

BURUNDI'S IMPORTANT BIRD AREAS



Status and Trends 2009
July 2010





Jeunes observateurs d'oiseaux à la Réserve Naturelle de la Rusizi
Photo ABO (2009)

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The species was previously described as common to abundant; however, recently there have been very few records, suggesting a moderately rapid decline.

Fringolinus streptophorus has a disjunct distribution, with populations in **Burundi, Cameroon, Kenya, Rwanda, Tanzania** and **Uganda**.

Recent data on this species are lacking. However, it has apparently declined in both range and abundance and is now suspected to have a moderately small population. The reasons for this decline remain unknown, and it is presumably continuing. For these reasons, the species has been classified as Near Threatened. If it is found that the population is smaller and the decline more rapid than suspected, the species may qualify for a higher threat category (BirdLife species factsheet).

In Burundi, the ring-necked francolin occurs in Ruvubu National Park in eastern Burundi.



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Collaborating Institutions :



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Disclaimer

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Acronyms

ABO	: Association Burundaise pour la protection des Oiseaux
ACVE	: Action Ceinture Verte pour l'Environnement
A1, A2, A3, A4i	: BirdLife International's criteria for selecting IBAs
BFNR	: Bururi Forest Nature Reserve
BNA	: Burundi Nature Action
CSO	: Civil Society Organisations
DRC	: Democratic Republic of Congo
ENVIROPROTEC	: Association pour la Protection de l'Environnement
IBA/ IBAs	: Important Bird Area/ Important Bird Areas
INECN	: Institut National pour l'Environnement et la Conservation de la Nature
IUCN	: International Union for Conservation of Nature
KNP	: Kibira National Park
MEEATU	: Ministère de l'Eau, de l'Environnement, de l'Aménagement du Territoire et de l'Urbanisme
RLMNR	: Rwihinda Lake Managed Nature Reserve
RNP	: Ruvubu National Park
RNR	: Rusizi Nature Reserve
RSPB	: Royal Society for the Protection of Birds
SSG(s)	: Site Support Group(s)
WCA	: World Club Africa

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Executive Summary

Central to biodiversity monitoring assessments of bird populations or their habitats is done as a valuable contribution to know the health of our wild areas and their components. Thus, ABO under collaboration with INECN officials collected data on the five Protected Areas/Important Bird Areas and compiled them for producing this second annual report on Status and Trends of IBAs. The findings of monitoring activities are presented using the State-Pressure-Response model on which monitoring IBAs is fundamentally referred to.

State: An overall slight improvement was observed in the state of the IBAs from 2.0 ± 0.31 mean score in 2008 up to 2.20 ± 0.20 for the year 2009. “Near Favorable” conditions for all IBAs increased to 80% in 2009 compared to 60% of 2008. In other words, percentages of “small improvements” increased from 20% (in 2008) to 40% (in 2009). However, 40% of IBAs were at “no change” conditions through these two assessment years (2008 and 2009).

Overall, 80% of all IBAs have registered an increase in state or remained stable as well, whereas only 20% registered a small decline. The droughts in the

northern Burundi may be the drivers for this small decline due to the famine that was experienced in this region driving local people who are very poor to illegally encroach on IBA's land to grow their crops as this periphery is still wet and fertile.

Pressure: The consideration of mean scores of all IBAs showed a very small reduction in pressure through 2008 and 2009. The mean score in pressure was -1.4 ± 0.4 in 2008 against -1.4 ± 0.24 of 2009. The pressure on IBAs reduced in 2009 as the high pressure percentages passed from 60% in 2008 down to 40% in 2009. The comparison of data of two consecutive assessments (2008-2009) showed that 20% of IBAs fall down from high pressure to Medium pressure.

To sum up, the overall status in pressure were shared between Medium pressure (60% in 2009 versus 20% in 2008) and High Pressure (40% in 2009 versus 60% of 2008). Overriding threats are still agriculture

encroachments, illegal or criminally instigated fires, overgrazing of livestock and trapping and poaching of animals which are reported at large.

Response: The overall status in response in IBAs reflected a slight increase in 2009. The analysis of mean scores and standard errors showed a slight increase as they range from 1.6 ± 0.24 to 1.6 ± 0.40 respectively in 2008 and 2009. The general tide of response interventions described the tendency as medium. Many interventions (conservation projects) were carried out or are ongoing and conservation awareness of riverine population has risen. The subchapter of Response gives more comprehensive information on response interventions. The end of this report addresses a number of recommendations to different stakeholders that will help to improve the status of IBAs.

Chapter 1. Burundi IBAs Monitoring Background And Monitoring Approach Presentation

1.0. Monitoring approach

The IBA Programme is one of the main mechanisms promoted globally by BirdLife International to address the conservation needs of birds, which is the core business of BirdLife. Monitoring the IBA Programme therefore helps to understand the effectiveness of actions and hence to communicate them to advocate for investment at specific sites and/or mobilize more resources for the work. The BirdLife ideology took two forms in Africa, for some African countries it came to strengthen their capacities in birding whereas to others it was seen as a pioneer in such a field.

In Burundi, the interest towards birds became effective when the 'Association burundaise pour la protection des Oiseaux' (ABO) came into being in 2000. ABO is committed to protect birds and their habitats by conservation and sensitization actions. In terms of capturing monitoring data, the form used formerly to collect information from field was slightly different from the one designed by BirdLife International and provided in the framework of the project of monitoring bird funded by European Commission via the Royal society for Protection of Birds RSPB, UK.

Before 2006, some funds were provided to count birds primarily in wetland sites such as the Delta of Rusizi River at its mouth with the Lake Tanganyika and in the Rwihinda Lake Ecosystem and partly in Kibira National Park. This was done as a contribution to providing data to establish the status and

trends of waterbirds in the world by Wetland International.

With the financial and technical support from BirdLife International a new system of monitoring of birds was used taking in account three attributes that is the time, score and severity of threats. The model introduced three key indicators noted as State, Pressure and Response to any monitored site. The meaning of these variables is as follows:

State indicators refer to the condition of the site, with respect to those bird populations for which it is important. State indicators might be population counts of the birds themselves. They can also be measures of both the extent and quality of the habitat required by these birds. State monitoring is only carried out for species that trigger (or triggered in the previous assessment) one or more IBA criteria for which the site qualified, or of habitats that are important for trigger species.

Pressure indicators identify and track the major threats to important bird populations at IBAs. It is usually preferable to monitor bird populations themselves but often this is not possible or very difficult. In such cases monitoring of key habitat is used as a surrogate.

Response indicators identify and track conservation actions, for example, changes in legal status of a site (through gazettelement etc),

implementation of conservation projects, establishment of site support groups, funding of conservation programs etc.

Here is the schematic approach that has been used by the Convention on Biodiversity Conservation and the Birdlife Partnership in Africa Europe, also adopted for purposes of IBA monitoring.

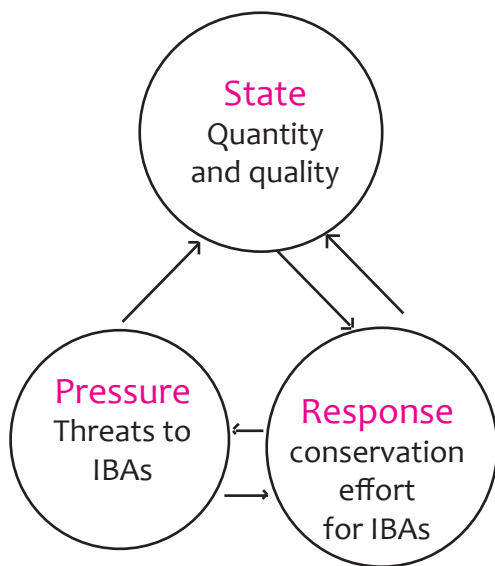


Fig. : Pressure-State-Response Model

The ‘weakest link’ approach should be used in assessing Pressure and State of an IBA. This was agreed when one noticed that an IBA may have records of several low threats but only one high threat could mislead the tide of the overall trendline and the IBA is therefore coded as being highly threatened. Here, a particular attention must be drawn in measuring as the overall result reflects the global overview of the site.

1.1. Important Bird Areas in Burundi and their location

In Burundi, birds are present everywhere but there are some more attractive sites where birds are abundant according to the living conditions available

(food and habitat). Most inhabited areas are also biodiversity-rich areas. These are protected areas (national parks and reserves). In the framework of this project, five PAs are designated as IBAs responding to BirdLife International criteria and others are being proposed to be PAs (Malagarazi marshes and Kigwena Forest Nature).The following is brief description of them.

1.1. 1. Rwihinda Lake Managed Nature Reserve (BI 001)

Around the central coordinates of 30° 4.00’ East and 2° 33.00’ south, the Rwihinda Lake Managed Nature Reserve is whole located in the north of Burundi, close to the Rwandan border. Lake Rwihinda (425 ha) was known in the past as “Lac aux Oiseaux” (i.e. Lake of birds). It lies a little way upstream of the Akanyaru wetlands (RW005), to the north-west. This IBA stretching over 8,000 ha comprises swamps of Nyavyamo and offers good habitat for over 189 bird species of which 15 species are of global concern. Birds of this IBA respond to A1 and A3 criteria.

1.1.2. Kibira National Park (BI 002)

With 47,794 ha Kibira National Park lies along the north-south-oriented mountains range of Congo-Nile divide. Its altitude ranges between 1,550 and 2,666 m. It is contiguous with Nyungwe forest in Rwanda (RW007) and, with it, forms a montane forest block of some 130,000 ha. Most of the remaining primary forest is found on the wetter, western mountain slopes. Kibira National Park makes the region the wettest and records a rainfall ranging from 1,700 to 2,000mm per annum.

This IBA holds many species of the Albertine Rift endemics and few species of the Guinea-Congo Forests biome, of Lake Victoria Basin and Zambezi biomes. 231 bird species of which 21 are endemic to Albertine Rift, 13 are listed on IUCN red list. 98 mammal species and about ten primate species are recorded. Birds inside are of A1, A2, A3 criteria.

1.1.3. Ruvubu National Park (BI 003)

Located in north-eastern Burundi, the park covers an area of 50,900 ha. The altitude varies between 1,350 and 1,836 m and the rainfall varies from 1,100 to 1,200 mm per annum. This park extends south-westwards from the border with Tanzania along the valley of the Ruvubu River of which it takes its name. The Ruvubu river valley comprises a series of flanked by swamp vegetation, gallery forest, further inland, savannah woodland and flood-plain grassland, while papyrus swamps with sparse *Syzygium* occur along the drainage lines of the smaller valleys.

Up to 338 bird species have been recorded, including 10 listed on IUCN red list. Most of bird species respond to A1, A2 and A3 criteria. Around 44 mammal species including panther, baboons, antelopes, buffaloes, jackals, hippopotamuses are

recorded. Very few lions sometimes go through the park from Tanzania reserves.

1.1.4. Rusizi Nature Reserve (BI 004)

Rusizi Nature Reserve, formerly 'Rusizi National Park' is located north-west not far from Bujumbura against the international frontier with DR Congo. It is made up of two parts; a 1,200 hectare strip of savannah strewn with numerous ponds, comprising the delta of the Rusizi at the mouth where is the junction with the Lake Tanganyika. Other part is made of false palm tree-*Hyphaene benguellensis var ventricosa*. The two components of this reserve amount to 5,456 ha. Its altitude varies between 780 to 1,000 m. This reserve, especially the delta and the mouth of Rusizi, offers good conditions for migratory water birds the reason why it is designed as wetland.

Census done showed that above 226 bird species responding to A1 and A4i criteria have taken up residence in that site and 10 of which are on the red list of IUCN. Hippos and crocodiles are the giant and terrible animals of the site.



Population of waterbirds at the sandbank near the delta of Rusizi Nature Reserve

Photo: Matthieu Voslin

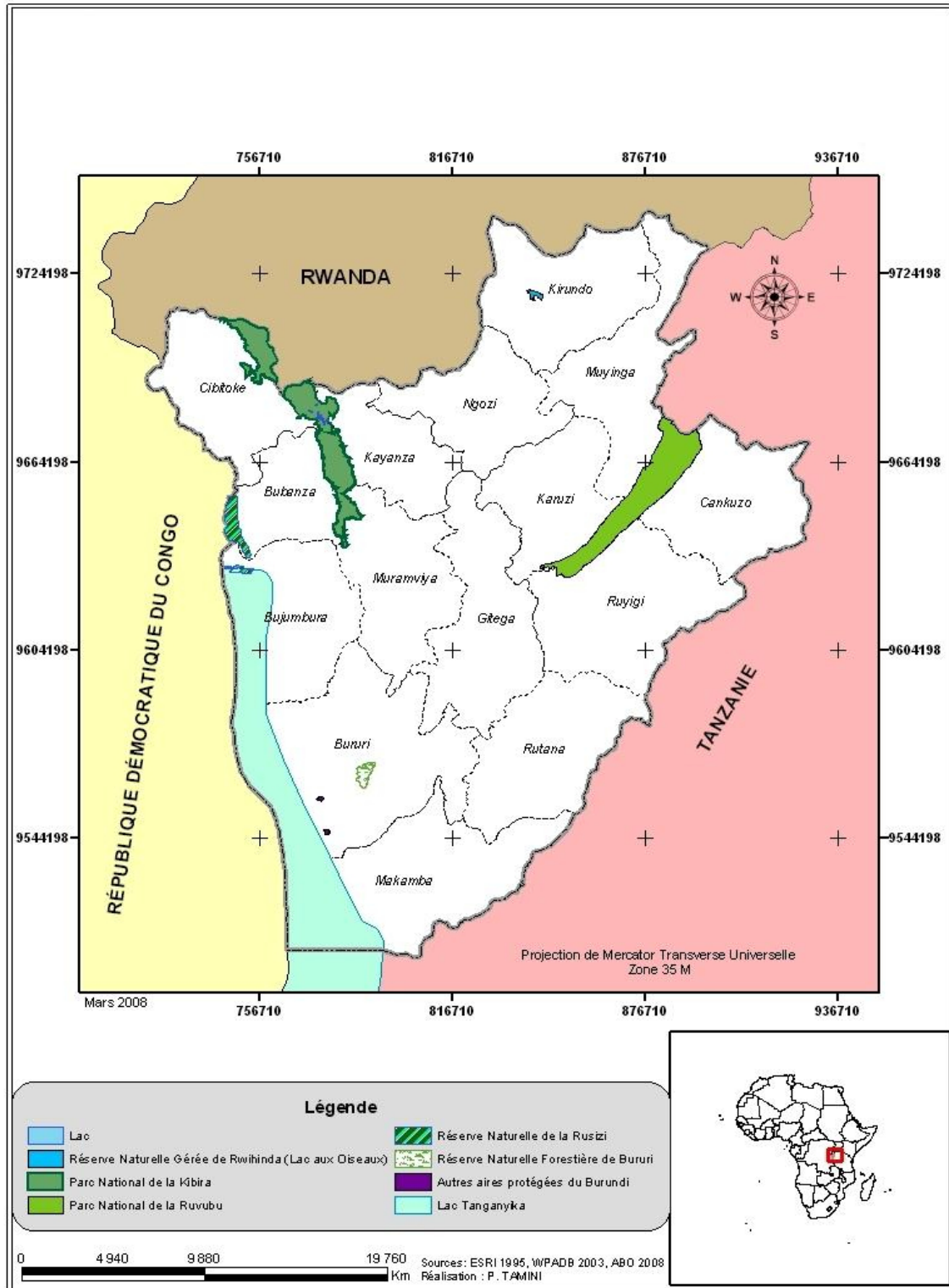
1.1.5. Bururi Forest Nature Reserve (B1005)

Bururi Forest is a 2,601 hectare highland rainforest situated on the extreme southern edge of the Congo-Nile divide and is lying immediately west of the town of Bururi in south-western Burundi. The natural evergreen forest covers 1,980 ha and the remaining area (621ha) is covered by pine plantation of *Pinus patula*. The reserve is situated at a biogeographic crossroads and consequently holds many plant and animal species of the Congo-Nile divide rainforest biome, of Zambezi region, of the drier savannah areas of the east and even

of the lowland evergreen forests of the Congo basin. Annual rainfall ranges from 1,200 mm to 2,400 mm.

Regarding bird diversity, 205 species have been recorded, 6 species are amongst the most threatened species according to the IUCN Redlist and 12 species are endemic to Albertine Rift and 36 belong to Afrotropical Highlands biome. Other animals include 4 species of primates among them the globally threatened chimpanzee (*Pan troglodytes*), etc. Birds of this IBA respond to the A1, A2 (106), A3 (A07) criteria.

Map and location of important bird areas in Burundi



1.2. Summary of State of Burundi's IBAs in 2008 and 2009

The state presented below is a result of comparison of monitoring data of 2008 and 2009

Table 1: Overview of Compared states Of Burundi's IBAs (Assessment spells: 2008-2009)

IBA Code	Name of site	State 2008	State 2009
BI001	Rwihinda Lake Managed Nature Reserve	No change	Small deterioration
BI002	Kibira National Park	No change	Small improvement
BI003	Ruvubu National Park	No change	No change
BI004	Rusizi Nature Reserve	Small deterioration	Small improvement
BI005	Bururi Forest Nature Reserve	Small improvement	No change

1.3. Comparison of State of Burundi's IBAs in 2008 and 2009

In reference to the state of previous monitoring data and making a comparison with the 2009 collected data, the table below illustrates different categories of IBAs's state.

Table 2: Comparison of categorical states of IBAs in 2008 and 2009

State	Monitored IBAs in 2008(%), N=5	Monitored IBAs in 2009(%), N=5
Small improvement	20	40
No change	60	40
Small deterioration	20	20

Chapter 2. Data And Information Collection Methods

2.1. Data collection process and accuracy

Monitoring teams are made up of members coming from Site support groups, INECN officials and other Communities Based Organizations (CBOs) adjacent to IBAs. The size of respondents varies according to the IBA's size. IBA monitoring forms were administered to the respondents and left with them. Completed forms were collected later for the next steps, even though some respondents dropped the filled in questionnaires at ABO office's secretariat in Bujumbura. For the local teams with many members near the sites, only consented information is recorded in the forms.

2.2. Problems encountered

The remoteness of IBA coupled with the rugged terrain for some IBAs posed a major challenge to monitor some parts of IBAs. This is considering that monitoring teams are mainly composed of volunteers, keeping in mind that this is an arduous activity.

Chapter 3. Analysis And Results

3.1. State of habitats and species

There is a general slight improvement in 2009 Burundi IBAs' state as 4 (80%) out of 5 IBAs have noticed "no change" or "small improvement" state in comparison with the 2008 assessment. Only one (20%) IBA has noted to be at "small deterioration" state. This small positive increment in IBAs' ecosystems has emerged from the computation of mean score and standard error of the state attribute which varies between 2.1 ± 0.31 (in 2008) up to 2.2 ± 0.20 (in 2009). Logically, the comparative analyses of state mean scores for the two consecutive years (2008 and 2009) showed that the overall state ranges between "Near favourable" and "Favourable" conditions. Nevertheless the separate analyses of the trend and status of individual IBA may show variations, the reason why this slight improvement does not reflect increment in status of all the IBAs at large.

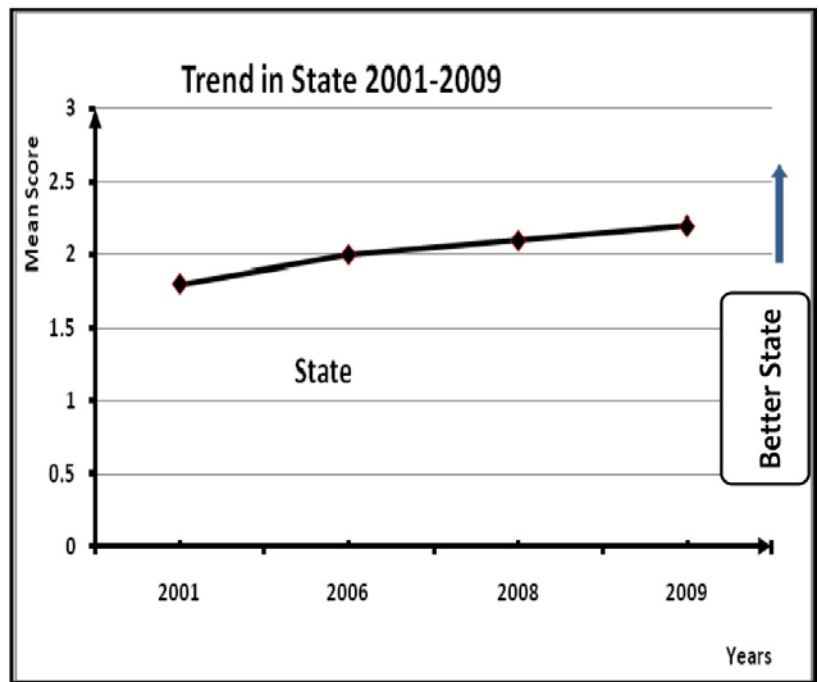
At Kibira National Park, a net improvement in state conditions was noticed. This could be attributed to the ceasefire by rebel groups ceased (2006) because this was originally the stronghold for the fighting movements (rebels). Prior to that period, large mammals and other wildlife were immensely threatened by rebels who considered bush meat as a readily available substitute in view of scarce food resources. This period was also characterized by deforestation to meet their fuel wood, charcoal and timber needs.

At Bururi Forest Nature Reserve, the state also is noted to have a remarkable improvement. Locals

who profited from the political upheavals of 1994 and beyond have recently been banned from exploiting excised lands and therefore there is the regeneration of forest in such areas. Prior to 2006, there were much pressure inside this forest reserve but currently a net improvement in terms of habitat conditions is noted as environmental organizations, reserve authorities and local administration work together to protect this Forest Reserve IBA.

At Ruvubu National Park, assessments of the status and trend during these two consecutive years (2008 and 2009) showed a relative improvement in habitat conditions due to wardens and local communities' collaborative efforts in reducing wild fires and wildlife poaching. However, a considerable savannah portion of the Park was swept by fires during the last dry season.

At wetlands IBAs, one can notice a slight decline in state due to the continuous shrinkage of Rusizi Nature Reserve as a result of encroachment of rice farming and disturbances on the Lake Rwihinda and on Nyavyamo marshes in Rwihinda Lake Nature Reserve. It is worth noting that in case of irregular and insufficient rain on Bugesera region, droughts become harsh and poor people living around are left with no option but to cultivate the marshes of Nyavyamo. As for fishing, they used unorthodox methods (using mosquito nets and any other nets with small mesh) to illegally fish on the Lake Rwihinda where fishing activities are banned.



Graph 1. overall trend of state of PAs/IBAs

3.2. Pressures (threats) to Burundi IBAs

Overriding threats such as agriculture encroachment, undefined poaching, wildfires and the criss-crossing paths have kept the status quo in affecting all (100%) IBAs as well in 2009 as in 2008. Other most recorded threats in 2009 including the extraction of sand, gravels and ores, gathering plants and collection of wood and medical herbs, illegal fishing and overfishing occur in 60% cases (a decrease of 20% from previous year), threats like landslides and agricultural effluents, garbage and solid wastes have mounted up to 40% as they were at 20% previously (see table below).

However, the overall status of Important Bird Areas in 2009 remained stable from the next year till now. Nevertheless, a number of sites within IBAs registered a marked pressure, but fortunately this has not yet reached a level where the overall pressure trend of IBAs is seriously affected. Kibira National Park and Bururi Forest Nature Reserve have shown noticeable positive changes due to the collaborative spirit of local communities who currently better understand the importance of conserving the environment. Rusizi Nature Reserve and Rwihinda Lake Managed Nature Reserve experienced an increase in pressure from agricultural activities.

The table below shows the main threats to IBAs which override over time (Table no.3).

Table 3. Top threats to IBAs during the monitoring years: 2001; 2006; 2008 and 2009

Threat (%of IBAs)	2001 (% of IBAs)	2006 (% of IBAs)	2008 (% of IBAs)	2009
Agriculture encroachment/annual smallholder farming	60	100	100	100
Illegal poaching, hunting & trapping	60	60	100	100
Illegal and uncontrolled fires	40	80	100	100
Roads , pathways & service lines		80	100	100
Overgrazing/Small-scale grazing, nomadic grazing		60	100	100
Agriculture encroachment/Shifting agriculture		60		80
Extraction of sand and ores(gold)	20	20	80	60
Gathering plants, fuel wood and medicinal herbs		80	80	60
Direct mortality by persecution or control			80	60
Illegal fishing and overfishing	20	60	60	60
Disturbing recreational activities		60	40	60
Disturbance due to work & other activities		80	60	20
Invasive species issues		40	60	20
Habitat shifting & alteration			60	20
Reflection of drought		20	60	20
Destructive storms & floods		20	60	20
Perennial non timber crops/small-holder plantations			40	20
Human settlements into protected areas		20	40	20
Habitat effects by hunting & trapping		20	40	40
Illegal logging and fuelwood collection	20	20	40	20
War, civil unrest & military exercises		20	40	-
Problematic native species			40	20
Domestic & urban waste water		40	40	40
Aerial noise pollution due to flight paths		20	40	40
Dams & water management/use		20	20	20
Agricultural effluents, garbage & solid wastes		40	20	40
Natural landslides			20	40
Wood & pulp plantations / Small-holder plantations		20		-
Other ecosystem modifications		40		-
Recreational activities		60		20
Works and other disturbing activities		80		-

3.2.1. Agriculture encroachment/annual smallholder farming

The shortage of agriculture land in areas adjacent to PAs/IBAs coupled with the high population increase makes the adjacent people to illegally encroach in some parts of PAs. This pressure as it was in 2008, shared the top spot at 100% of IBAs surveyed in 2009. In Rwihinda Lake Managed Nature Reserve (the IBA under highest pressure) the situation is harsh due to the severe droughts that hit the whole Bugesera natural region where the site is located. Populations living near that site encroach into marshes for subsistence cultivation. This encroachment for agricultural purposes is a pressure on waterbird species that breed at the shores of the lake.

At Rusizi Nature Reserve, the transformation of savanna into rice farming is mounting due to the illegal squatters who settled here since 2001. They continuously expand their farms and, in so doing shrinking the protected area. In other IBAs such as Kibira and Ruvubu National Parks and Bururi Forest Nature Reserve, agriculture encroachment is reported but on smaller scale.

3.2.2. Illegal poaching, hunting & trapping

The killing of birds either directly or indirectly by hunting or trapping has been reported in all (100%) of the IBAs. Notable cases are trapping ducks and gulls and storks in Rusizi and Rwihinda wetlands by fishermen, indirect killings resulted from some other bird categories caught out in traps and released later after having serious terminal injuries and die in a couple of days later thus increasing mortality. Direct kills mean hunting and trapping



for bushmeat consumption in some areas of parks and nature reserves. Fishermen or the batwa social groups are involved in this vice. Apart from those bird species, other mammals and reptiles are targeted by poachers in protected areas. For example, in Rusizi Nature Reserve, hippos and crocodiles are sporadically killed for meat and the number of killed animals is not well documented as the area is adjacent to Democratic Republic of Congo where some poachers cross the Rusizi River and come to encroach in Rusizi. The part of meat of killed animals is often taken to DRC for sale.

3.2.3. Illegal and uncontrolled fires

Wild fires are common in Burundian IBAs. The escalation of wildfires is mostly recorded in the dry season when the summer is harsh or prolonged. As reported in 2008, the threat has repeated in all IBAs at various scales. The most impacted IBA is the savanna grassland portion of Ruvubu National Park where above 30% of the park was razed by fire in 2009. Fewer incidences were recorded in Kibira National Park and in Bururi Forest Nature Reserve.



Devastating wild fires onto Ruvubu National Park during the dry season

Photo: ABO (2009)

3.2.4. Overgrazing/Small-scale grazing and nomadic grazing

Due to Burundi's high population density (more than 380 inhabitants/sq.km in highly populated areas) grazing land is a serious issue. With a subdivision of arable lands, a household has an average of 0.5 ha. Rearing one's livestock is a major problem. This was found as a common threat to PAs/IBAs as 100% IBAs were experiencing the fact that herdsmen opted to take their cattle in protected areas for grazing. Rusizi Nature Reserve being in proximity to Bujumbura capital is remarkably affected as it becomes the destination for livestock feeding grounds for those that are reared in the suburbs. In Rwihinda Lake Nature



Illegal cattle grazing into Ruvubu National Park afterward uncontrolled fires

Photo: ABO (2009)

Managed Reserve, overgrazing incidences are remarkably noticed during droughts spells where marshlands of Nyavyamo receive thousands of livestock for grazing. Elsewhere in IBAs, the illegal grazing is recorded but on small scale.

3.2.5. Agriculture encroachment/Shifting agriculture

Shifting agriculture does not largely impact protected areas but it was reported to occur in 4 out of 5 (80%) IBAs in 2009. This consists of taking up some small portions of forestlands during an agriculture season and abandoning it after harvesting cash crops or banned crops grown in. This is mostly noticeable in Kibira national Park and in Bururi Forest Nature Reserve.

That same scenario was noticed in 2006 at a rate of 60% of IBAs. It was reported in Kibira National Park, Bururi Forest Nature Reserve and in Ruvubu National Park. The incidences of that pressure were as small scale as in 2009.

3.2.6. Gathering plants, fuel wood and medicinal herbs

Populations living near IBAs rely on wood for domestic energy. This is showed by high incidences of fuel wood collection in 3 out of 5 (60%) of the IBAs. Apart from the collection of the fire wood, population around PAs use the forest for herbal medicines as they are the only areas that still have many indigenous tree species used for medicinal purposes. High incidence in that threat (debarking stems and/or uprooting trees) is reported in Kibira evergreen forest where also collection of bamboos for handicraft is worrying.

These threats impact bird species as their nests fixed on dried trees are often destroyed when dried woods are being cut. It's noteworthy that some species like Weavers make their nests on specific tree species like *Cassia spp.* *Cassias* are the most debarked for traditional medicines. Accurate impact on birds' habitat is yet to be evaluated and quantified.

In addition, trees are cut down for charcoal making within Rusizi Nature Reserve. This represents the worst scenario where false palm trees (*Hyphaena benguellensis var. ventricosa*) are dramatically cut for that purpose. It is worthwhile to note that this tree species is endemic to the area and not found elsewhere in the world. Elsewhere, in Ruvubu and Kibira National Parks sporadic tree cuttings for charcoal making were recorded during 2009 in small scale compared to the 2008 cuttings.

Unsustainable harvesting for thatching or handicrafts materials at wetlands IBAs is also another serious threat. The demand of grass for thatching traditional houses and basketry thus puts a lot of pressure on wetland vegetation. This practice unless controlled is likely to have a very serious impact on the Globally threatened Grauer's Swamp Warbler (*Bradypterus graueri*) which occurs in Burundi highlands of Kibira National Park and Bururi Forest Nature Reserve.

3.2.7. Over fishing and illegal fishing

Fishing as an activity within the IBAs has been reported in 3 (60%) of the IBAs. Illegal fishing is carried out in Rwihinda Lake managed Nature Reserve, Rusizi Nature Reserve within the River and in Ruvubu National Park within the Ruvubu

river. Located in drought area, fishing activities in Rwihinda Lake have led to decline in habitat quality and potent disturbance of trigger species. Communities living in grinding poverty use inadequate gear such mosquito nets and other handcrafted devices to indiscriminately catch all fish no matter the size. This is harmful to the IBA as bird trigger species as well as other water birds miss fish which is their exclusive food if not so, their staple food. This substantially affects regeneration and mortality.

In some cases, fishermen burn aquatic vegetation so as to create space for catching mudfish particularly *Protopterus spp* (at Rusizi Nature Reserve) and *Clarias spp* (at Rwihinda Lake Managed Nature Reserve) which are abundant at these IBAs. By burning this vegetation, roosting, nesting and feeding habitats for birds are consumed by these fires. There is a need to evaluate the exact impact of this on population dynamics, mortality and breeding success of species that are restricted to this habitat.

Fishing in Ruvubu River - Ruvubu National Park is seen as a big threat as fishermen catch young fish which are sold in the neighbouring region of Tanzania. With no intervention measures put in place by park authorities, fish stock of this river will be exhausted quickly.

3.2.8. Roads, pathways & service lines (fragmentation and isolation of the habitats)

A network of pathways criss-cross all of our protected areas since the public utilities like churches, schools, shopping and health centres are scattered out of these protected areas,

local communities manage to link these places by creating pathways which cross PAs to shorten the distance. This is therefore a serious threat to protected areas as they negatively contribute in modification and fragmentation of landscapes and ecosystems. Compared data of 2009 and 2008 shows this is a threat in all (100%) IBAs. Kibira and Ruvubu National Parks and Bururi Forest Nature Reserve are the most affected by this threat.

To be precise, a main tarmacked road crosses Kibira National Park to link Cibitoke and Kayanza provinces whereas two roads, all-weather murrum road and rough road, cross Ruvubu National Park and Bururi Forest Nature Reserve respectively.

3.2.9. Destructive mining & quarrying

Extraction activities are in form of quarrying sand, collection rubble stones and gravels, and quarrying gold. This pressure is being practiced in 3 (60%) of the IBAs. The collection of sand, gravels and other

building materials and mineral prospecting and mining pose serious threat to protected areas and the biodiversity they support due to the landscape fragmentation caused by these activities

The northern portion of Rusizi Nature Reserve is threatened by quarrying of sand. Kibira National Park is affected by gold mining by locals primarily in Cibitoke province towards the Kibira-Nyungwe forest limits. Ruvubu National Park was affected by mining of nickel in 2008. A railway is scheduled to be built in the near future crossing the northern portion of Ruvubu National Park. With Nickel mining scenario, we foresee negative impact on the ecosystem as the landscape will be severely modified leading to land use change and significant disturbance to biodiversity.

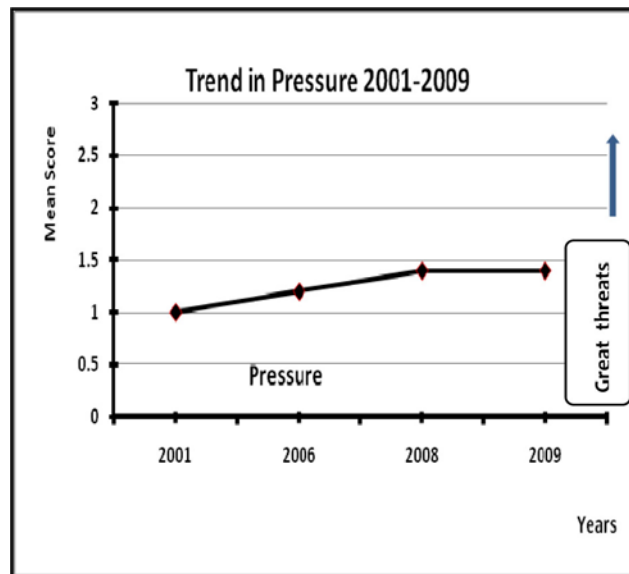
3.2.10. Pollution in IBAs

The issue of pollution in Burundi IBAs is not common, but one can denote pollution due to the use of agro-chemicals that are either directly spilled into streams or the chemicals percolate to the water in the IBAs. The use of chemicals from agricultural activities into the IBAs is reported in Rusizi Nature Reserve. One special case reported is Rwihinda Lake where effluent (blood and other liquids wastes) from the slaughterhouse was spilled into the lake though this was on a small scale. Noise pollution is caused by takeoffs and landing of planes. The proximity of Bujumbura International Airport to Rusizi Nature Reserve is seen as a threat as it disturbs animals in the Reserve.



Prospecting well of nickel in RNP

Photo: ABO (2009)



Graph 2. Overall trend of Pressure on IBAs

3.3. Response/conservation actions at monitored IBAs: Overall response

3.3.1. Overview of general response interventions

The conservation status has been stable for the two consecutive assessment years (2008 and 2009), though conservation efforts have improved as it is shown at the trendline of response from 2001 through 2009. The mean scores showed a move from low through medium (1.6 ± 0.4). In 2006 assessment, low response to conservation accounted for 100% compared to only 40% in 2008 and in 2009. This is attributed to the various efforts from diverse local conservation NGOs and the collaborative spirit of INECN officials who facilitate the implementation of conservation projects. SSGs are also involved in PAs/IBAs protection as they take part in various monitoring activities undertaken on sites. In so doing, the conservation awareness has raised amongst members of these community-based organisations. Projects implementers carry

out various project activities together with local groups (SSGs); this is an incentive to conservation response.

3.3.2. Interventions in climate change Mitigations

ABO as well as other environmental local NGOs mitigates the impacts of climate change by cutting down carbon emissions through tree planting activities. Each year trees on large scale of land are planted by ABO and parented by SSGs around Kibira and Ruvubu National Parks. In addition, demonstration sessions on how to use kilns and solar energy stoves are held periodically where SSGs' members and administrative authorities attend the meetings. Some solar energy stoves were given to social groups around Rwhinda Lake Managed Nature Reserve and to SSGs of Rukoma, Mutumba and Rabiro around Ruvubu National Park. It is anticipated that energy saving initiatives will ease pressure on the respective sites.

3.3.3. Comprehensive collaboration between/of governmental agencies and local NGOs for conservation

As a result of spirited requests by INECN, the Ministry of Interior Affairs and the Ministry in charge of environment have put in place special police whose work is to support the efforts of wardens and protected areas authorities. This special police help rangers in their daily patrol of protected areas. This collaboration between these two governmental institutions has produced positive effects because the rate of poaching cases has significantly reduced.

The collaboration between government agencies such as INECN and MEEATU Forest Department and ABO, BNA, ACVE etc, have immensely helped in implementation and execution of conservation programmes in protected areas.

The project activities are done with the help of local administration authorities so as to involve them fully in conservation efforts. This has been vital especially in negotiation with local communities in areas that are sensitive and need government interventions.

3.3.4. Advocate for conservation

A number of advocacy interventions were made at different IBAs. The advocacy interventions took the form of campaigns. This involved sensitizing the locals on wildfires that often occur during dry season in protected areas/ Important Bird Areas. ABO organized an eight-day campaign on this in late July/early August at Ruvubu National Park

to counter uncontrolled fires lit by poachers comprising local population and people from Tanzania.

A number of education and awareness meetings are held for SSGs to educate members on the importance of protecting natural resources and on how wildlife/human interfacial conflicts could be afforded.

Around protected area IBAs, many informative public talks on conservation were organized by ABO and a number of key persons were in attendance including policy-makers, management authorities and Site Support Groups' members. All these campaigns are vital in dissemination of information.

3.3.5. Environmental programme tailored for youth

There has been a newly initiated environmental education scheme in different environment clubs at various secondary schools of Bujumbura and in upcountry through the Wildlife Clubs Africa (WCA) project where three thousands students from various secondary schools took part.

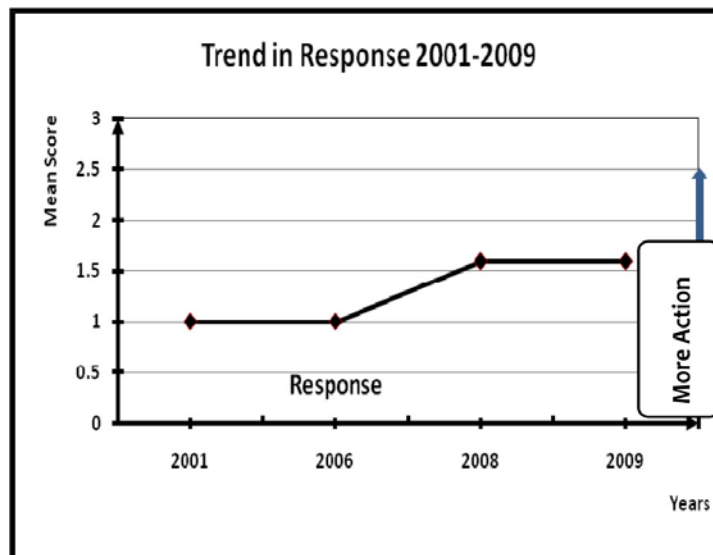
The purpose of the programme was to link African children by using Internet tools to enable them to interact and learn different environment issues. The students learnt basic computer skills, office software and Internet surfing during the training sessions.

3.3.6. Interventions by indigenous tree planting

Many more Initiatives have been made to primarily rehabilitate the degraded habitats in Kibira National Park through four IUCN/ NL conservation projects implemented by ABO(2), ACVE(1) and BNA(1) and other community based associations. In line with the above a seventeen kilometer stretch around Kibira National Park was vegetated by bamboo rhizomes and some other 50,000 seedlings of

indigenous trees were planted out of the park. ACVE through a programme of rehabilitating wild ecosystems planted trees in degraded areas and in the buffer zones of Kibira National Park. Thus, 19 hectares were planted with indigenous trees.

The general trend of response is showed on the graph that follows.



Graph 3. Overall Response trend from 2001 to 2009

Chapter 4. Recommendations

Based on information and data collected from diverse protected areas/ important bird areas in Burundi, a series of recommendations has been drawn to the major stakeholders who, if implemented, will help to improve wildlife-rich landscapes.

4.1. MEEATU and INECN

- Update laws and develop policies that favor sustainable use and conservation of nature resources in Burundi and fasten the gazettelement of Ruvubu National park so far not recognized legally as a national park;
- Ratify and sign other very important international treaties such as United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification (UNCCD) and African and Eurasian Waterbird Agreement (AEWA) and scrupulously observe treaties and conventions ratified and/or signed;
- Open gates for other local and regional partnerships so as to work together on conservation and mitigation of climate change effects by promoting reforestation and afforestation of degraded areas of Burundi;
- Quicken demarcation and designation of effective boundaries and buffer zones of Ruvubu National Park and Rusizi Nature Reserve in order to put a halt to agriculture incursions by highlighting physical limits;
- Draw up a Master Plan for the management of protected areas including important marshlands;
- Lobby the government to allocate more funds and augment numbers of rangers by site in order to ensure effective conservation of Protected Areas;
- Propose new potential PAs/IBAs to be designated or gazetted. These should include Malagarazi wetland and Estuaries of main rivers draining into Tanganyika Lake;
- Develop a harmonised conservation strategy to ensure smooth communication network, coordinated conservation and long-term partnerships between INECN and other stakeholders;
- Develop the capacity of rangers to enforce law, monitor biodiversity and increase the coverage of patrols;
- Enhance collaboration with local communities living around protected areas in order to get them fully-involved in conservation process;
- Re-possess all government forest land which was illegally allocated or encroached and make title deeds available for all government forestlands.

4.2. Ministry of Agriculture and Livestocks

- Develop a strategy for a domestic breeding so as to put a stop to the wandering of cattle into protected areas as a way to forestall public health incidents related to transmissible disease between wild and domestic animals present on protected areas.
- Encourage households to develop individual woodlots so as to counter the increasing

demands of fuel woods currently satisfied by collecting of forest resources;

- Promote agroforestry where multipurpose trees should be planted to help to reduce the rates of erosion, increase soil fertility, provide fodder to animals and ease the problem of firewood -

4.3. All NGOs playing a role in conservation

- Advocate for the establishment of a National Liaison Committee that oversees all interventions on the IBAs;
- Raise standard of living of rural population by promoting income generating activities through development of micro-projects including conservation and sustainable management of wild sites;
- Enhance collaboration with stakeholders and local communities to avoid duplication of efforts and identify gaps for funding for conservation interventions;
- Introduce alternative means of livelihoods to communities living near IBAs and support non-consumptive income generating activities.

4.4. ABO

- Train more people in basic monitoring techniques and ûlling in of the forms;
- Fundraise for IBA focused activities to address conservation challenges;
- Establish, strengthen and empower site support groups and enhance collaboration with local authorities and local communities around protected areas to broaden conservation willingness;
- Increase awareness of local community on the value of conservation of IBAs; build their capacity through field-learning;
- Carry out regular bird counts at all IBAs and extend this action to all potential IBAs so as to regularly update the birds checklist in Burundi;
- Initiate a countrywide programme geared towards conserving the environment and birds in particular. -
- Bring more communities gathered in SSGs to be pioneers in conservation of forest resources and to respect and protect the integrity of forestland or PAs.

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Appendices

Appendix I: Main threats recorded in Burundian IBAs

BI 001 : Rwihinda Lake Managed Nature Reserve

BI 003 : Ruvubu National Park

BI 005 : Bururi Forest Nature Reserve

BI 002 : Kibira National Park

BI 004 : Rusizi Nature Reserve

Threat	BI 001	BI 002	BI 003	BI 004	BI 005
Agriculture encroachment/annual small holder farming	x	x	x	x	x
Direct mortality of 'trigger' species by hunting & trapping	x	x	x	x	x
Wildfires devastations	x	x	x	x	x
Roads , Utility & service lines		x	x	x	x
Overgrazing/Small-holder grazing	x	x	x	x	x
Destructive mining & quarrying		x	x	x	
Gathering plants, fuel wood and medicinal herbs		x	x	x	x
Direct mortality by persecution or control	x	x	x	x	
Tourism & recreation areas	x		x	x	
Overfishing, harvesting aquatic resources	x		x	x	
Invasive alien species	x			x	x
Habitat shifting & alteration				x	x
Drought	x			x	
Storms & floods		x	x		x
Perennial non timber crops/small-holder plantations		x		x	x
Housing areas(Human settlement)		x		x	
Indirect mortality (by catch) of 'trigger' species / hunting		x	x	x	
Habitat effects by hunting & trapping		x	x	x	
Illegal logging		x			x
Disturbing recreational activities	x		x	x	
Problematic native species		x		x	x
Domestic & urban waste water	x			x	
Aerial noise pollution		x		x	
Garbage & solid wastes				x	
Dams & water management/use		x			
Illegal grazing/Nomadic grazing				x	
Agricultural effluents					x
Natural landslides			x	x	
Flight paths		x		x	
Wood & pulp plantations / Small-holder plantations					x
Other ecosystem modifications		x	x		
Recreational activities	x		x	x	
Works and other disturbing activities	x	x	x	x	

Threat type	Scores			Details
	Timing	Scope	Severity	
1. Agricultural expansion & intensification				Give details of specific crops, e.g. oil palm, or e.g. cattle, & issue
Annual crops- Shifting agriculture				
- Small-holder farming				
- Agro-industry farming				
Perennial non-timber crops- Small-holder plantations				
-Agro-industry plantations				
Wood &pulp plantations- Small-holder plantations				
- Agro-industry plantations				
Livestock farming & ranching- Nomadic grazing				
- Small-holder grazing, ranching or farming				
- Ranching or farming				
2. Residential & commercial development				Give details of type of development & issue
Housing & urban areas				
Commercial & industrial areas				
Tourism & recreation areas				
3. Energy production & mining				Give details of specific resource & issue
Mining & quarrying				
4. Transportation & service corridors				
Roads				
Utility & service lines				
Flight paths				
5. Over-exploitation, persecution & control of species				Give details of issue
Direct mortality of 'trigger' species-hunting & trapping				
- persecution/control				
Indirect mortality (by catch) of 'trigger' species-hunting				
- fishing				
Habitat effects-hunting & trapping				
- gathering plants				
- logging				
- fishing & harvesting aquatic resources				

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

Threat type	Scores			Details
	Timing	Scope	Severity	
6. Human intrusions & disturbance	Give details of specific activity & issue			
Recreational activities				
War, civil unrest & military exercises				
Work & other activities				
7. Natural system modifications	Give details of the alteration & issue			
Fire & fire suppression				
Dams & water managements				
Other ecosystem modifications				
8. Invasive & other problematic species & genes	Give details of the invasive or problematic species & issue			
Invasive alien species				
Problematic native species				
Introduced genetic material				
9. Pollution	Give details of pollution, source if known (e.g. Agricultural, domestic, industrial) & issue			
Domestic & urban waste water				
Industrial & military effluents				
Agricultural & forestry effluents & practices				
Garbage & solid waste				
Air-borne pollutants				
Noise pollution				
10. Geological events	Give details of specific event and issue			
Avalanches/landslides				
11. Climate change & severe weather	Give details of specific event & issue			
Habitat shifting & alteration				
Drought				
Storms & floods				
12. Other	If the threat does not appear to fit in the scheme above, give details here of the threat, its source if known and how it's affecting the IBA			
1.				
2.				
3.				

CONDITION OF BIRD POPULATIONS AND HABITATS ('STATE')

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

.....

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

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

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

Habitat	Current area if known (include units, e.g. ha, km ²) or code	Details/comments/major changes

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

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

Habitat	Quality rating*	Details/comments/major changes

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

CONSERVATION ACTIONS TAKEN AT IBA ('RESPONSE')

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

.....

.....

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

CONSERVATION DESIGNATION

- Whole area of IBA (>90%) covered by appropriate conservation designation
- Most of IBA (50-90%) covered (including the most critical parts for the important bird species)
- Some of IBA covered (10-49%)
- Little/none of IBA covered (<10%)

Details and explanation

.....

.....

MANAGEMENT PLANNING

- A comprehensive and appropriate management plan exists that aims to maintain or improve the population of qualifying
- A management plan exists but it is out of date or not comprehensive
- No management planning exists but the management planning process has begun
- No management planning has taken place

Details and explanation

.....

.....

CONSERVATION ACTION

- The conservation measures needed for the site are being comprehensively and effectively implemented
- Substantive conservation measures are being implemented but these are not comprehensive and are limited by resources and capacity
- Some limited conservation initiatives are in place (e.g. action by Local Conservation Groups)
- Very little or no conservation action is taking place

Details and explanation

PART III. INFORMATION ON PEOPLE AND INSTITUTIONS AND THEIR ACTIVITIES

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

LCG name	Total members	Male members	Female members	Other information

PART IV. ACTIVITIES UNDERTAKEN AT THE IBA

In the table opposite, please indicate the activities undertaken by any the LCG, other CBO, the Birdlife Partner, Government agencies or other organizations or people at the IBA. This should include current activities, and activities carried out in the last four years

Notes on action type

- Land/water protection** Actions to identify, establish or expand parks and other legally protected areas
- Land/water management** Actions directed at conserving or restoring sites, habitats and the wider environment
- Species management** Actions directed at managing or restoring species, focused on the species of concern itself
- Education & awareness** Actions directed at people to improve understanding and skills, and influence behavior
- Law & policy** Actions to develop, change, influence, and help implement formal legislation, regulations (including at the community level), and voluntary standards.
- Livelihood, economic & other incentives** Actions t use economic and other incentives and to influence behavior
- External capacity building** Actions to build infrastructure resulting in better conservation, including through civil society development (e.g. enhancing community role in decision-making on natural resource use).

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

PART V. ADDITIONAL INFORMATION

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

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