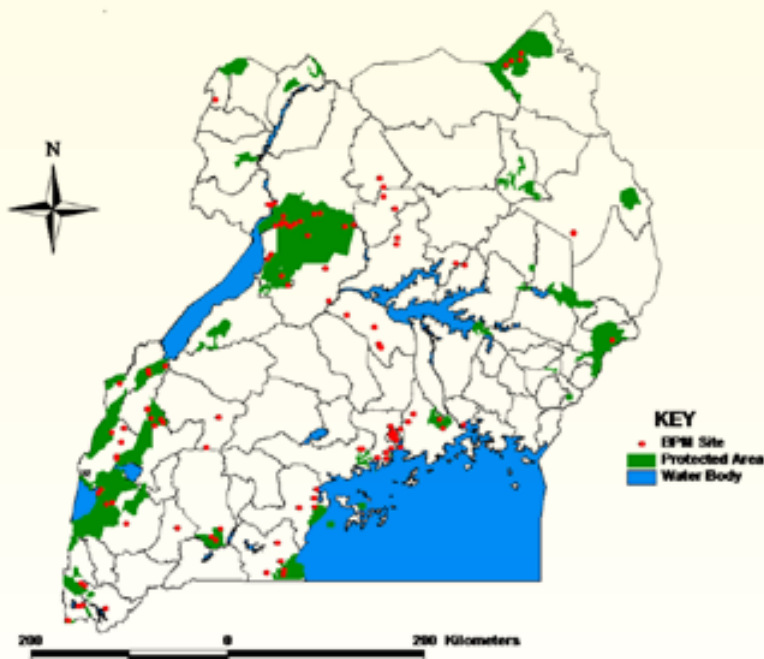


Fig 28: Map showing Bird Population Monitoring Sites in Uganda

Based on the five years monitoring of land birds, the following are the ten most abundant and wide spread species in the BPM sites in Uganda. Common Bulbul *Pycnonotus barbatus*, Bronze Mannikin *Lonchura cucullata*, Red-billed Quelea *Quelea quelea*, Speckled Mousebird *Colius striatus*, Marabou Stork *Leptoptilos crumeniferus*, Grey-backed Camaroptera *Camaroptera brevicaudata*, Red-eyed Dove *Streptopelia semitorquata*, Tawny-flanked Prinia *Prinia subflava*, Scarlet-chested Sunbird *Chalcomitra senegalensis* and African Thrush *Turdus pelios*.

The sites with the highest species richness are Kidepo Valley National Park followed by Queen Elizabeth National Park and then Murchison Falls National Park. This is an indication that protected areas not only protect the rare species but also the common species. However, many other species rich sites are located in privately owned small-scale mixed farmlands. This means that the conservation of these species requires full participation and involvement of local communities to ensure that effective measures are put in place.

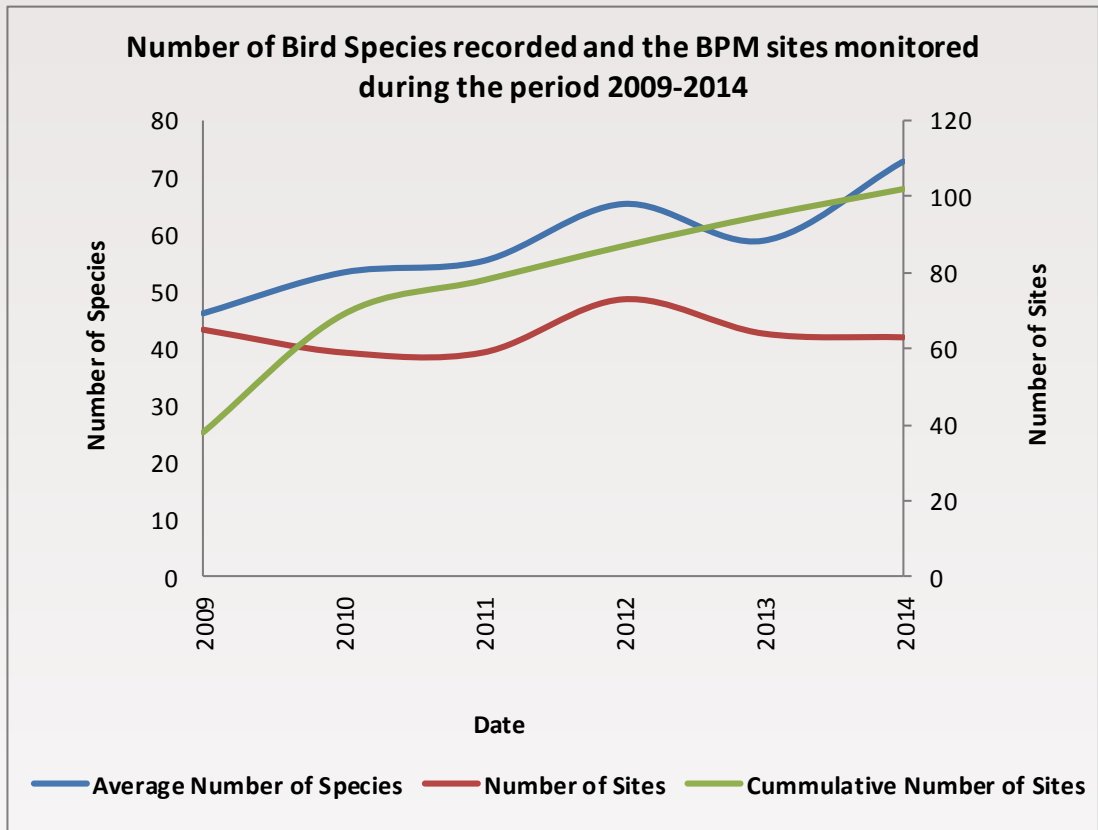


Fig 29. Graph showing the number of species as related to the number of sites covered during the period 2009-2014

Monitoring farmland birds

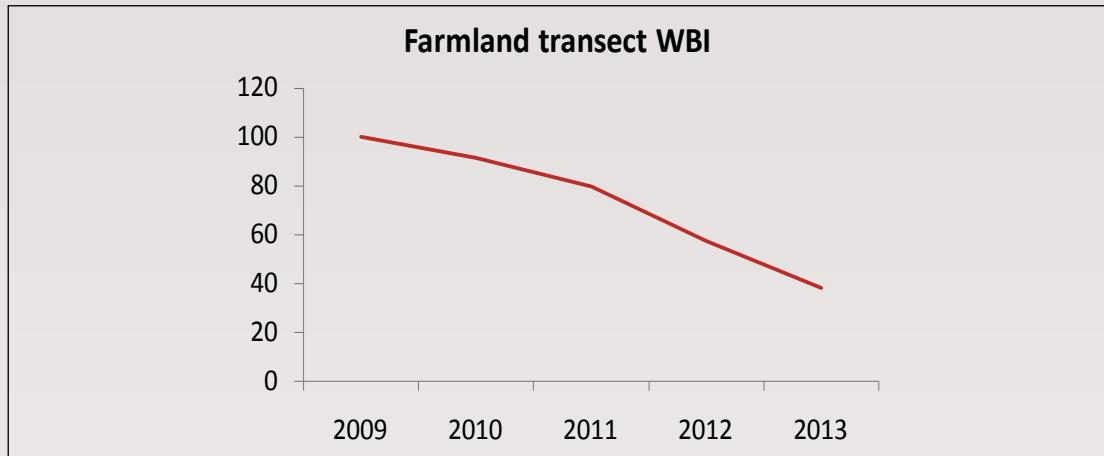
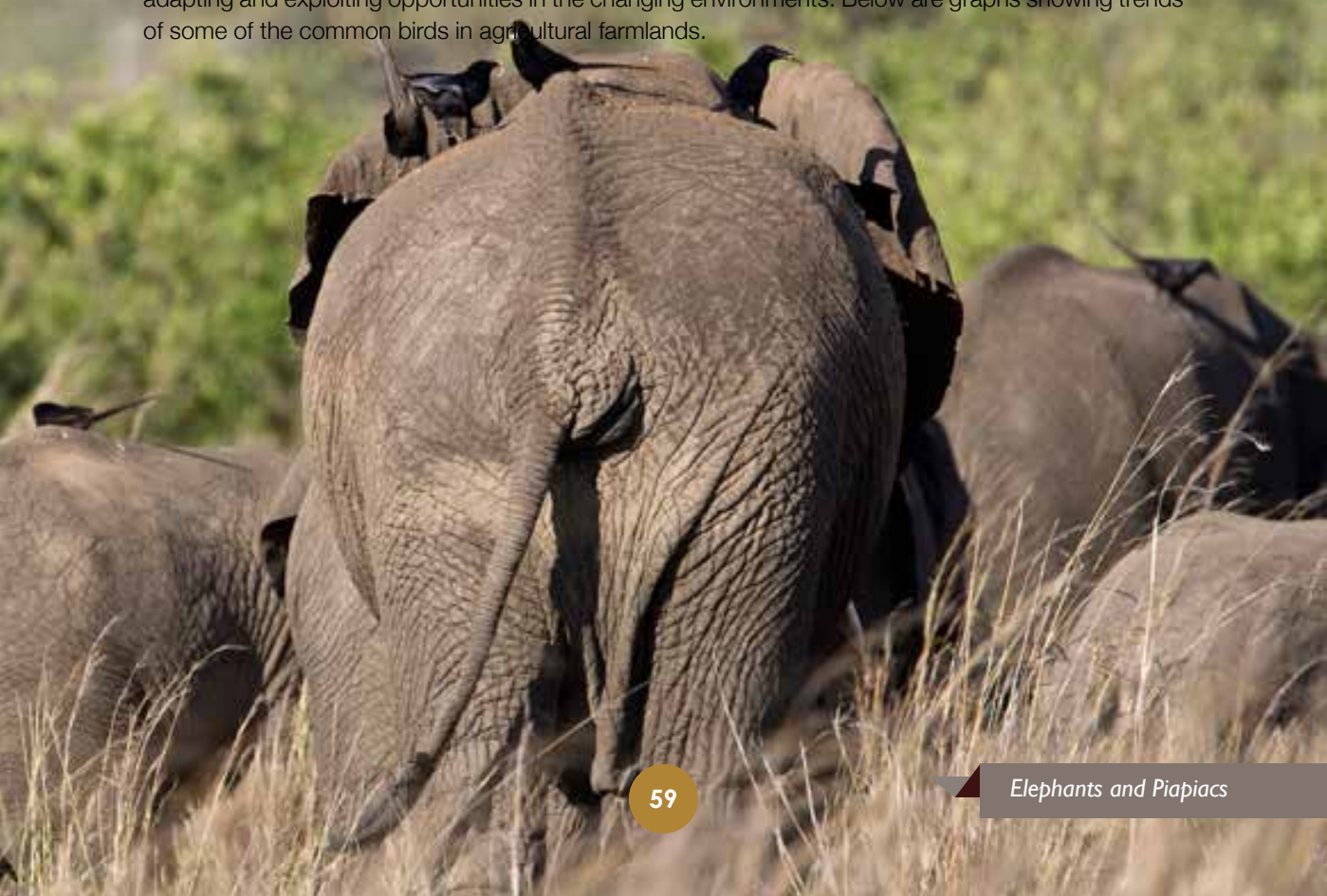


Figure 30: Wild bird Index (WBI) showing trends of farmland birds in Uganda

The Wild bird Index (WBI) shows how farmland birds in Uganda have declined over the five years period (Fig 30). Farmland here refers to small holder mixed farmland sites typical of most Ugandan landscapes. Only one species out of 29 analysed species shows a significant steady population increase. The majority of species show decreasing or stable populations (Fig 31). However, the study shows 43% of sites with increasing trends in bird numbers indicating that some species may be adapting and exploiting opportunities in the changing environments. Below are graphs showing trends of some of the common birds in agricultural farmlands.



Monitoring farmland birds

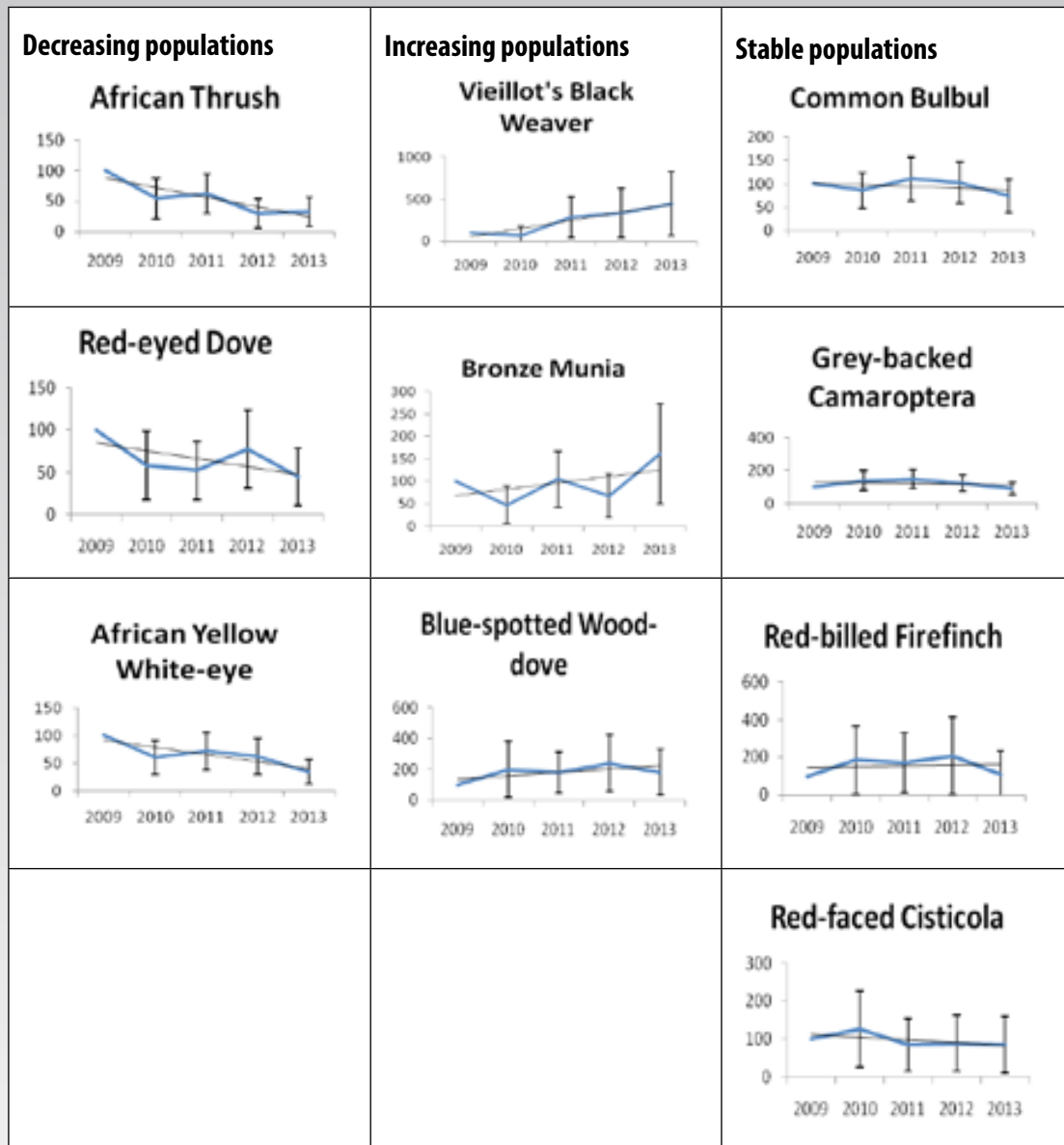


Figure 31: Trends of selected common birds recorded during the BPM over five years

There is need for continued monitoring and more detailed research to determine and understand the root cause of the trends observed in species populations. Studying the trends in common species is one of the ways we can try to understand the environmental variables better and tools to devise conservation measures for the sites and species around the country.

Monitoring raptor and vulture numbers

Raptors (the birds of prey)

Although there were records of raptors since the 1980s, regular monitoring did not take place until 2004. Since then the general trend so far points to a declining numbers of raptors. The routes/ transects monitored follow the roads used by Leslie Brown between the 1960s and 1980s which provide a baseline to compare with data obtained in 2000s and later years (Fig 32).

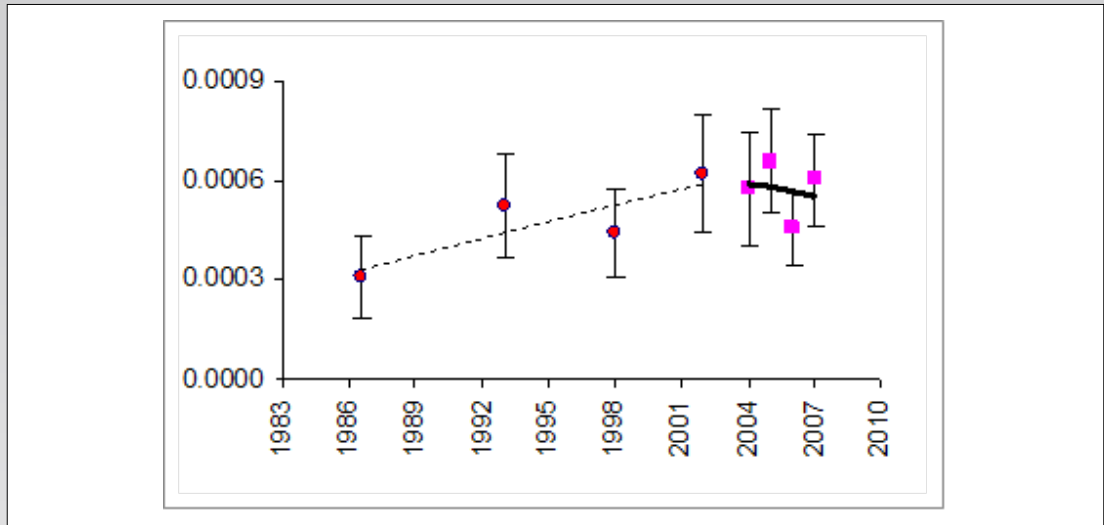


Figure 32: Trends of raptors from selected sites/ routes monitored



Vultures

In many parts of Africa and beyond, vulture populations are declining and similar trends are observed in Uganda. In 2008, NU started a regular Vulture monitoring programme. This programme has two components; 1) monitoring the Vultures in Kampala city notably around abattoirs and dumping sites and 2) counting vultures recorded on carcasses of cows provided by researchers in National parks.

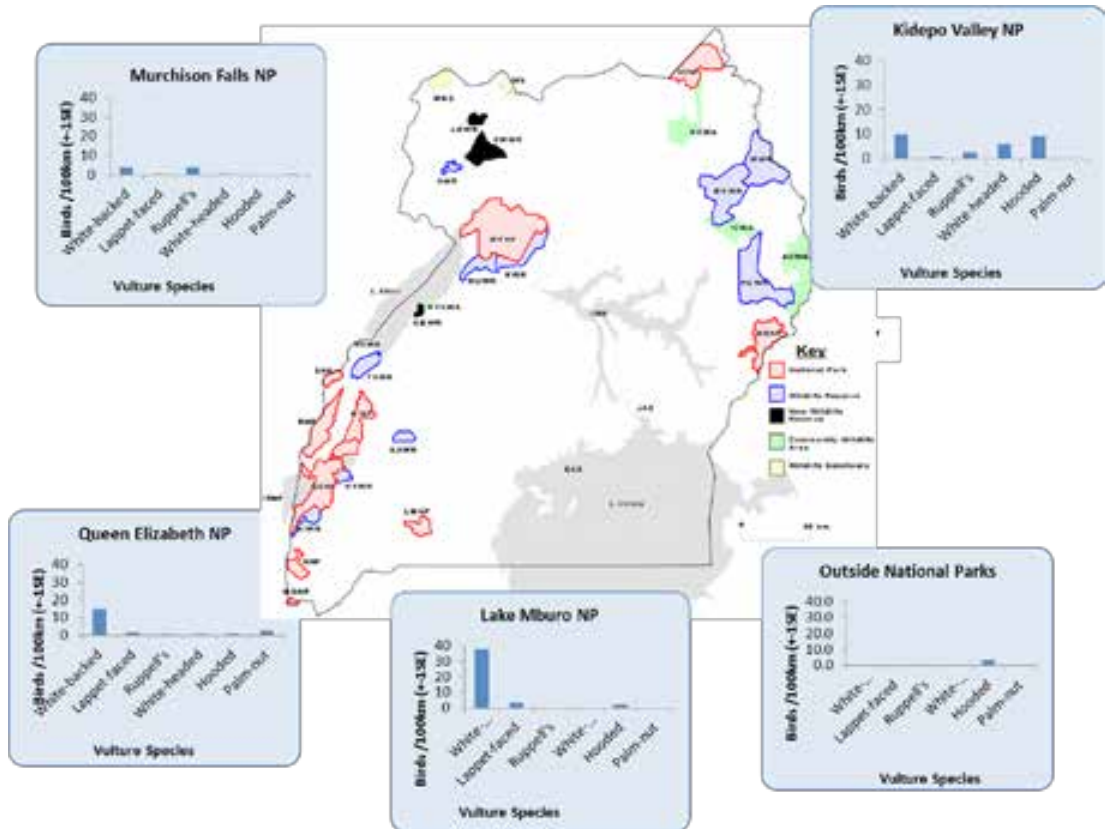


Figure 33: Population estimates of different vultures species recorded per 100km in protected and unprotected areas in Uganda. Data obtained from Population estimates from George Kapfu¹, Michael Opige, Derek Pomeroy and Phil Shaw 2012

White-backed and Lappet-faced Vulture encounter has the highest numbers recorded in Lake Mbuo NP (LMNP); Rüppell's Vulture encounter rates peaked at Murchison Falls NP (MFNP) White-headed Vulture at Kidepo Valley NP (KVNP); and Palm-nut Vulture at Queen Elizabeth NP (QENP) (Fig 33).

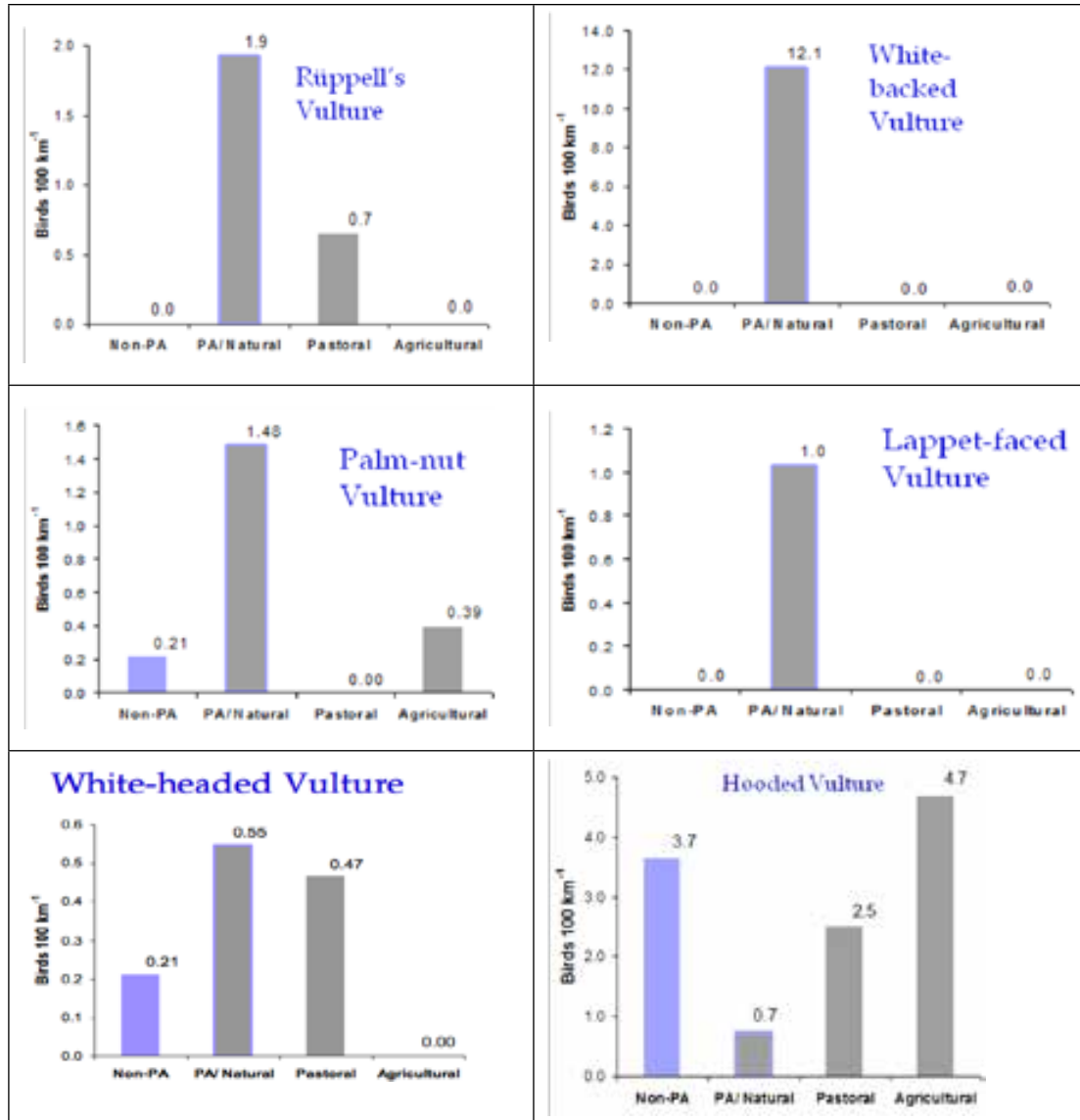


Figure 34: Population estimates of vulture species in different landuse areas surveyed in Uganda. Data obtained from Population estimates from George Kapahu¹, Michael Opige, Derek Pomeroy and Phil Shaw 2012

Three vulture species (Rüppell's, Palm-nut and White-headed) were encountered mainly within National Parks, while two species (White-backed and Lappet-faced) were encountered only within National Parks. In contrast, Hooded Vulture encounter rates were five times higher in non-protected areas, the species occurring predominantly in agricultural areas, urban areas, or in smaller towns (Fig 34).

Conservation Action

Collaborative Forest Management (CFM)

As a result of Collaborative Forest Management, communities are now taking lead in management and monitoring of forest including engaging in income generating activities such as ecotourism in and outside the forest. The lead agency together with other development partners are supporting communities in livelihood interventions such as soil and water conservation to protect their farmland from soil erosion and improved agricultural production on farm or promoting high value crops for better yields. For example NatureUganda has supported community members around Echuya Forest Reserve including Bakiga, Bafumbira and Batwa households to conserve the reserve.

Similar activities were implemented in Kasyoha-Kitomi Forest Reserve and other development partners have engaged in similar interventions around other critical forests. The results have been, regulated access to forest products under agreed arrangements through CFM agreements, improved community attitude towards the forest and a better sense of community ownership. Mr. Tibesigwa Amos, a community member from Kashoha-Kitomi says *“we believe when this forest is restored, it will be for our own benefit because we are allowed to access a few regulated products like fire wood and medicinal herbs”*.

To date, NatureUganda has facilitated a total of 11 CFM agreements. This concept of co-management of the forests by NFA through CFM agreements will ensure long-term protection of the ecological integrity of the forests and safe guard biodiversity.

Site Support Groups (SSGs)

Engaging local communities and other local partners including local government leaders has been a core conservation strategy of many conservation groups. SSGs are the entry nodes for community conservation actions in places where they exist. SSGs also known as Local Conservation Groups describe a group of local stakeholders who share a common commitment to the conservation of a particular IBA despite the varied background, age, occupation and gender. They provide a link between the local communities and the national institutions such as conservation NGOs, government agencies and researchers.

SSGs are active at Musambwa Island, Lutembe Bay, Mabamba Bay, Echuya FR, Lakes Opeta, Bisina, and Lake Katwe. All the SSGs play different roles in their various areas to promote sustainable use approaches and have good understanding of the natural resources and the local context in which they are managed. For example, they have organized and participated in training programmes in natural resources management, tourism development and promotion such as the Big Birding Day. The groups are also engaged in alternative livelihood activities such as income generation to reduce pressure and stop overexploitation of resources in IBAs.

Continued collaboration with the SSGs has enabled NatureUganda to monitor threats and impacts of interventions and major development in all IBA sites. In return NatureUganda collaborates with communities in project implementation such as the Local Empowerment project (LEP) to empower the local communities around IBAs in sustainable resource use and conservation.

Monthly public awareness and education

NatureUganda carries our public awareness and education activities for its members and the general public. The programme targets the adults through monthly public talks, monthly nature walks and quarterly excursions, as well as youth and children through explorer clubs in schools and tertiary institutions. The purpose is to create awareness of the importance of conservation, environment and the benefits linking natural resources and sustainable livelihoods. This programme helps the audiences to understand sustainable use, and management of natural resources, issues related to climate change, mitigation and adaptation, governance of natural resources, and the roles and responsibilities of all. The programme nurtures skills, knowledge, values, attitudes and change of behaviour. It helps to bring up responsible citizens by instilling a sense of responsibility in our people.

Laws, regulation and policies

Regarding legislation, Uganda has over 60 statutes and associated policies apart from the Constitution that address environmental management. Most of the statutes enacted are comprehensive, cross-linked and establish institutional frameworks for enforcement. The policy and legislation framework aim at supporting and influencing biodiversity conservation and sustainable use of resources.

The sectoral policies in place include those for forestry, fisheries, wetlands, water, wildlife, agriculture, population, education and other. However, various assessments have revealed that most laws have not been adequately enforced by the authorised institutions due to a wide range of constraints including weak law enforcement capacity, inadequate deterrents and incentives and conflicting mandates. Initiating a multi-sectoral and participatory legal reform programme is important to facilitate the integration of biodiversity issues in all laws and their attendant regulations and to improve capacity for law enforcement.

Multilateral Environmental Agreements (MEAs)

Over the past decades, numerous multilateral environmental agreements (MEAs) have been adopted and there are currently over 500 MEAs registered with the United Nations (UN), 150 of which deal with biodiversity at some level. Uganda is a signatory to several of these MEAs and the following have direct impact on conservation of birds;

- ***Ramsar Convention for the protection of wetlands of international importance.***

In response to this convention, Uganda developed a national wetlands policy to protect wetlands in Uganda and in addition designated 12 sites as wetlands of international importance. 11 of these sites were identified using birds as one important factor for qualification.

- ***Convention of Migratory Species (CMS)***

also known as the ***Bonn Convention*** including its associated agreements and protocols such as African-Eurasian Waterbird Agreement (AEWA) is dedicated to the conservation of migratory species and their habitats. Under AEWA agreement Uganda has identified priority species of birds for conservation or specific species action planning to guide their conservation.

- **Convention on Biological Diversity (CBD)**

which promotes conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources. The convention has been at the forefront in setting targets to reduce biodiversity loss through its 10 year strategic plans, which act as umbrella plans for national level planning through biodiversity strategies and action plans (NBSAPs). National reports continue to provide status of biodiversity in Uganda including birds.

- **Convention on International Trade on Endangered Species (CITES)**

aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. It has been successful in mobilising against international trade in endangered species. However, there are admirers and critics to the convention through its global engagements. While on the one hand the convention is revered for real progress made to protect species worldwide and others commending the effectiveness of the Convention in regulating and controlling trade in endangered species; on the other hand, some argue that the convention's entire approach is misconceived and the convention has failed to stop wildlife trade which is major driver to biodiversity loss in developing nations. Sentiments in Uganda would support this view with continued export of wildlife without proper assessments, export and trade in endangered species or their products, poor control measures and lack of capacity which continue to drive species to risk.





Species action plans (SAP)

Species action plans are recognized instruments addressing priority individual species threats and conservation needs. They are designed to protect and restore biological systems that support the conservation of the species concerned. A species action plan will require technical expertise, good information base and financial resources to develop and implement. Whereas action plans have been developed for many species, they have had mixed successes. On one hand SAPs have led to recovery and increased protection of species and on the other hand criticisms point to the fact that such plans emphasize specific species of plants and animals without considering other lower or non-charismatic organisms or wider ecosystem.

A species action plan is a conservation strategy that involves the following;

1. preparing inventories of biological information for selected species or habitats
2. assessing the conservation status of species within specified ecosystems
3. creation of targets for conservation and restoration
4. establishing budgets, timelines and institutional partnerships for implementing the action plans

Table 2: Bird species in Uganda that have action plans at national or international levels.

Species	Type of action plan	
Blue Swallow <i>Hirundo atrocaerulea</i>	International	National
Grauer's Rush warbler <i>Bradypterus graueri</i>	International	National
Grey Crowned Crane <i>Balearica regulorum</i>	International	National
Lesser Flamingo <i>Phoeniconaias minor</i>	International	
Madagascar Squacco Heron <i>Ardeola idae</i>	International	
Lappet-faced Vulture <i>Torgos tracheliotus</i>	International	
Kori Bustard <i>Ardeotis kori</i>	International	
Shoebill <i>Balaeniceps rex</i>	International	

Restoration of degraded sites

Habitat restoration seeks to repair areas that have been subjected to habitat destruction or degradation. Habitat destruction alters natural ecosystems and is one of the primary factors involved in causing species of plants and animals to be threatened with extinction. Restoration would involve management, protection, and re-establishment of plant and other communities to safeguard wildlife. NatureUganda has been involved in habitat restoration activities in various IBAs. For example NatureUganda in collaboration with Uganda Wildlife Authority, Katwe local government, Ministry responsible for wildlife and communities through Katwe Ecotourism Information Centre are working together to safeguard Munyanyange Crater Lake. Katwe Crater lakes, in particular Lake Munyanyange is an animal sanctuary and serves as a wallow for animals from Queen Elizabeth National Park. The crater is also important for waders and roosting waterbirds such as Lesser Black-backed Gulls *Larus fuscus*, and a major site for the population of Lesser Flamingoes in Uganda.



Benefits

Birds may improve productivity on farm

Many birds, in particular insect feeders, act as biological pest control agents through feeding on the insect pests such as larvae and adults. Clearly birds present various advantages and benefits on farms including reducing on the destruction of crops and thus increasing on the yields that would have been lost to pests. Simple actions such as leaving shade trees on farms or maintaining hedge rows may promote conservation of species. It is also important to mention that there are a few species such as Red-billed Quelea *Quelea quelea* that are recognized as pests and can be very destructive to cereal crops such as sorghum, rice or millet.

Birds as scavengers

As scavengers, Marabous are very useful in cleaning refuse, that is removing waste food, eating carrion scattered in town. There are between 5000-10,000 individual marabous in Kampala, the numbers fluctuating between breeding and non-breeding seasons. On average each individual bird eats at least 0.5-2 kg of food daily. Since the birds are scavengers and feed on refuse, it could be argued that the birds remove (collect) over 5000 kg (5 tons) of waste daily from the city and its environs. Therefore, of the 1000 metric tons of garbage collected by Kampala City Authority, Marabous remove an extra 5-10 metric tons of waste daily. Removing rotting 'stuff' from different corners of the city often inaccessible by cleaners and consequently helping in reducing potential health hazards.

In addition, marabous have become a tourist attraction and it is not uncommon to find visitors gazing at the large birds living in urban centres. With favourable feeding and breeding conditions that prevail in the city, Marabous and other scavengers will continue to flourish in the city. However, if they are denied food by keeping the city clean, they will move to other places where better living conditions are available.

Birds for food and other cultural practices

In some communities of Uganda birds are locally hunted and often eggs are harvested for food. In some cultures in the north and north eastern Uganda, the feathers of some species such as Ostriches are used in traditional ceremonies. The impacts of these traditional and cultural practices on bird species or populations have not been measured but can potentially threaten species survival.

Birds, bird watching and tourism

Wildlife tourism has increasingly become important in many countries as a source of foreign exchange especially in developing countries. Today Uganda receives birdwatchers in thousands and revenues from birdwatching run into millions of shillings. With over 1050 species of birds including over 800 resident species in only 236,000 sq km, Uganda is probably the best bird watching spot in Africa. Uganda has a more impressive list of bird species compared to the whole of Europe and for its size it remains a splendid destination for bird watchers across the world.

Tourist arrivals are a key component of the direct contribution of Tourism sector to the country's development. Already tourism and travel is a major sector in Uganda's development contributing substantially huge income and employment opportunities. In 2014, Uganda generated USD 1.4 billion in tourist arrivals and this was expected to grow by 7.8% in 2015. The country is expected to attract 1,368,000 international tourist arrivals in 2014. By 2024, international tourist arrivals are forecast to total 2,194,000, generating an expenditure of USD 2.0bn, an increase of 5.8% annually. The total contribution of travel and tourism to employment was 452,000 jobs in 2013 and this is expected to rise by 4.3% in 2014 (WTTC, 2014).

Although avitourism has developed rapidly in the last two decades, birdwatchers are still dominated by non-resident tourists. NatureUganda has worked over the years with the tourism and wildlife sectors, as well as bird guides associations to raise enthusiasm for birds and birding at the national level. In particular, events such the monthly nature walks, regular bird monitoring activities, national Big Birding day events have improved and increased awareness on birds, their conservation needs and domestic tourism. Data from some sites such as Mabira Forest Reserve show increase in local tourists (Fig 35.) and this is projected to increase exponentially in future. It is estimated that Uganda receives over 10,000 tourists every year whose focus and interest is bird watching. Assuming every one of them spends atleast US\$5000 (average expenditure of a tourist since birders stay longer in a country), then bird watching brings into the economy over UD\$50 million annually.

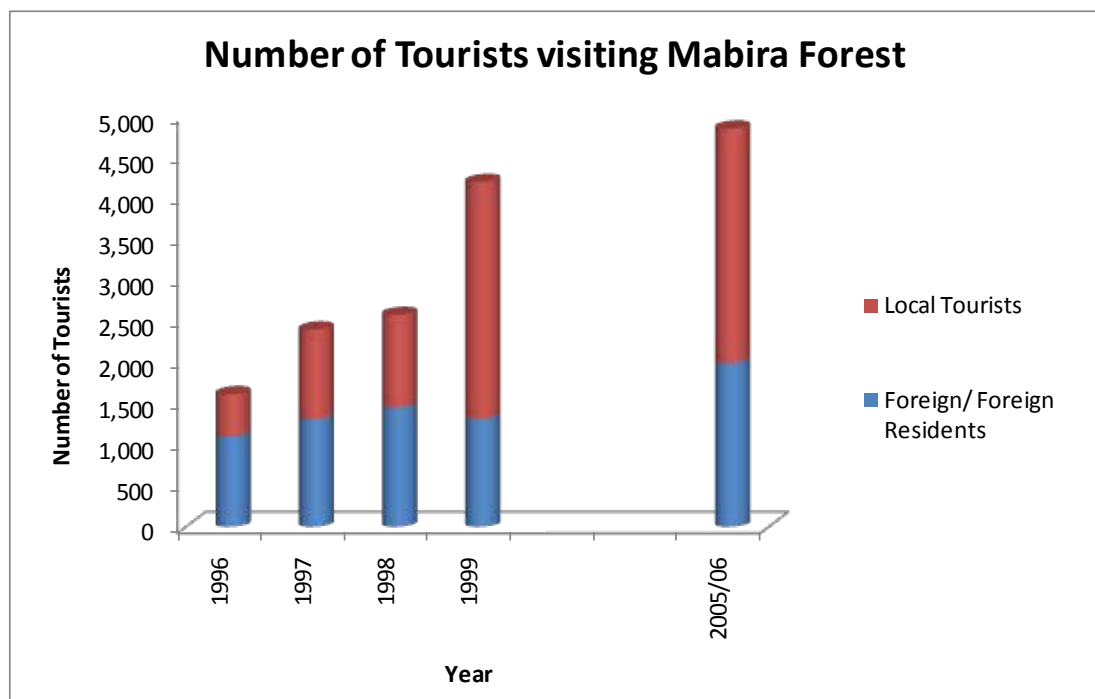


Figure 35: Trends in number of tourist arrivals at Mabira Forest Reserve

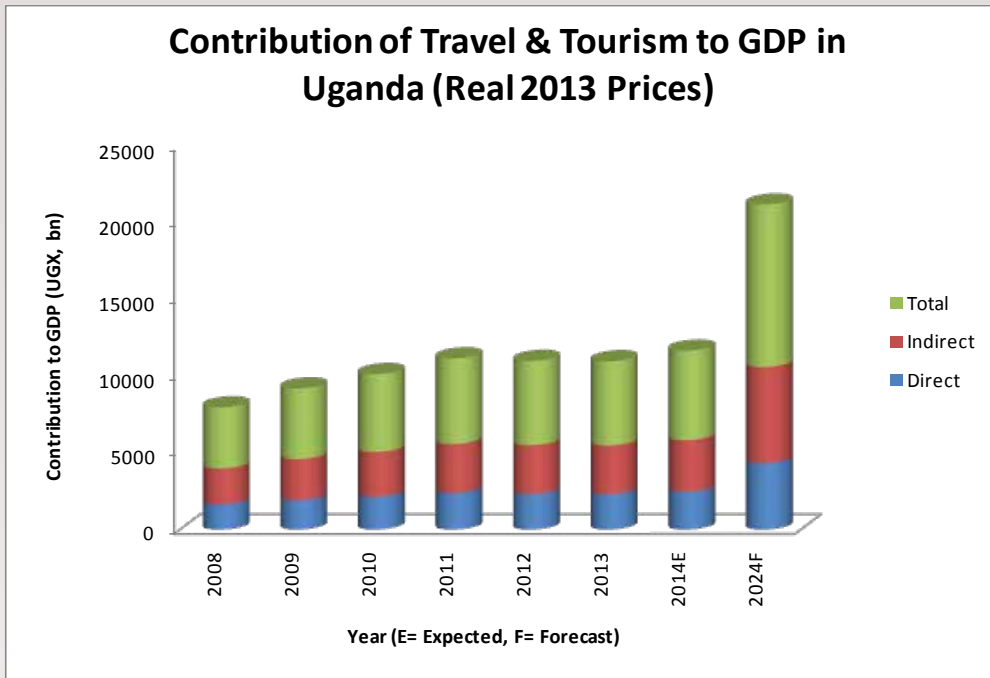


Figure 36: Contribution of travel and tourism to GDP in Uganda. Source: WTTC, Travel & Tourism Economic Impact 2014



A tourist admiring one of the gigantic buttress trees in Mabira forest

The total contribution of travel and tourism to the country's GDP was UGX 5,495.0bn (US\$ 2.1bn) in 2013 and this is expected to grow by 6.4% to UGX 5,845.5bn (US\$ 2.2bn) in 2014. This contributes 7.9% of the country's total GDP (Fig 36).

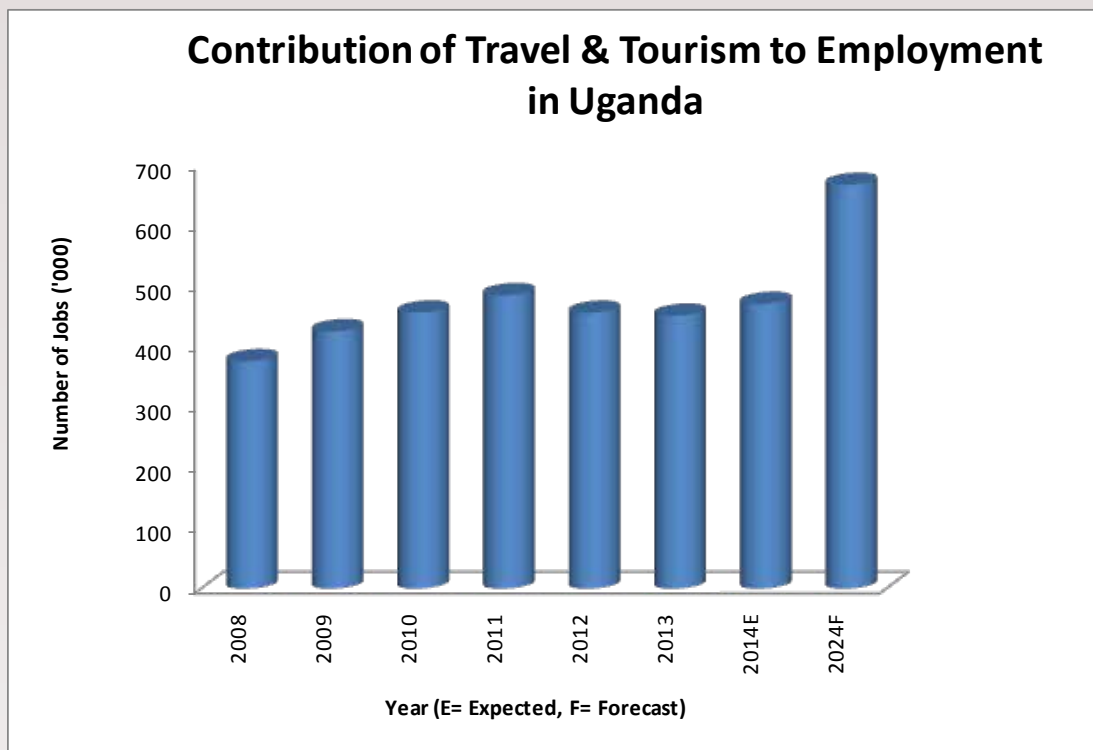


Figure 37: Contribution of travel and tourism to employment in Uganda. Source: WTTC, Travel & Tourism Economic Impact 2014

The total contribution of travel and tourism to employment was 452,000 jobs in 2013 and this is expected to rise by 4.3% in 2014 (Fig 37).



Sources of Information

The State of Birds in Uganda has consolidated available information from various research studies and monitoring programmes by NatureUganda including;

- Important Bird and Biodiversity Areas monitoring
- State, pressure and response programme
- Bird Population Monitoring
- African Waterbirds Census
- Raptor and Vulture counts programme
- Other sources of data was derived from Species surveys and monitoring including Blue Swallow, Grauer's Swamp Warbler, Grey Crowned Cranes, Marabou storks

Additional information was derived from conservation activities and programmes on species, sites and habitats. The conservation activities include working together with communities, local and central government or lead agencies as well as collaboration with other civil society organizations.

Important Bird Areas Monitoring Programme

This programme focuses on monitoring state, pressure and response to the 34 Important Bird Areas (IBAs) in Uganda. A simple global monitoring framework for IBAs was designed and guides the monitoring process. The variables monitored have often been referred to as State, Pressure and Response, "the SPR model". The three variables (SPR) complement each other and all contribute to the resultant trend analysis. Status means the condition of the IBA assessed using population of the trigger species or their habitat as proxy. Pressures on the IBAs refer to threats they face and are assessed using timing, scope and severity. Response refers to conservation efforts that are being undertaken to either reduce the threats or improve on the condition of the IBAs. These can range from research programmes, livelihood improvement initiatives, community support to conservation and large scale conservation projects.

African Waterbirds Census

Monitoring of waterbirds started in early 1990s as part of the continental waterbird census lead globally by Wetlands International. The counts are conducted in January and July every year and are carried out by trained volunteers on more than 30 sites. All open wetland habitats and lakes are represented including main lakes (Lakes Victoria, Kyoga, Bisina, Opeta, George, Edward, Mburo) and associated swamps and marshes, the Nile valley, rice fields in eastern Uganda, artificial wetlands such as Mutukula ponds as well as saline craters in the western Rift Valley. The censuses are aimed at monitoring waterfowl numbers in all major wetlands in the country with special emphasis on migrating species. Uganda hosts a number of Palearctic and Afrotropical migrants that largely depend on Uganda's waters and wetlands in winter periods. Different processes including waterfowl population estimates of Wetlands International, Important Bird Areas of BirdLife International, Ramsar designation by Ramsar Bureau and others have used the results from this monitoring programme.

Bird Population Monitoring

The Bird Population Monitoring Scheme formerly known as the Common Birds Monitoring Scheme is an international programme aimed at monitoring trends in the population of common and widespread bird species in the World. In Uganda, this scheme has been running since 2009 across all parts of Uganda covering sites in and outside Protected Areas. Counts are conducted twice a year in January and July. Data from this programme is fed into the WorldBirds database, where it can be used to inform national, regional and global conservation actions for the protection birds and the wider biodiversity. It can also be used locally to inform policy decisions by national government on the conservation of biodiversity.

Raptor Road Counts

NatureUganda started road counts for raptors in 2008. This follows similar counts by a renowned ornithologist Leslie Brown who conducted the counts in 1960s, 1970s and 1980s. The 40-year interval since Leslie Brown's survey in the 1960's, makes the present study to be particularly interesting. The purpose of the Raptor counts is to continue carrying out counts on the roads used by Leslie Brown in 1960s and compare results with records available for the 1970s and 1980s. The surveys cover three savannah National Parks (Queen Elizabeth, Murchison Falls and Lake Mburo) and connecting public roads. The routes cover Protected Areas, agricultural land and pastoral lands in the Western, Central, Northern and North Eastern parts of the country. The counts are conducted annually between January and March. Raptor counts have been supported by the Peregrine Fund and the Royal Society for the protection of Birds and it is hoped that the annual surveys will be maintained whenever funding becomes available.

Vulture Monitoring programme

Vulture populations globally have been declining but are particularly noticeable on the Indian and African subcontinents. In Uganda, there have been regular reports of vulture carcasses in different parts of the country and cause of mortality is not well known. However, according to records in conservation areas as well as agricultural, veterinary and medical fields in Uganda, most deaths of wild birds such as vultures occur as a result of secondary poisoning. Most affected in such poisoning incidents are predators especially in National Parks surrounded by pastoral communities. Since such death occurrences have involved scavenging birds in protected areas and refuse dumps in towns, secondary poisoning cannot be ruled out. The global and national incidents triggered the vultures monitoring scheme to determine the current status and the trends for the vulture species across their range in Uganda to guide conservation actions. The counts are based on the provisioned Carcass counts in National parks and the annual Kampala vulture counts. The provisioned counts involve a simple method where a cow is slaughtered and the carcass left at an open, grassy site. This survey has been conducted in each of Uganda's four savannah parks i.e. Murchison Falls, Queen Elizabeth, Lake Mburo and Kidepo Valley National parks on the same day and at approximately the same time in all sites. The Kampala vulture counts are conducted annually between August and September, in and around Kampala to mark the world Vulture day. The counts are conducted by volunteers at all known abattoirs in and around Kampala, Fish factories and the major dumping site such as Kitezi.

Further Reading

- Bennun, L. A., Njoroge, P., and Pomeroy, D. (2000). Birds to watch: a red data list for East Africa. *Ostrich*, 71(1-2), 310-314.
- Bennun, L. A and Njoroge, P. (1996). *Birds to watch in East Africa: A preliminary Red Data list*. National Museums of Kenya.
- BirdLife International 2014. *State of World Birds Report*. BirdLife International, Cambridge, UK.
- Brooks, T., Balmford, A., Burgess, N., Hansen, L. A., Moore, J., Rahbek, Byaruhanga A, C., ... & Wondafraash, M. (2001). Conservation priorities for birds and biodiversity: do East African Important Bird Areas represent species diversity in other terrestrial vertebrate groups. *Ostrich*, 15(Suppl.), 3-12.
- Byaruhanga A 2005. The bird communities in wetland habitats of selected Important Bird Areas (IBAs) in Uganda. Msc dissertation, Makerere University.
- Byaruhanga, A, Arinaitwe, J and Williams C 2002. Large congregations of White-winged Black Tern *Chlidornias leucopterus* at Luembe bay, Lake Victoria. *Bill. of the ABC Vol.9*. 1:25-26
- Byaruhanga, A., Kasoma, P & Pomeroy, D. 2001. Important Bird Areas in Uganda, Kampala: East Africa Natural History Society.
- Carswell M., Pomeroy D., Reynolds J. & Tushabe H. 2005. *The Bird Atlas of Uganda*. British Ornithologists club, University of Oxford OX1 3PS.
- Fry C.H. & Keith S. 2004. *The Birds of Africa, Volume VII: Sparrows to Buntings*, Princeton University Press, London.
- Gauthreaux Jr, S. A., & Belser, C. G. (2006). Effects of artificial night lighting on migrating birds. *Ecological consequences of artificial night lighting* (C. Rich and T. Longcore, Editors). Island Press, Washington, DC, USA, 67-93.
- George Kaphu¹, Michael Opige², Derek Pomeroy³ and Phil Shaw⁴ 2012; *Population estimates for vultures in Uganda*. A report.
- Global Biodiversity Outlook 2 (2006), Chapter 2: The 2010 Biodiversity Target: Establishing current trends, p.25
- Nalwanga Dianah. 2012. *The Conservation of Biodiversity in Agricultural Landscapes in Uganda: A case of Birds*. PhD Thesis. School of Agriculture and Biological Sciences, Makerere University, Uganda
- NatureUganda 2011. *The economic Valuation of the proposed degazettement of Mabira Forest Reserve*. NatureUganda, Kampala.
- NatureUganda 2012. *The Uganda Bird checklist*. NatureUganda, Kampala
- NatureUganda 2012. *The Uganda Bird Checklist*. NatureUganda. Kampala, Uganda.
- NBDB 2008. *The State of Uganda's Biodiversity*. National Biodiversity Databank. Sixth Biennial report.
- Opige, M. & Byaruhanga, A. NatureUganda (2009). *Important Bird Areas in Uganda, Status and Trends Reports 2008*.
- Opige, M. & Byaruhanga, A. NatureUganda (2010). *Important Bird Areas in Uganda, Status and Trends Reports 2009*.
- Opige, M. & Byaruhanga, A. NatureUganda (2011). *Important Bird Areas in Uganda, Status and Trends Reports 2010*.
- Plumptre, A. J., Davenport, T. R., Behangana, M., Kityo, R., Eilu, G., Ssegawa, P., ... & Moyer, D. (2007). The biodiversity of the Albertine Rift. *Biological conservation*, 134(2), 178-194.
- Pomeroy, D., Shaw, P., Opige, M., Kqphu, G., Ogada, L., & Virani, Z. Vulture populations in Uganda: using road survey data to measure both densities and encounter rates within protected and unprotected areas. *Bird Conservation International*, 1-16.
- Stephenson, T. & Fanshawe, J. 2002. *Field Guide to the Birds of East Africa*. London: T & A.D. Poyser.
- Tushabe, H., Kalema, J., Byaruhanga, A., Asasira, J., Ssegawa, P., Balmford, A., ... & Williams, C. (2006). A nationwide assessment of the biodiversity value of Uganda's important bird areas network. *Conservation Biology*, 20(1), 85-99.
- www.birdlife.org/africa/news/sudan-killer-line-disconnected. Accessed on 30th April 2015)
- WTTC 2014. *The economic impact of Travel and Tourism 2014*. World Travel and Tourism Council, London, UK.

UGANDA

a "hidden eden....and a wonderland for birds"
(an explorer 1900)

Species list at **1057**,
about **48%** of Africa's total number of birds

34 IBAs contain **98%** of all bird species in Uganda
and **87%** of other plants and animals



About *Nature Uganda*

NatureUganda, the East Africa Natural History Society (EANHS) in Uganda, is a membership, research and conservation organization established to undertake conservation actions using scientifically proven methods for the benefit of the people and nature. It is the oldest membership organisation in Uganda, having been founded (as EANHS) in 1909 as a scientific organization with the primary aim of documenting the diversity of wildlife in East Africa.

By the mid-1990s, EANHS-Uganda had attracted many members and broadened the scope of activities in scientific research, conservation action, public awareness raising and advocacy. At this point it was realized that a formal registration within Uganda would be necessary as a response to the increasing activities. The Society was therefore registered as a non-profit, independent national organization in 1995 with the operational name of NatureUganda – The East Africa Natural History Society. Her sister in Kenya is NatureKenya – The East Africa Natural History Society.

NatureUganda has been the national Partner of BirdLife International since 1995, and the society's programmes are based on the four well-established pillars of BirdLife global strategy, namely Species, Sites, Habitats and People.

NatureUganda's mission is promoting the understanding, appreciation and conservation of nature. In pursuing its mission NatureUganda strives to:

- Create a nature-friendly public
- Enhance knowledge of Uganda's natural history
- Advocate for policies favorable to the environment
- Take action to conserve priority species, sites and habitats.

NatureUganda has its secretariat in Kampala- Naguru, and services its 2,000 members and supporters through branches in Gulu, Mbale, Busitema and Mbarara.

Inspired by the original purpose of the East African Natural History Society to document natural history of East Africa, NatureUganda's work is hinged on scientific information generated through well laid down research and monitoring programmes. Considering that 90% of Uganda's GDP is derived from Natural Resources (tourism, forestry, fisheries), biodiversity conservation is a priority for the country. NatureUganda supports biodiversity protection and economic development through its research, monitoring and conservation programme, which provides quality scientific information mainly using birds as indicators to support local and national governments to make informed decisions. The support is provided through established partnerships with government agencies including Uganda Wildlife Authority (UWA), National Forestry Authority (NFA), National Environment Management Authority (NEMA), Wetlands Management Department (WMD). This first edition of "The State of Uganda's Birds" is a culmination of this collaborate effort to document the state of biodiversity in Uganda.

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