Kenya's Important Bird Areas

Status and Trends 2011

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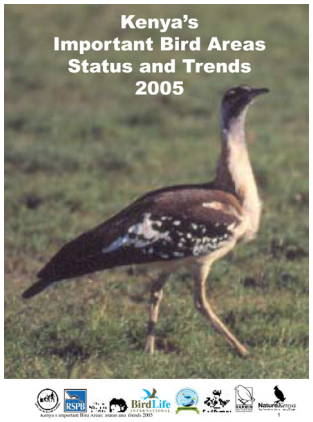

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Kenya's Important Bird Areas

Status and Trends 2011

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Cover photo: **Male Clarke's Weaver** *(Ploceus golandi)*

Photo by **STEVE GARVIE**

The endangered Clarke's Weaver (*Ploceus golandi*) is endemic to Arabuko-Sokoke forest and Dakatcha Woodland, both in Kilifi County Kenya. Its population was estimated at not more than 2,000-4,000 mature individuals in the early 1980s, and there has not been a more recent assessment. Within the Arabuko-Sokoke Forest, it has been recorded from all forest habitats, although it seems to prefer Brachystegia woodland where it feeds high up in the canopy on invertebrates.

Clarke's Weavers are considered endangered because of their low numbers and limited range. In the past two decades, their Brachystegia forest habitat has been under intense threat. The main threats are illegal logging in Arabuko-Sokoke Forest and Dakatcha Woodland, conversion of forest into agricultural land in Dakatcha Woodland and commercial charcoal production

The breeding ecology of Clarke's Weaver has been a mystery that members of Dakatcha Woodland Conservation Group and other interested parties have been working hard to solve. In March 2013, the mystery ended when a team from Dakatcha Woodland Conservation Group and Nature Kenya found Clarke's Weavers nesting in a small seasonal wetland on the edge of Brachystegia forest in Dakatcha Woodland.

So now, in 2013, we know that Clarke's Weaver requires forest canopy for feeding and swamps for breeding. We therefore need to protect both these areas if we are to save this bird. This can be done through the implementation of the Arabuko-Sokoke Forest management plan and completion and implementation of Dakatcha Woodland Management Plan. There is also need to explore the possibility of gazetting some parts of Dakatcha Woodland into a forest reserve.

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ISBN 9966-761-21-7

Recommended citation: Muoria P., Barasa F., Mwinami T., Kanga E., Mwang'ombe J., Ithagu B., Mulwa R., Matiku P., and Ng'weno F. (2013). Kenya's Important Bird Areas: Status and Trends 2011. Nature Kenya, Nairobi.

Published by Nature Kenya - the East Africa Natural History Society
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CONTENTS

ACRONYMS

CBO – Community Based Organiation
CBD - Convention on Biological Diversity
CEPF - Critical Ecosystem Partnership Fund
CDTF - Community Development Trust Fund
CFA – Community Forest Association
GEF - Global Environment Facility
IBA - Important Bird Area
KBA – Key Biodiversity Areas
KFS - Kenya Forest Service
KWS - Kenya Wildlife Service
NABU - Nature and Biodiversity Conservation Union
NEMA - National Environment Management Authority
NGO – Non Governmental Organisation
NMK - National Museums of Kenya
OPM – Office of the Prime Minister
RSPB - Royal Society for the Protection of Birds (UK)
SSG – Site Support Group
UNDP - United Nations Development Programme

ACKNOWLEDGEMENTS

We extend our gratitude to all stakeholders in IBA monitoring including Kenya Wildlife Service (KWS), Kenya Forest Service (KFS), National Museums of Kenya (NMK), National Environment Management Authority (NEMA), various Site support groups, and individual volunteers who have been participating in this process over the years.

Our appreciation also goes to all our donors for their financial support, which facilitated the work reported here. We specifically wish to acknowledge Dansk Ornitologisk Forening (DOF) and European Union for funding the production of this report. We extend our appreciation to all who filled the basic monitoring forms, without which this report would not have been compiled. Special thanks go to the Important Bird Areas National Liaison Committee (IBA-NLC) for the administrative and coordination support to IBA monitoring and production of this report. Our final thanks go to the reviewers for their useful comments.

Disclaimer

The views and opinion in this report are not necessarily those of the donors who have given their financial support to produce this report.

Sokoke Pipit. Illustration by E.Selempo

EXECUTIVE SUMMARY

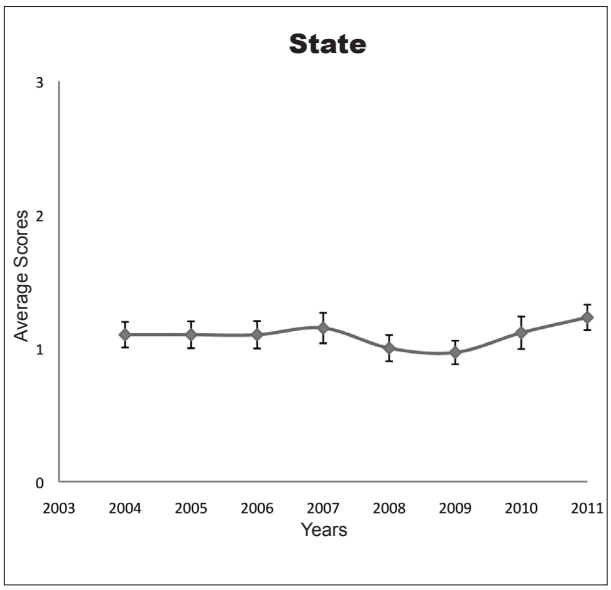
This report highlights the year 2011 results of basic monitoring in Kenya's Important Bird Areas (IBAs). The monitoring programme examines trends in habitat and species status (condition), pressures (threats) and responses in all Kenyan IBAs. This monitoring program was initiated in 2004 as a collaborative effort of Nature Kenya, National Museums of Kenya, Kenya Wildlife Service, Kenya Forest Service, National Environment Management Authority, other governmental and non-governmental organizations and Site Support Groups, working under the auspices of the IBA National Liaison Committee (NLC). The 2011 results presented in this report are based on 47 basic monitoring forms received from 35 IBAs. The data were extrapolated to cover all the 61 IBAs in Kenya. The results are presented following the State, Pressure and Response model. The report also highlights some results of detailed monitoring in Kinangop Grasslands, Taita Hills Forests, and Lake Naivasha.

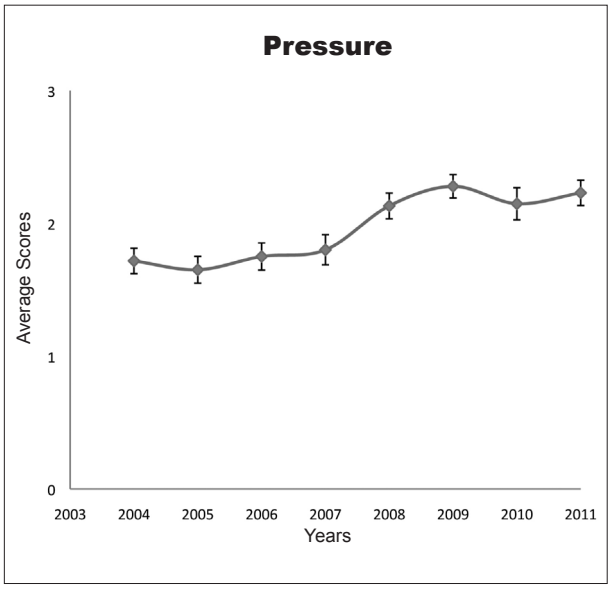
The State of IBAs:

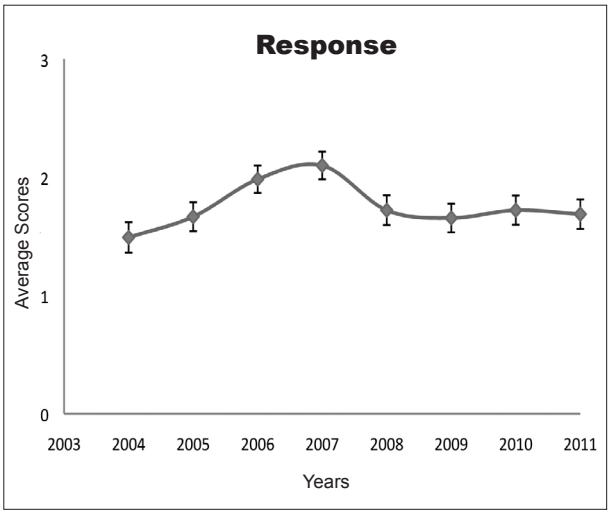
During the year 2011, sixty nine (69%) percent of the sites were either in a poor or very poor state. Some of the IBAs in very poor conditions included Busia grasslands, Dandora Ponds, North Nandi Forest and Mukurweini Valleys. IBA sites that were categorized as being in a good condition were Nairobi National Park, Shimba Hills, Aberdare Mountains, Kakamega Forest, Lake Bogoria National Reserve, Meru National Park and Mount Elgon. The mean status score from 2004 to 2011 ranged from 1.0 to 1.23 implying that the sites have continued being in a poor state over the years. This means that the continued investment in conservation actions at the sites by the Government, local communities, NGOs and CBOs and donors, has not been enough to substantially improve condition of the sites. This could be explained by the negative impacts of rapid human population increase and the resultant demand on natural resources, rapid infrastructural development taking place in Kenya and the negative impacts of climate change on IBAs.

Pressure (Threats) on IBAs:

On average, Kenyan IBAs were experiencing high pressure in 2011. Some of the IBAs with high pressure scores included Arabuko-Sokoke Forest, Lake Ol' Bolossat, Mida Creek, Whale Island and the Malindi-Watamu Coast and Mukurweini Valleys. Encroachment by humans either for settlement or agricultural use remained the biggest challenge in most IBAs. Other threats occurring in many IBAs included overgrazing and illegal grazing, destructive tourism activities, problems associated with invasive species, pollution (particularly of water bodies) charcoal burning and illegal logging, poaching, human-wildlife conflicts, illegal collection of firewood, and poisoning of birds and other wild animals. Rapid unregulated infrastructural developments continue to pose a great challenge in many Kenyan IBAs. Lake Turkana is under severe threat due to damming of River Omo in Ethiopia for Power generation and for irrigation. Other infrastructural related threats include the blocking of migration corridors and creation of barriers to migratory species. Other emerging threats to some IBAs include wind farms whose impacts on biodiversity especially migratory birds can be severe. Overall, there has been a significant rise in the level of threats facing IBAs since 2004 to 2011.







The mean state, pressure (threats) and response scores for Kenya IBAs: 2004 -2011. (The scores are as follows: **State:** 0 = Very poor, 1=Poor, 2 = Moderate and 3 = Good; **Pressures:** 3 = Very high; 2 = High; 1=Moderate; and 0 = Low ; and **Response:** 3 = high, 2 = medium, 1 = low and 0 = negligible.)

Responses

The response during the year 2011 was between low and medium. Sites with negligible responses included Busia Grasslands, Dandora Ponds, Lake Elmenteita, Lake Magadi, Lake Naivasha and Mukurweini Valleys. However, there was high response in some of the sites including Aberdare Mountains, Arabuko-Sokoke Forest, Kakamega Forest, Kisite Island, Mida Creek, Whale Island and the Malindi-Watamu Coast, Ruma National Park, Shimba Hills and Tsavo East National Park. Key responses in 2011 included increased education, awareness and advocacy efforts by various conservation organizations. There was also increased research and monitoring activities carried out at IBAs. Examples of IBAs where such intensive advocacy actions have been taking place include Dakatacha Woodland, Tana Delta, South Nandi Forest and Nairobi National Park, among other sites.

Detailed Monitoring at Some Sites

Detailed monitoring was carried out at several sites with globally endangered species. Preliminary analysis show that the abundance of Sharpe's Longclaw in its main stronghold, the Kinangop Grasslands, has been declining over the years. Similar decline is probably being experienced throughout the Sharpe's Longclaw habitat due to habitat loss and degradation as more of the grassland is cultivated and or subdivided into smaller plots. Long term water fowl population monitoring at the Rift Valley lakes (including Lakes Naivasha, Bogoria, Nakuru, Elmenteita, and Magadi) have been taking place since 1991 to date. Taita Hills Forests is home to two of the most threatened birds in Kenya – the Critically Endangered Taita Thrush (Turdus helleri) and Taita Apalis (Apalis fuscigularis). Continued monitoring of the species indicate that the population of Taita Apalis could be as low as 100-300 and that of the Taita Thrush is probably lower than 1350 – their 1997 population estimate. Other sites at which detailed monitoring are taking place include Kakamega Forest and Dakatcha Woodland.

General Recommendations

- Kenya is undergoing unprecedented growth in her infrastructure particularly roads, rail and telecommunications. There is need to mainstream biodiversity into all sectors of the economy both at the national and county level. Conservationists need to lobby for designs that ensure continued animal movements between habitats by ensuring that underpasses and over passes are integrated into the system.
- KWS needs to work with other stakeholders to ensure that the 2011 Wildlife Bill is passed, the large scale poaching of rhino and elephants is checked, and Human-wildlife conflicts is reduced.
- County governments should put in place structures to address environmental issues including adaptation to climate change.
- Basic weather monitoring needs to be incorporated into detailed monitoring at all IBAs.
- As Kenya strives to satisfy her growing demand on electricity, she is turning to wind power. However, migratory bird flyways are found along the potential wind farm locations. The impacts of wind farms are not yet well understood in Kenya. There is an urgent need to investigate the impacts of wind farms and electric power transmission infrastructure on biodiversity particularly birds. The least cost transmission models need to factor in environmental costs including loss of habitats and associated biodiversity.
- The discovery of oil in Lake Turkana area is a welcome development to the Kenya economy but this might lead to many challenges for biodiversity conservation in the area. There is need to initiate ecological monitoring programmes so as to monitor impacts of oil exploration and planned exploitation
- Bio-energy particularly from jatropha plantations is a major threat to IBAs. There is need to complete the national policy on biofuels and ensure biofuel production does not compete with conservation and food production.

INTRODUCTION

Important Bird Areas (IBAs)

Important Bird Areas (IBAs) are priority sites for conservation, identified using birds. A site qualifies as an IBA when it hosts: (i) globally threatened species – birds threatened with extinction (ii) restricted-range species – birds that have highly restricted distributions (iii) biome restricted species – a series of bird species characteristic of a particular biome (iv) exceptionally large numbers of congregatory (flocking) birds. An IBA may qualify using one or multiple criterion. Some Important Bird Areas are protected areas, while others are on private or community lands (see Appendix 1 for legal status of Kenyan IBAs)

An IBA needs to be large enough to support self-sustaining populations of the bird species for which it was identified, or, in the case of migrants, fulfil their requirements for the duration of their presence. Although birds have been used to define IBAs, conservation of these sites ensures continued survival of other forms of biodiversity.

IBAs cover all the key habitats types for Kenya: 22 forests (20 of them protected areas); 19 wetlands (only 5 protected); 12 semi-arid and arid areas (7 are protected); 6 moist grasslands (3 are protected); and 2 other unprotected sites. Of the 61 sites, 47 IBAs shelter globally threatened bird species (see Appendix 2 for a list of globally threatened bird species in Kenya), 29 are home to range-restricted birds, 32 contain biome-restricted bird species, and 13 IBAs hold large congregations of birds.

The Kenyan IBA programme began in 1995, and has been coordinated by Nature Kenya. The process of identifying IBAs, monitoring them, advocating for their conservation and working with local communities in capacity building, sustainable livelihoods, sound natural resource management and partnership building, has been supported by many partners and donors. The IBA programme partners are represented at the National Liaison Committee (NLC), which brings together 27 governmental and non-governmental institutions and 18 Site Support Groups in Kenya. The NLC provides an important link between key actors in conservation and natural resource management in Kenya.

Monitoring of sites is an important aspect of the IBA programme and has been ongoing since 2004. Monitoring findings have been published annually as the IBA Status and Trends reports. Monitoring is modelled to track the "Pressure" or "Threats" to an IBA, the "Status" or "Condition" of sites, and "Responses" or "Interventions" to address threats within an IBA, by measuring a set of parameters as indicators. IBA monitoring therefore embraces State-Pressure-Response models adopted by the Convention on Biological Diversity (CBD) to which Kenya is a party. This makes it possible for results from IBA monitoring to contribute to CBD national reporting.

METHOLOGY

Basic Monitoring

Each year customised forms for data collection are distributed to Kenya Wildlife Service (KWS), Kenya Forest Service (KFS) and National Museums of Kenya (NMK) field officers and to community-based Site Support Groups (SSGs), collaborating NGOs, field researchers and scientists, birdwatchers and regular visitors to IBAs to assess the status and threats facing IBAs. The forms are designed to facilitate the stakeholders to report on the state of respective sites (species and habitat condition), pressures (threats) and conservation actions (responses) (See Birdlife International, 2006). The status of each site assessed is assigned a status score based on the population of the birds for which the site is recognized as an IBA or the habitats they use. The scores are: 3 = good (favourable); 2 = moderate (Near favourable); 1 = poor (Unfavourable), 0 = very poor (very unfavourable). Timing, scope and severity of various pressures or threats at a site are combined to give an impact score as follows: 3 = Very high; 2 = High; 1=Moderate; and 0 = Low. Response is assessed by scoring all conservation efforts (interventions) at a site including protection status, management planning and conservation actions. Overall response score range from 0-3 as follows: 3 = high, 2 = medium, 1 = low and 0 = negligible. The forms are submitted to National Museums of Kenya (NMK) and Nature Kenya for data capture and analysis. Data from these forms is archived in a Database maintained by the Ornithology Section of the National Museums of Kenya and in the World Bird Database (WBDB) maintained by Nature Kenya and Birdlife International. We received 47 forms covering 35 out of the 61 IBA sites. Where forms were not submitted, we extrapolated the data using confirmed previous scores when a site had been assessed.

Detailed Monitoring

During the year 2011, detailed monitoring took place in 10 of Kenyas' 61 IBAs. Different monitoring techniques were used in detailed monitoring depending on the site's habitat and the targeted species. For example, in Kinangop Grasslands where the target species was Sharpe's Longclaw (Macronyx sharpei), rope-dragging method was used to flush these secretive birds. The total number of Sharpes Longclaw and other bird species flushed out were recorded on a standardized data sheet. In forest ecosystems such as Taita Hills Forests, Kakamega Forest, Arabuko-Sokoke Forest and Dakatcha Woodland, point and line transect methods were used to determine abundance of bird species. The most consistent monitoring has been that of waterfowls in Lakes Naivasha, Elmenteita, Nakuru, Bogoria and Magadi where total counts are conducted twice every year (in January and July).

BASIC MONITORING RESULTS

State of Kenyan IBAs

The State in 2011

During the year 2011, 69 % of the sites were either in a poor or very poor state whereas the rest were either in a moderate or good state. Examples of IBAs that were categorized as being in a good condition include Nairobi National Park, Shimba Hills, Aberdare Mountains, Kakamega Forest, Lake Bogoria National Reserve, Meru National Park and Mount Elgon (Appendix 1). On the other hand Busia Grasslands, Dandora Ponds, North Nandi Forest and Mukurweini Valleys were in very poor condition. Overall, the mean status score for 2011 was 1.23 (± 0.19 SE) which implies that most of the sites were in a poor state.

Trends in IBA Status (2004 to 2011)

Examination of the 35 IBAs in which basic monitoring was conducted reveal that most IBAs (51%) experienced no change in condition rating from 2010 to 2011 (Figure 1). Two IBAs (South Nandi Forest and Tana River Delta) experienced slight decline while Dandora Ponds and Tsavo East National Park experienced moderate decline. Six IBAs including Kakamega Forest, Lake Bogoria National Reserve, Lake Naivasha, Mount Elgon (Kenya), Nairobi National Park, and Shimba Hills underwent moderate improvement in 2011. Aberdare Mountains, Kinangop Grasslands, Kisite Island, Lake Ol' Bolossat, Lake Turkana, Meru National Park and Yala Swamp experienced slight improvement in condition.

The mean status score from 2004 to 2011 ranged from 1.0 to 1.23 (Figure 2) implying that on average the sites have continued being within the range of a poor state given that a rank of 3.0 is the highest measure of good state. However, there has been a slight but statistically insignificant improvement in the state of the IBAs from 2009 to 2011. This means that the continued investment in conservation actions at the sites by the government, local communities, NGOs and CBOs and donors, has not been enough to improve the state of IBAs in Kenya. This is probably due to:

1. Rapid increase in human population and the resultant increased demand on resources including wood fuel, agricultural land for food production and settlement.

2. Rapid infrastructural developments, agricultural intensification, rapid development of energy sources including wind farms which led to the emergence of new threats to IBAs.

3. Unsustainable land use practices including biofuel production in Tana River Delta, excessive pollution in Lake Naivasha due to fertilizer use in the catchment, degradation of unprotected IBAs in Mukurweini and Machakos Valleys and food production in Yala Swamp.

4. Climate change and the associated negative impacts including unpredictable climatic conditions manifesting in frequent prolonged droughts and also flooding incidents.

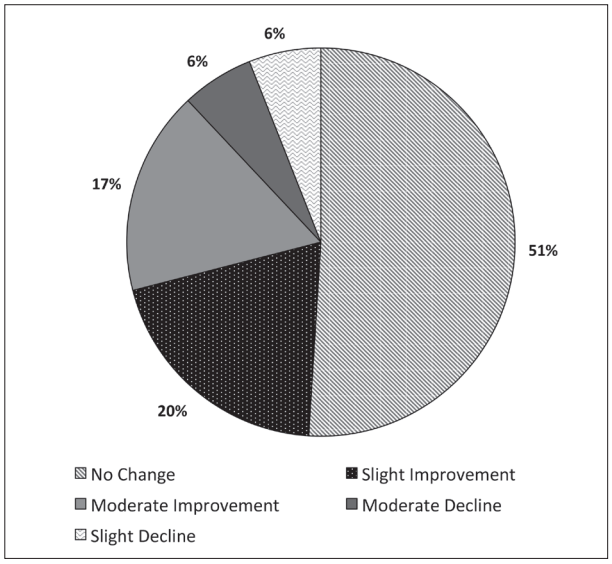


Figure 1: Change in Status of IBAS – 2010 to 2011.

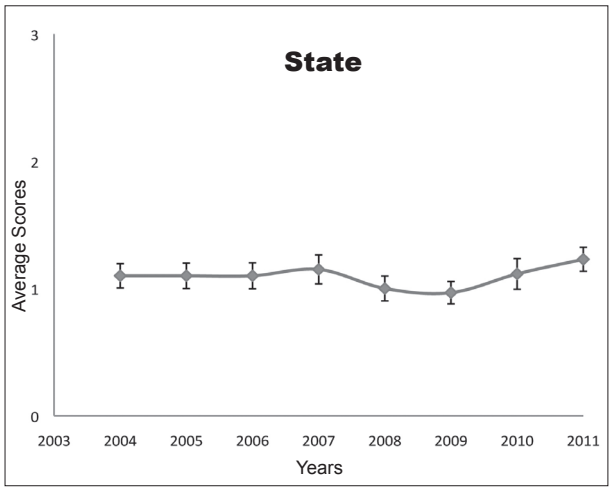


Figure 2: The mean status score in Kenya IBAs:2004 -2011. (The scores are as follows; 0 = Very poor (unfavourable), 1=Poor (Near unfavourable), 2 = Moderate (near favourable) and 3 = Good (favourable).

Pressure (Threats) on IBAs

Pressure in 2011

In 2011, the mean pressure score on the assessed IBAs was -1.23 ± 0.095 (n=61). Very high pressure or threats was recorded at 23 IBAs (38%). There was high pressure at 31 IBAs (51%) and moderate pressure at 5 IBAs (8%).

IBAs with very high pressure included Arabuko-Sokoke Forest, Lake Ol' Bolossat, Mida Creek, Whale Island and the Malindi-Watamu Coast and Mukurweini Valleys among others (Appendix 1). Aberdare Mountains and Ol Donyo Sabache were scored as experiencing low pressure.

During the year 2011, encroachment by humans either for settlement or for agricultural use remained the biggest challenge in most IBAs (Table 1). Examples of IBAs in which expansion of agricultural activities is a serious threat included Lake Naivasha where riparian vegetation is affected, Cherangani Hills, Busia Grasslands, Kinangop Grasslands, Mukurweini Valleys and Lake Ol' Bolossat. Agricultural expansion is also associated with soil erosion in water catchment areas and siltation in downstream dams and water reservoirs and entry into Indian Ocean for example Sabaki River Mouth. In addition, agricultural expansion and intensification remain the most serious threat in the Tana River Delta, Tana River Forests and many other IBAs. Other threats recorded included overgrazing and illegal grazing, destructive tourism activities and problems associated with invasive species. The spread of water hyacinth (Eichhornia crassipes) in Lakes Naivasha and Victoria has been a major concern. Charcoal production was reported in 43% of the IBAs and is one of the most serious threats to many forest/ wooded IBAs including Dakatcha Woodland and other dry land and forested IBAs. About 70% of Kenya's household domestic energy comes from fuel wood and/ or charcoal (http://na.unep.net/atlas/kenya/). Illegal logging and vegetation destruction was reported in 37% of the IBAs including the Aberdare Forests, Mount Kenya, Arabuko-Sokoke Forest, Shimba Hills, Tana River Delta, Cherangani Hills and South Nandi Forest.

Pollution mainly affected lakes Naivasha, Nakuru, Elmenteita, Bogoria and other water bodies including Yala Swamp and Papyrus IBAs around Lake Victoria (Dunga, Kusa, Koguta and Sio Port). Nairobi National Park was also reported to be affected by pollution but this is probably due to its close proximity to Nairobi City. Poaching of wildlife and illegal collection of firewood were other problems reported. The use of a toxic pesticide carbofuran, sold under the name "Furadan", to poison predators due to livestock depredation has become a serious challenge to the conservation of birds of prey and

Activity	**Percentage of IBA affected**
Agriculture encroachment/Illegal cultivation	54
Human settlements/Urbanization	46
Overgrazing/Illegal Grazing	43
Charcoal production	43
Invasive /Exotic Species	40
Destructive Tourism Activities	37
Illegal logging/Vegetation Destruction	37
Fires	34
Firewood Collection	34
Illegal hunting/Poaching/Trapping	34
Pollution	31
Human-Wildlife Conflict	29
Infrastructure development	29
Medicinal Plant collection	23
Habitat Degradation by Wildlife	20
Water Abstraction	20
Siltation/Soil Erosion	20
Illegal Fishing Methods/Overfishing	14
Eutrophication	14
Natural Events	14
Wetland Drainage/Filling	11
Destructive Mining Activities	11
Blocking of Migration Corridors	9
Road Accidents	6
Diseases/Toxins	3

Table 1: Threats facing IBA in 2011

many mammalian predators including the Lion. At Yala Swamp, Furadan was being used to kill birds which were sold for human consumption unaware or ignoring the negative effects on health (http://stopwildlifepoisoning.wildlifedirect.org/tag/bird-poisoning/).

Fire was reported to be a threat in 34% of the IBAs including Aberdare Mountains, Mount Kenya, Arabuko-Sokoke Forest, Shimba Hills, Meru National Park and Samburu/Buffalo Springs National Reserves.

Human wildlife conflicts continued being a challenge due to livestock depredation and crop raiding in areas adjacent to many IBAs. During the year 2011, the problem was reported in 29% of the IBAs. Human wildlife conflicts are the leading causes of major declines in wild carnivores (Ogada et al., 2003) in Africa. Illegal grazing in protected areas was a major challenge from 2008 to 2010 in IBAs situated in arid and semi arid areas including Shaba National Reserve, Samburu/Buffalo Springs National Reserves, and the Tsavos (East and West). This was not a serious problem in 2011 probably due to the good rains experienced in most of the IBAs in 2011.

Rapid unregulated infrastructural developments continue to pose a great challenge in many IBAs. During the year 2011, this was cited as a threat to 29% of the IBAs. Lake Turkana IBA is under severe threat due to damming of River Omo in Ethiopia for electric power generation and for irrigation. Other infrastructural related threats include the blocking of migration corridors and creation of barriers for migratory species with Nairobi National Park being the most severely affected. Other emerging threats to some IBAs include wind farms whose impacts on biodiversity in Kenya is not yet known.

Over abstraction of water for irrigation purposes by upstream communities has been a problem in some areas. For example, agricultural communities in the upper Ewaso Nyiro basin have been using too much water for irrigation leaving too little for people, livestock and wildlife downstream. This has lead to lack of water for wildlife in Samburu/Buffalo Springs National Reserves.

Trends in Pressures on IBAs – 2004 - 2011

Overall, there has been a significant rise in the level of threats facing IBAs from 2004 to 2011 (Figure 3). The key driver of these pressures is the rapidly expanding human population and the resulting increasing demand for natural resources and for increased agricultural production. Other drivers include climate change and rapid infrastructural development. These Issues are associated with most of the threats mentioned in Table 1.

Responses at Kenyan IBAs in 2011

The mean response score for the year 2011 was 1.69 ± 0.13. This means that the response was between low (score of 1) and medium (score of 2). However, there was high response in 15 sites including Aberdare Mountains,

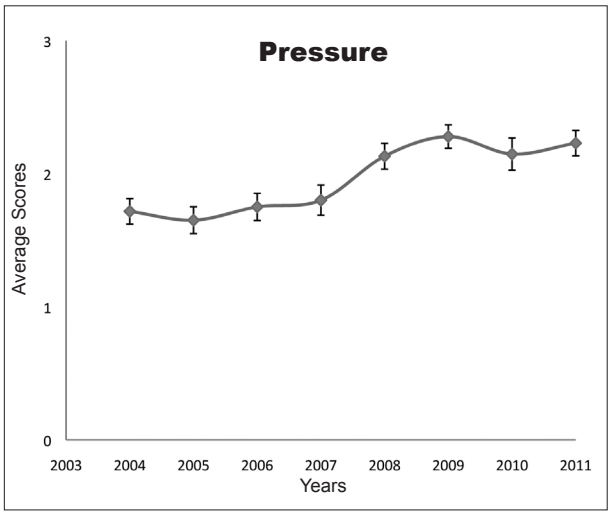


Figure 3: The mean pressure (threats) on Kenyan IBAs: 2004 -2011. (The scores are as follows ; 3 = Very high; 2 = High; 1=Moderate; and 0 = Low)

Arabuko-Sokoke Forest, Kakamega Forest, Kisite Island, Mida Creek, Whale Island and the Malindi-Watamu Coast, Ruma National Park, Shimba Hills and Tsavo East National Park. Nineteen, 20 and 7 of the sites were reported to have medium, low and negligible responses respectively, during the year. Sites with negligible responses included Busia Grasslands, Dandora Ponds, Lake Elmenteita, Lake Magadi, Lake Naivasha and Mukurweini Valleys.

Trends in Response

The response statistically differed between years. It was highest in 2006/2007 but has remained low since then. Many conservation oriented projects and programmes have been initiated in IBAs and other Key Biodiversity Areas (KBAs) over the years. For example, Nature Kenya has been implementing many donor funded projects in different IBAs in Kenya including Tana River Delta, South Nandi Forest, North Nandi Forest, Cherengani, Kinangop Grassland, Dakatcha Woodland, Mount Kenya, Kakamega Forest and Taita Hills Forests. Similarly, other national and International conservation NGOs and state conservation agencies have been implementing different conservation programmes in various IBAs in Kenya. Many responses have also been due to increased demand for more agricultural land and competing land uses, and challenges such as infrastructural developments affecting IBAs negatively. For example, the construction of a road to decongest Nairobi City has led to many advocacy actions to stop the road from encroaching on Nairobi National Park. Other advocacy actions were carried out to provide scientific information to decision makers about the proposal to convert 50,000 hectares of Dakatcha Woodland into Jatropha plantations. Conservation action at Tana Delta continued during the year 2011 and some 54,000 ha were stopped from outright destruction by Bedford Biofuels, when the National Environment Management Authority only

allowed 10,000 ha for planting jatropha which has since almost failed. The process of initiating the preparation of a Strategic Environmental Assessment and Land Use Planning process headed by The Office of the Prime Minister (OPM) was a major response started in late 2011 to promote sustainable development in the Tana Delta.

Many local community based organisations (CBOs) including Site Support Groups (SSGs) and Community Forest Associations (CFAs) have been in the forefront in educating the public on conservation issues, including tree planting and also in advocacy work. The Community Development Trust Fund (CDTF), a programme of the European Union and Kenya Government supported many CBOs including those in Taita Hills Forests, Arabuko-Sokoke Forest and Kikuyu Escarpment Forest to take action for biodiversity conservation in 2011.

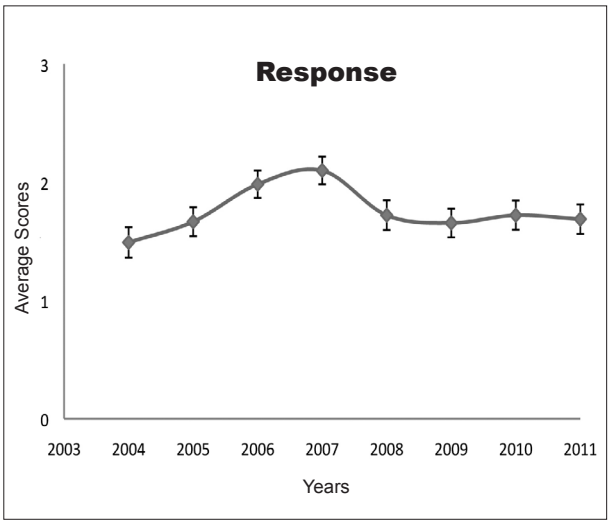


Figure 4: The mean response score in Kenya IBAs:2004 -2011. (The scores are as follows; 3 = high, 2 = medium, 1 = low and 0 = negligible).

The requirement within the Forest Act 2005 for Forest Management Plans for each forest block in the country has led to formulation of fourteen (14) management plans in conjunction with major Government agencies. Six forest management plans (South Nandi's Kobijor and Iruru Forest Stations, Kimondi Forest Station in North Nandi, Kikuyu Escarpment, Cherangani Forest Station, and Mt. Kenya (Gathiuru Forest Block) were launched. Lake Ol' Bolossat Management plan was finalized while Aberdare National Park's management plan was in advanced stages by the end of 2011. The Tana River Delta Land Use Plan and Management Plan for Community Conservation Areas of Dakatcha Woodland were in the early stages of preparation. The Office of the Prime Minister played a leading role in coordinating planning and sustainable management of the Tana River Delta and other deltas in Kenya with subsequent formation of an Inter Ministerial Technical Committee on deltas.

Many research and monitoring activities were also carried out. These included:

- January and July Waterfowl counts at 11 IBAs was carried out by National Museums of Kenya, in collaboration with Kenya Wildlife Service, Nature Kenya, and other stakeholders.
- Turner's Eremomela surveys in South Nandi, population survey of William's Lark in Isiolo, and Taita Apalis and Taita Thrush surveys in Taita were also carried out
- Clarke's Weaver field surveys in Dakatcha by Nature Kenya and Dakatcha Woodland Conservation Group;
- Studies on the Sokoke Scops Owl by the Ornithology Section of the National Museums of Kenya
- Stakeholders have made major strides in campaigns for the protection of Tana Delta, Dakatcha Woodland, Sabaki, Dunga, Yala and other sites. One key highlight for Dakatcha concerns the Biofuel project in which was to result in the clearance of 50,000 hectares of the woodland for planting jatropha. This project was not approved by NEMA, thus saving the IBA and its biodiversity. Community Conserved Areas are being mapped by the Dakatcha CFA and SSGs, who are also assisting in tracking illegal charcoal making in the forest and in biodiversity monitoring.

Income generating activities including bee keeping, on-farm forestry, ecotourism, wool spinning, making of fireless cookers and energy saving stoves, butterfly and mushroom farming implemented by SSGs and the wider community have been key targets across many IBA sites. Tourism is a key income generating activity in many IBAs particularly National Parks. In the year 2011, KWS managed parks and reserves (nearly all of which are IBAs) received over 2 million visitors (http://ebookbrowse.com/kws-annual-report-2011-pdf-d409891590). Some of the Parks which received high number of visitors include Tsavo East (267,952 visitors), Lake Nakuru National Park (245,030 visitors) and Amboseli National Park (176,246 visitors). Nature Kenya and Kenya Tourist Board continued marketing Kenya as a birding tourist destination at the United Kingdom Bird Fair.

RESULTS OF DETAILED MONITORING AT SOME SITES

Kinangop Grasslands

Available data show that there is very high avian diversity in Kinangop Grasslands. For example, a total of 165 bird species were recorded in Murungaru area of Kinangop IBA from 2004 to 2011. The most abundant species included: Long-tailed Widowbird, Grassland Pipit, Streaky Seedeater, Red-billed Quelea, Common Fiscal, and Kenya Rufous Sparrow. Thirty one of the bird species encountered at Murungaru during the period were migrants with Common Quail being the most abundant in this category. Globally threatened birds encountered at Murungaru included the Endangered Sharpe's Longclaw (Plate 1), the Vulnerable Grey Crowned Crane, and the Near Threatened Pallid Harrier and Martial Eagle. Preliminary analysis show that the abundance of Sharpe's Longclaw at the site has been declining over the years (Figure 5). Similar decline is probably being experienced throughout the Sharpe's Longclaw habitat due to habitat loss and degradation as more of the grassland is cultivated and or subdivided into smaller plots.

Sharpe's Longclaw. Photo by Charlie Moores

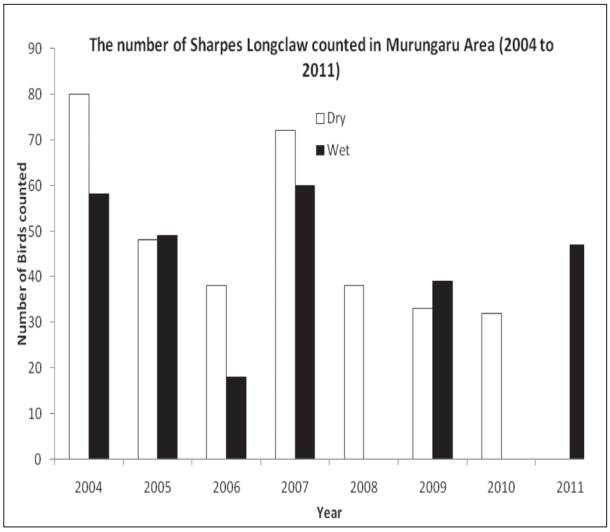


Figure 5: Abundance of Sharpe's Longclaw in Murungaru area of Kinangop IBA

Water Fowl Counts

Water fowl censuses at Rift Valley lakes including Lakes Naivasha, Bogoria, Nakuru, Elmenteita, and Magadi have been taking place since 1991 as part of the African Water Bird Census. Among the species counted in lake Naivasha is the Red-knobbed Coot (Fulica cristata), a member of Rallidae family. Members of this family are good indicators of ecological health. Long term monitoring data at Lake Naivasha show that Red-knobbed Coot population experienced drastic reduction in early 1990s and has never recovered (Figure 6) probably due to the decline in the condition of the lake. The major threats to this bird includes poisoning from pest control, habitat loss and degradation, industrial and domestic pollution from the flower industry, the rapidly expanding urban developments and expansion of agricultural activities in the lake Naivasha basin, overgrazing and burning of riparian vegetation. There is need to address these threats in order to save the lake and its associated ecosystem services. Coordination of research and conservation activities is necessary to avoid duplication of effort and therefore waste of resources.

Taita Hills Forests

Taita Hills is home to the two most threatened birds in Kenya – the Critically Endangered Taita Thrush (Turdus helleri) and Taita Apalis (Apalis fuscigularis). Taita Apalis population was estimated at 310-654 individuals in 2001 but has undergone a severe decline since then to an estimated 100-150 individual by 2009 (Birdlife International, 2013). This decline could be due to worsening climatic conditions as the effect of global warming takes its toll, and to predation by mammals. The population of Taita Thrush was estimated at 1,350 birds in 1997 but is currently suspected to be in decline due to habitat loss resulting in small patch size, severe fragmentation and reduced ecological connectivity; continuing human disturbance and unsustainable collection of firewood and timber, poaching and grazing of domestic herbivores in forest (BirdLife International 2013).

Ongoing monitoring of these two species and their habitat will continue informing conservation programmes in Taita Hills Forests. One notable development in 2011 was the "discovery" of a 7.5 ha indigenous private forest adjacent to Vuria forest (Borghesio & Wagura, 2012). This forest hosts at least 5 pairs of Taita Apalis in addition to other endemic and threatened animals and plants. It was observed that the forest was experiencing pressure for conversion to agricultural land and also for timber production. There is need to initiate actions to protect this private forest.

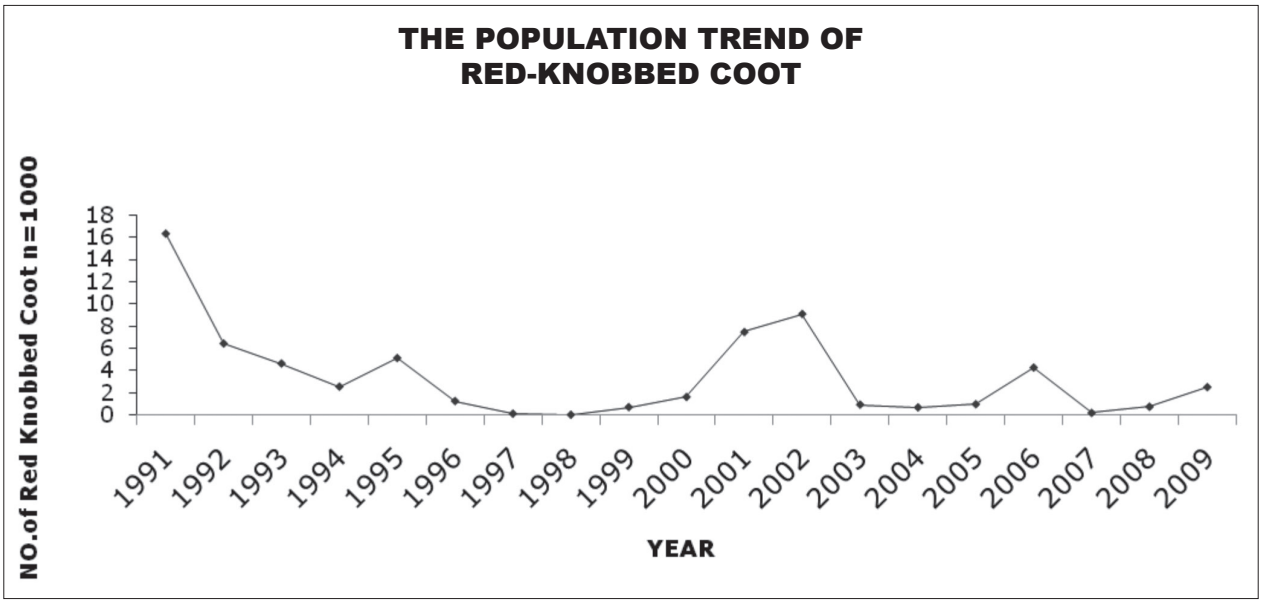


Figure 6: The population trend of Red-knobbed Coot (*Fulica cristata*) at lake Naivasha

Taita Thrush Photo by Tom Callens

Taita Apalis Photo by Paul Muoria

OVERALL RECOMMENDATIONS

Overview of Emerging Challenges in the Conservation of Kenyan IBAs

As we look forward, there is need to address emerging threats that face IBAs in modern Kenya. These include:

1. Climate change
2. Infrastructural developments
3. Impacts of wind farms and electricity transmission on biodiversity.
4. Exploration of oil and natural gas in many parts of Kenya
5. Devolved governance system that includes forty seven county governments

Climate Change

There is irrefutable evidence that climate change is taking place in Kenya and indeed all over the world. Climate change impacts include more frequent or prolonged droughts, disappearance of glaciers on Mount Kenya, declining water supplies or flooding, increased frost incidences, unpredictable weather patterns, among others. The impact of climate change on biodiversity and on the livelihoods of communities dependent on various IBAs needs to be assessed.

There is need to confirm the availability of basic weather data in various IBAs so that the impacts of climate change on various threatened species can be assessed. We therefore recommend that basic weather monitoring be incorporated into detailed monitoring at all sites where such data are not available. In addition, there is need for county governments to put into place structures to address environmental issues including adaptation to climate change. At the site level, the capacity of local communalities to adapt to climate change needs to be enhanced.

A submerged village in Tana River. Photo: Nature Kenya Archives

Elephants crossing the Isiolo - Moyale highway.
Photo by Paul Gacheru

Infrastructural Development

In an attempt to achieve Vision 2013, the government of Kenya has put in place mechanisms to upgrade her infrastructure particularly rail, road and telecommunications networks. Already, some of these developments have taken place including the new Thika Super Highway and various by-passes around Nairobi City and Isiolo-Moyale Highway. There is also a plan to link Kenya to Tanzania through Tsavo National Park. These developments are impacting negatively on biodiversity. For example, many wild animals including the endangered Grevy's zebras, cheetahs, lions, striped hyena have been killed by speeding vehicles along the Isiolo-Moyale highway (http://ewasolions.org/lion-cheetah-grevys-zebras-hyenas-killed-on-new-highway/) implying the need to rethink the design of these highways particularly when they pass through important wildlife corridors. Another example is Nairobi National Park where there has been pressure for the Southern by-pass to pass through the Park (http://www.eawildlife.org/the-news/eawlsnews/272-thenairobisouthernbypass). Initial EIA report had indicated that the road would not encroach onto Nairobi National Park, but this is not the case.

The Lamu Port-Southern Sudan-Ethiopia Transport (LAPSSET) corridor which will link Southern Sudan, Ethiopia and Kenya will perhaps be the biggest challenge for conservationists. The transport corridor will pass through some key biodiversity-rich areas and without a Strategic Environment Assessment, it is not clear how biodiversity conservation has been integrated in the planning. There is need for government and conservationists to ensure designs that guarantee continued animal movements between habitats by ensuring that underpasses and over passes are integrated into the system. It is also important that urban centres that will inevitably mushroom along the corridors are controlled.

Impacts of Wind Farms and Electricity Transmission on Biodiversity

As the rate of industrialisation and urbanisation increases in Kenya, more electric power is needed. Use of wind energy to generate electricity is seen as a way of curbing carbon emissions therefore mitigating against climate change. However, the best locations for wind farms for electricity generation are found along the flyways for migratory birds. The impact of these wind farms on migratory birds in Kenya has not been studied. There is urgent need to produce a national bird flyway map which will guide the energy sector, private sector and conservationists on the places where wind farms can be situated.

Expanded electric power generation and the on-going rural electrification programme taking place in Kenya have led to an expanded transmission infrastructure. Whereas all these developments are desirable, it is important that their impacts on biodiversity is understood and addressed. As a first step, power lines need to avoid areas that are known to be protected as clearance of vegetation along power lines could lead to serious loss of wildlife habitats. The least cost transmission models need to factor in environmental costs including loss of habitats and associated biodiversity.

Wind turbines at Ngong Hills . Photo by Paul Gacheru

Impacts of Oil Exploration and Exploitation

Intensive oil exploration has been going on in the country. The impacts of this extensive exercise on biodiversity have not been documented. The recent discovery of commercially viable oil deposits in the Turkana region is a welcome development but the Kenya government needs to ensure that exploitation of this important natural resource leads to net biodiversity gains. At this moment, there is need for investments in inventorying the biodiversity in the area and to initiate regular monitoring. There is also need to ensure that the financial resources arising from oil extraction benefits the local people and that some of the resources go towards mitigating any negative impacts on the local community and the biodiversity on which they heavily depend on. Oil exploration and exploitation safeguards need to be developed and mainstreamed into law. It is noteworthy that the net gain safeguard principles need to be prioritised to ensure residual impacts are compensated.

Devolved Governance System

The Kenya Constitution 2010, provides for a two tier government system at national and county levels. The genesis of the devolved government system is inequities in allocation of national development resources. Since counties are quite dissimilar in levels of development, there is a risk that most counties will start to try to catch up with the more developed counties. This might require more conversion of natural capital into economic capital. More lands may be opened up for agriculture, wetlands may be drained for food production, timber may be harvested for construction, roads may be opened up to enhance communication and electricity may be distributed to support development. Without carefully developed and implemented safeguards, counties could present major challenges for sustainable natural resources management. It is critical that all counties are obliged by law to ensure their development is sustainable and development plans lead to net gains for biodiversity conservation.

An inter-ministerial consultative meeting on deltas in progress. Photo by Ernest Mwongela

Specific Recommendations

1. There is need to mainstream biodiversity into all sectors of the economy. This would ensure that biodiversity and ecosystem services are recognized as core drivers of the economy.

2. The National Government together with national state agencies including the National Environment Management Authority (NEMA) should fast track the implementation of the devolved governance structures to ensure that biodiversity is mainstreamed into County Government Integrated Development Plans. NEMA needs to ensure that Environmental Impact Assessments (EIAs) are conducted for all county developments. Also, it is critical that NEMA institute a process to ensure that a Strategic Environment Assessment (SEA) is

conducted on key policies and plans including the Constitution 2010 and Vision 2030 among others. It is vital that NEMA initiate a process to develop county biodiversity and environmental safeguards and plans including County State of Environment (CSoE), County Environment Action Plans (CEAP) and County Biodiversity Strategies and Action Plans (CBSAP).

3. We recommend continued research and monitoring of species and habitat condition in Important Bird Areas (IBAs) and profiling of other potential IBAs and Key Biodiversity Areas (KBAs) particularly in Northern Kenya. It is important that National Museums of Kenya (NMK) continues to work closely with other stakeholders including Kenya Wildlife Service, Nature Kenya, Site Support Groups and volunteers to conduct the annual Waterfowl Count. If resources are available, this programme needs to be expanded to include a majority of Kenya water bodies in the country. Of particular interest is Lake Turkana which might be negatively affected by dam construction on River Omo on the Ethiopian side and by oil exploration and extraction on the Kenya side.

4. Ivory and rhino horn consumers in Asia need to be engaged, informed, and educated if the war against poaching of elephants and rhinos is to be won.

5. Climate change monitoring needs to be integrated into the basic and detailed monitoring protocols. There is need to initiate processes of gathering basic weather data at all sites where detailed monitoring is already taking place.

6. Human-wildlife conflicts are the leading cause of loss of many carnivores (both mammals and birds) all over Kenya. This is because some farmers result to poisoning of predators due to livestock depredation. This method of controlling predators has had a very negative impact particularly on vultures. In addition many mammalian predators are killed using other methods including shooting, trapping and spearing. Crop raiding is the other major form of human-wildlife conflicts in many IBAs. This results in loss of livelihoods, food, loss of time in guarding and disruption of social activities. There is need to find ways of resolving these issues because persistence in human-wildlife conflicts leads to reduced support for conservation among local communities.

7. Kenya Wildlife Service (KWS) needs to work with other stakeholders to ensure that the 2011 Wildlife Bill which is already in Parliament is debated and passed. There is also a need to act decisively and ensure that the ongoing large-scale Elephant and Rhino poaching is checked.

8. Kenya Forest Service (KFS) needs to spearhead Forest Management Plans development and implementation. In addition, KFS needs to work with other stakeholders to ensure that all new policies in the forestry sector including charcoal policy are understood by local communities. The KFS needs to move with speed and ensure that counties are well guided on how to implement policies on forestry as provided for under the fourth schedule of the Constitution 2010.

9. There is need for continued investment in building the capacity of stakeholders, particularly local communities on environmental legislation, devolved governance and tracking social accountability at county and national government levels. This will widen the participation in the review of Environmental Impacts of various developments affecting biodiversity conservation in Kenya.

10. We recommend that actions to protect Msidunyi - an indigenous private forest adjacent to Vuria forest fragment within Taita Hills Forests IBA - be initiated. This forest hosts at least 5 pair of Taita Apalis

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Washington Ndubi

Appendix 1: Legal Status of Kenyan IBAs

IBA NAME	PROTECTED AREA STATUS
Aberdare Mountains	Y
Amboseli National Park	Y
Arabuko-Sokoke Forest	Y
Busia Grasslands	N
Cherangani Hills	Y
Chyulu Hills Forests	Y
Dakatcha Woodland	N
Dandora Ponds	N
Diani Forest	N
Dida Galgalu Desert	N
Dunga Swamp	N
Dzombo Hill Forest	Y
Gede Ruinsnational Monument	Y
Kakamega Forest	Y
Kaya Gandini	Y
Kaya Waa	Y
Kianyaga Valleys	N
Kikuyu Escarpment Forest	Y
Kinangop Grasslands	N
Kisite Island	Y
Kiunga Marine National Reserve	Y
Koguta Swamp	N
Kusa Swamp	N
Lake Baringo	N
Lake Bogoria National Reserve	Y
Lake Elmenteita	N
Lake Magadi	N
Lake Naivasha	N
Lake Nakuru National Park	Y
Lake Ol Bollosat	N
Lake Turkana	N
Lower Tana River Forests	Y
Machakos Valleys	N
Marenji Forest	Y
Masai Mara	Y
Masinga Reservoir	N
Mau Forest Complex	Y
Mau Narok - Molo Grasslands	N
Meru National Park	Y
Mida Creek, Whale Island And The Malindi - Watamu Coast	Y
Mount Elgon (Kenya)	Y
Mount Kenya	Y
Mrima Hill Forest	Y
Mukurweini Valleys	N
Mwea National Reserve	Y
Nairobi National Park	Y
North Nandi Forest	Y
Ol Donyo Sabache	N
Ruma National Park	Y
Sabaki River Mouth	N
Samburu and Buffalo Springs National Reserves	Y
Shaba National Reserve	Y
Shimba Hills	Y
Sio Port Swamp	N
South Nandi Forest	Y
South Nguruman	N
Taita Hills Forests	Y
Tana River Delta	N
Tsavo East National Park	Y
Tsavo West National Park	Y
Yala Swamp Complex	N

Key. **N**= entirely or largely outside Protected Area (National Park, National Reserve or Forest Reserve). **Y**= entirely or largely within a protected area.

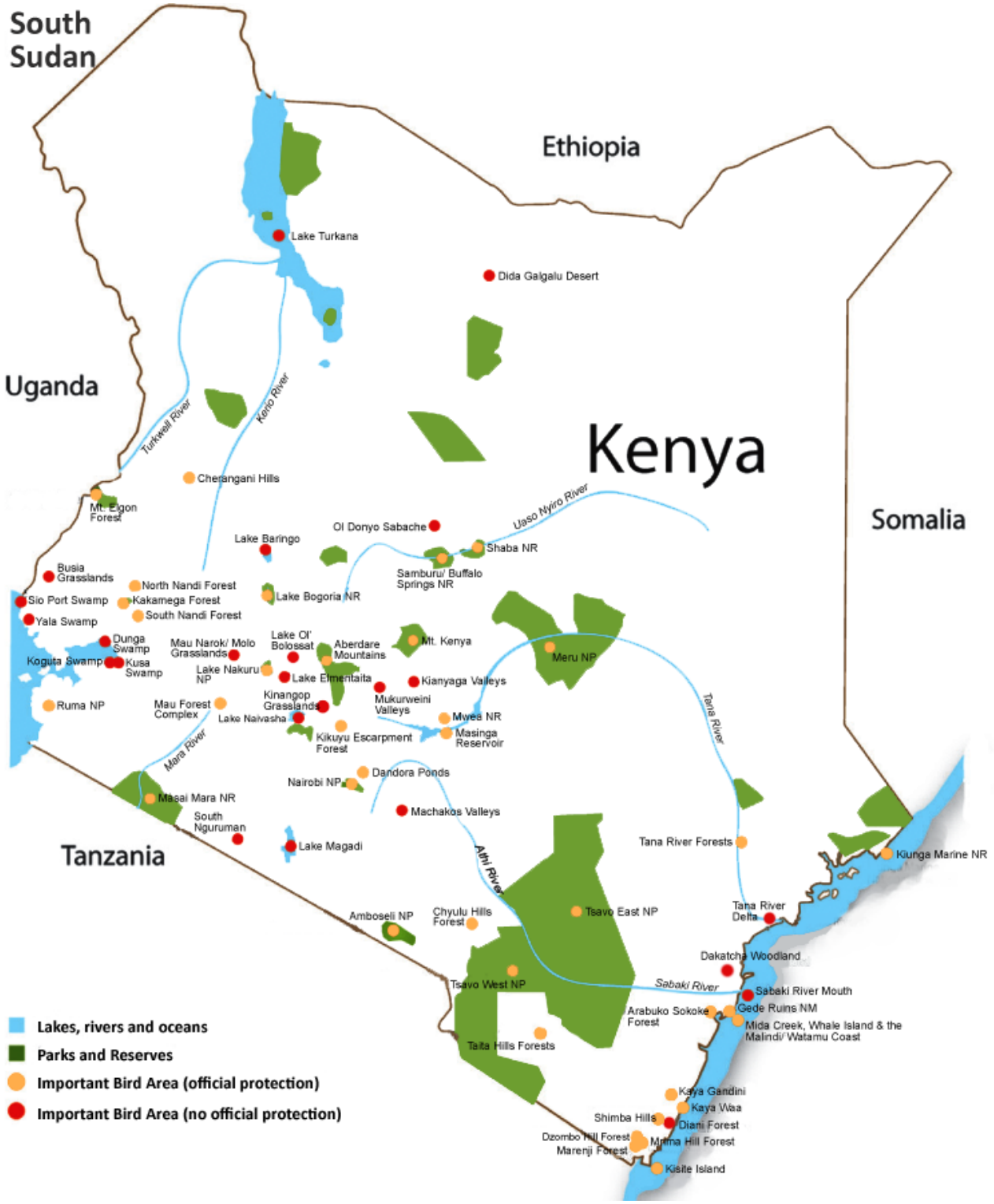
Appendix 2: List of Globally Threatened Bird Species in Kenya

Species	Common Name	IUCN Red List Category
Apalis fuscigularis	Taita Apalis	CR
Turdus helleri	Taita Thrush	CR
Acrocephalus griseldis	Basra Reed-warbler	EN
Anthreptes pallidigaster	Amani Sunbird	EN
Anthus sokokensis	Sokoke Pipit	EN
Ardeola idae	Madagascar Pond-heron	EN
Balearica regulorum	Grey Crowned-crane	EN
Cisticola aberdare	Aberdare Cisticola	EN
Eremomela turneri	Turner's Eremomela	EN
Falco cherrug	Saker Falcon	EN
Gyps africanus	White-backed Vulture	EN
Gyps rueppellii	Rueppell's Vulture	EN
Macronyx sharpei	Sharpe's Longclaw	EN
Necrosyrtes monachus	Hooded Vulture	EN
Neophron percnopterus	Egyptian Vulture	EN
Otus ireneae	Sokoke Scops-owl	EN
Ploceus golandi	Clarke's Weaver	EN
Zoothera guttata	Spotted Ground-thrush	EN
Apalis chariessa	White-winged Apalis	VU
Apalis karamojae	Karamoja Apalis	VU
Aquila clanga	Greater Spotted Eagle	VU
Aquila heliaca	Eastern Imperial Eagle	VU
Balearica pavonina	Black Crowned-crane	VU
Bucorvus leadbeateri	Southern Ground-hornbill	VU
Chloropeta gracilirostris	Papyrus Yellow Warbler	VU
Cinnyricinclus femoralis	Abbott's Starling	VU
Glareola ocularis	Madagascar Pratincole	VU
Hirundo atrocaerulea	Blue Swallow	VU
Muscicapa lendu	Chapin's Flycatcher	VU
Psittacus erithacus	Grey Parrot	VU
Sagittarius serpentarius	Secretarybird	VU
Torgos tracheliotos	Lappet-faced Vulture	VU
Trigonoceps occipitalis	White-headed Vulture	VU
Turdoides hindei	Hinde's Pied-babbler	VU

CR - Critically Endangered EN-Endangered VU-Vulnerable

Appendix 3: The State, Pressure and Response in 35 IBA Sites Assessed in 2011

IBA Site Name	State	Pressure	Response
Aberdare Mountains	Good	Low	High
Amboseli National Park	Poor	High	Medium
Arabuko-Sokoke Forest	Poor	Very high	High
Busia Grasslands	Very Poor	High	Negligible
Cherangani Hills	Poor	High	Medium
Dakatcha Woodland	Poor	Medium	Medium
Dandora Ponds	Very Poor	High	Negligible
Kakamega Forest	Good	Medium	High
Kinangop Grasslands	Poor	Medium	Low
Kisite Island	Moderate	High	High
Kiunga Marine National Reserve	Moderate	High	Medium
Lake Bogoria National Reserve	Good	Medium	Low
Lake Elmenteita	Poor	Medium	Negligible
Lake Magadi	Poor	High	Negligible
Lake Naivasha	Moderate	High	Negligible
Lake Ol' Bolossat	Poor	Very High	Low
Lake Turkana	Poor	High	Low
Masai Mara	Poor	Medium	Medium
Meru National Park	Good	Medium	Medium
Mida Creek, Whale Island and the Malindi - Watamu Coast	Poor	Very High	High
Mount Elgon (Kenya)	Good	Medium	Medium
Mount Kenya	Poor	High	Medium
Mukurweini Valleys	Very Poor	Very High	Negligible
Nairobi National Park	Good	High	Medium
North Nandi Forest	Very Poor	High	Medium
Ruma National Park	Moderate	High	High
Sabaki River Mouth	Poor	High	Low
Samburu and Buffalo Springs National Reserves	Poor	Medium	Low
Shimba Hills	Good	High	High
South Nandi Forest	Poor	Medium	Medium
Taita Hills Forests	Poor	Medium	Low
Tana River Delta	Poor	Medium	Medium
Tana River Forests	Poor	High	Low
Tsavo East National Park	Poor	Medium	High
Yala Swamp Complex	Poor	Medium	Low


South Sudan
Ethiopia
Uganda
Kenya
Somalia
Tanzania
Lake Turkana
Dida Galgalu Desert
Turkwell River
Kerio River
Cherangani Hills
Mt. Elgon Forest
Lake Baringo
Ol Donyo Sabache
Uaso Nyiro River
Shaba NR
Samburu/ Buffalo Springs NR
Busia Grasslands
Sio Port Swamp
Yala Swamp
North Nandi Forest
Kakamega Forest
South Nandi Forest
Lake Bogoria NR
Dunga Swamp
Koguta Swamp
Kusa Swamp
Mau Narok/ Molo Grasslands
Lake Nakuru NP
Lake Ol' Bolossat
Aberdare Mountains
Mt. Kenya
Meru NP
Lake Elmentaita
Kianyaga Valleys
Mukurweini Valleys
Ruma NP
Mau Forest Complex
Kinangop Grasslands
Lake Naivasha
Kikuyu Escarpment Forest
Mwea NR
Masinga Reservoir
Tana River
Mara River
Nairobi NP
Dandora Ponds
Masai Mara NR
South Nguruman
Machakos Valleys
Lake Magadi
Athi River
Tana River Forests
Kiunga Marine NR
Amboseli NP
Chyulu Hills Forest
Tsavo East NP
Tana River Delta
Dakatcha Woodland
Tsavo West NP
Sabaki River
Sabaki River Mouth
Arabuko Sokoke Forest
Gede Ruins NM
Mida Creek, Whale Island & the Malindi/ Watamu Coast
Taita Hills Forests
Kaya Gandini
Kaya Waa
Shimba Hills
Diani Forest
Dzombo Hill Forest
Mrima Hill Forest
Marenji Forest
Kisite Island
Lakes, rivers and oceans
Parks and Reserves
Important Bird Area (official protection)
Important Bird Area (no official protection)

Dr. Ronald Mulwa (extreme right) of Ornithology section, National Museums of Kenya, training Taita Hills Site Support Group members in biodiversity monitoring. Photo by Paul Muoria.

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