SECTION 3: BIRDS

Blue-headed sunbird, an endemic species. A.J.Plumptre, WCS

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3.1 SUMMARY

A total of 1061 species of bird have been recorded in the 33 sites of the Albertine Rift for which we could obtain reasonable records. This is about 52% of all birds found on mainland Africa. There are 41 species endemic to the Albertine Rift and associated Eastern Zairian Lowland forests. The Virunga National Park in DRC has a recorded list of 706 species and is the richest of the protected areas in the Albertine Rift. Queen Elizabeth National Park in Uganda ranks second with 594 species and Itombwe Massif with 583 ranks third. The Itombwe Massif, with 34 species, has more species endemic to the Albertine Rift than any other site followed by Kahuzi Biega National Park (30) and Virunga National Park (27). The Itombwe Massif has more highly threatened species (CR, EN or VU) than any other site (15) with Virunga National Park, Kahuzi Biega National Park and the highlands west of Lake Edward each ranking second (11). If all IUCN red list criteria species are included then the Itombwe Massif contains the highest number (30), and Virunga National Park ranks second (23) and Kahuzi Biega National Park ranks third (19). Six sites can protect more than 90% of species in the rift and over 95% of all endemic and threatened species. Nine sites are required to protect all endemic species in at least one site.

Au total 1061 espèces d'oiseaux ont été inventoriées dans les 33 sites du Rift Albertin pour lesquels nous avons pu obtenir des données fiables. Cela représente environ 52% de tous

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les oiseaux du continent Africain. On compte 41 espèces supposées endémiques au Rift Albertin. Le Parc National des Virunga en RDC avec un record de 706 espèces d'oiseaux est a ce point le plus riche des aires protégées du Rift Albertin. Le parc national Queen Elizabeth en Ouganda est le deuxième avec 594 espèces, suivi du Massif d'Itombwe, avec ses 583 espèces. Ce dernier, avec 34 espèces, a plus d'espèces endémiques au Rift Albertin que tout autre site, suivi du Parc National de Kahuzi-Biega (30) et du parc National des Virunga (27). Le Massif d'Itombwe detient plus d'espèces menacées (CR, EN ou VU) que toute autre site (15) suivi en seconde position par les Parcs Nationaux des Virunga, Kahuzi-Biega et les Hauts plateaux du Lac Edouard (11). Si tous les critères de la liste rouge des espèces de L'UICN étaient inclus, alors le Massif d'Itombwe contiendrait le nombre le plus élevé (30), suivi des Parcs Nationaux des Virunga (23) et Kahuzi-Biega (19). Six sites pourraient protéger plus de 90% d'espèces dans le rift et plus de 95 % de toutes les espèces endémiques et menacées. Neuf sites sont nécessaires pour protéger toutes les espèces endémiques dans au moins un site.

3.2 INTRODUCTION

The bird list that was compiled is probably the most complete of any of the lists available. This is due to the work of many ornithologists over the years that have contributed to the cataloguing and study of birds in this region. Ornithology is a hobby for many people who are not professional biologists and there are several magazines and small journals that allow species lists to be published unlike the other taxa in this report. This is probably why the bird list is more complete than the other taxa presented in this report.

3.3 INFORMATION SOURCES

A variety of sources were used to compile the bird list for the 33 sites where surveys have taken place. These sources are listed below by country. The authors of this chapter have also contributed many records.

Uganda

The main source for Uganda was the checklist of birds of the national parks (Wilson, 1995) and the biological surveys undertaken by the Uganda Forest Department (Howard and Davenport, 1996 – which also compiled data from many previously published sources). Additional data came from the Enhancement of Research Capacity (ENRECA) project managed by Makerere University Institute of Environment and Natural Resources, surveys undertaken by the Wildlife Conservation Society, and records compiled by Malcolm Wilson. Additional published records that were incorporated after checking with experts who knew the sites include: Evans and Balmford (1992), Gnoske and Marks (1997), Kalina and Butynski (1996), Friedman and Williams (1970), Dehn and Christiansen (2001), Stubblefield (1993), and Allan (1994).

Rwanda

Kunkel and Kunkel (1969), Dowsett, Dowsett-Lemaire and Van de Weghe (undated), Dowsett (1990) and Plumptre et al. (2002) produced lists of birds for the Nyungwe Forest Reserve. These data were combined with unpublished sightings from the Wildlife Conservation Society project in this forest. A list for the Virunga Volcanoes was produced using Schouteden (1938), Wilson (1982), and Wilson (1995).

DR Congo

Schouteden (1938) reported on extensive surveys by Belgian scientists in the Virunga National Park and Verheyen (1947) added species to the northern part of the park. M.

Languy provided additional observations. Muhlenberg, Slowik and Steinhauer (undated) and Wilson and Catsis (1990) provided a preliminary list for Kahuzi Biega National Park and this was augmented using the database of bird specimens at the Royal Museum of central Africa in Tervuren (M. Herremans pers. contributions.). Schouteden (1949) surveyed Katanga district from which a list for Marungu Massif was derived, Prigogine (1960) provided a list for Mt Kabobo, Prigogine (1971-1984), Wilson and Catsis (1990) and Omari et al. (1999) provided lists for Itombwe Massif and Prigogine also provided lists for Idjwi island (Prigogine, 1967) and for the area west of Lake Edward (Prigogine 1953). Many new records in eastern DRC have been published by Demey et al (2000). Tom Butynski contributed records for Mt Tsiaberimu.

Burundi
Schouteden (1966) published a list of birds of Burundi with locations where they had been sighted – this publication was used to compile a list for Ruzizi National Park. Gaugris, Prigogine and van de Weghe (1981) added species to this list and INECN produced a list for Kibira National Park in the mid 1980s (INECN, undated). Van de Weghe and Loiselle (1987) also produced a list for Bururi forest reserve.

Tanzania
Neil Baker provided lists for Gombe Stream and Mahale Mountains National Parks from the database he has of Tanzania's birds. These were used to correct and add to lists compiled by Stanford and Msuya (1995), Ulfstrand and Lamprey (1960), and Moreau (1943). D. Moyer provided lists for Mbizi forest and Ufipa plateau.

All species names in the old lists were carefully updated to the recent names to ensure that species were not duplicated in the database. Endemic species were based upon lists that were drafted by Birdlife International Stattersfield et al. (1998) and revised using recent knowledge of bird distributions and taxonomy (M. Herremans and M. Languy pers. comm.).

3.4 RESULTS

3.4.1 Species richness

A total of 1061 species of bird were identified as occurring in the 33 sites for which data were compiled. This is 52.3% of the total number of birds recorded for the mainland of Africa (total from WWF database). Virunga National Park has the highest number of birds with 706 species or 66.5% of the total number of birds from these sites in the Albertine Rift. Queen Elizabeth National Park with 596 species, and Itombwe Massif with 583 species, rank second and third (Table 3.1). Virunga National Park is thus the richest protected area for birds on the whole continent. Further research will separate these species into different categories such as migrants vs residents and various categories of habitat dependent species such that the lists reflect species that reproduce at the site rather than all birds seen.

3.4.2 Endemism

A total of 35 Albertine Rift endemic birds were identified with 6 eastern Zairian lowland endemic species (Table 3.2). These two endemic bird groups are contiguous when mapped (Stattersfield et al. 1998) and for this study we decided to combine both of them because some Albertine Rift endemic species also range into the medium altitude forests in the Ituri (M. Herremans – Tervuren database). The number of Albertine rift endemic species are two less than in Stattersfield et al. (1998) because *Muscicapa lendu* is present in Kakamega Forest in Kenya and *Sylvietta chapini*

is now considered to be a subspecies of *S. leucophrys*. Itombwe Massif has the highest number of endemic species (34) followed by Kahuzi Biega National Park (30) and Virunga National Park (27). Mbizi and Ufipa plateau have two endemic species from the Tanzania-Malawi Mountains Endemic Bird Area (*Cisticola nigricolis* and *Phyllastrephus alfredi*), however these two species were not incorporated in the analyses because they belong to another endemic bird region.

Table 3.1 The total number of species compiled, number of Albertine Rift (AR) endemic species, number of eastern Zairian lowland endemic species, number of threatened species and total number of IUCN listed species. Virunga Park is divided into five sectors due to its size and habitat types and numbers are given separately for each sector as well as the total.

Site	SPP no.	AR endemic species	E. Zairian lowland endemic species	Threatened CR,EN, VU	IUCN listed species
Murchison Falls NP	476	0	0	7	10
Budongo FR	362	0	0	1	2
Bugoma FR	221	0	0	1	2
Kagombe FR	121	0	0	0	0
Kitechura FR	90	0	0	0	0
Matiri FR	119	0	0	0	1
Itwara FR	183	0	0	0	0
Lendu plateau	317	6	0	4	6
Semliki WR	435	0	0	3	4
Semliki NP	441	2	5	9	11
Rwenzori Mountains NP	241	21	0	4	6
Kibale NP	327	3	0	3	3
Kasyoha-Kitomi FR	308	2	0	1	1
Kalinzu-Maramagambo FR	393	4	0	1	1
Kyambura WR	450	0	0	6	10
Queen Elizabeth	594	0	0	7	15
Bwindi Impenetrable NP	381	23	1	6	9
Mafuga FR	130	10	0	0	0
Echuya FR	136	14	0	2	2
Virunga Volcanoes	258	20	0	4	7
Virunga south	370	16	0	4	9
Virunga central	420	0	1	4	7
Virunga Rwenzori	103	13	0	0	1
Virunga north	515	9	1	3	8
Virunga Total	706	25	2	11	23
West of Lake Edward	420	25	0	11	17
Nyungwe NP	280	26	0	7	11
Kahuzi Biega NP	335	29	3	11	19
Idjwi	150	2	0	1	2
Kibira NP	211	21	0	7	9
Bururi FR	155	13	0	3	3
Lac Ruzizi	182	1	0	3	4
Itombwe Massif	583	30	4	15	30
Gombe NP	267	0	0	2	2
Mahale Mountains NP	250	2	0	1	2
Mt Kabobo	231	18	0	3	5
Mbizi/Ufipa	154	0	0	0	1
Marungu	282	1	0	0	3

Table 3.2 The endemic species of bird that occur in the Albertine Rift with their IUCN threatened species status (2000). IUCN threats: CR=Critically Endangered; EN=endangered; VU=vulnerable; DD=data deficient; NT=near threatened. AR=Albertine Rift endemic; EZL=Eastern Zaire Lowland endemic species.

Family	Species	Common name	IUCN	AR endemic
Phasianidae	*Francolinus nobilis*	Handsome Francolin		AR
Musophagidae	*Tauraco johnstoni*	Rwenzori Turaco		AR
Strigidae	*Glaucidium albertinum*	Albertine Owlet	VU	AR
Tytonidae	*Phodilus prigoginei*	Congo Bay Owl	EN	AR
Caprimulgidae	*Caprimulgus prigoginei*	Itombwe Nightjar	EN	AR
Caprimulgidae	*Caprimulgus ruwenzorii*	Rwenzori Nightjar		AR
Indicatoridae	*Indicator pumilio*	Dwarf Honeyguide	NT	AR
Eurylaimidae	*Pseudocalyptomena graueri*	African Green Broadbill	VU	AR
Paridae	*Parus fasciiventer*	Stripe-breasted Tit		AR
Timaliidae	*Kupeornis rufocinctus*	Red-collared Mountain Babbler	NT	AR
Timaliidae	*Kupeornis chapini*	Chapin's Mountain Babbler	NT	AR
Campephagidae	*Coracina graueri*	Grauer's Cuckoo Shrike	NT	AR
Pycnonotidae	*Chlorocichla prigoginei*	Prigogine's greenbul	EN	AR
Turdidae	*Alethe poliophrys*	Red-throated Alethe		AR
Turdidae	*Cossypha archeri*	Archer's Ground Robin		AR
Turdidae	*Zoothera tanganjicae*	Kivu Ground Thrush	NT	AR
Sylviidae	*Apalis argentea*	Kungwe Apalis	EN	AR
Sylviidae	*Apalis kaboboensis*	Kabobo Apalis	DD	AR
Sylviidae	*Apalis personata*	Montane Masked Apalis		AR
Sylviidae	*Apalis ruwenzori*	Collared Apalis		AR
Sylviidae	*Bradypterus graueri*	Grauer's Rush Warbler	EN	AR
Sylviidae	*Graueria vittata*	Grauer's Warbler		AR
Sylviidae	*Hemitesia neumanni*	Short-tailed/Neumann's Warbler		AR
Sylviidae	*Phylloscopus laetus*	Red-faced Woodland Warbler		AR
Muscicapidae	*Melaenornis ardesiacus*	Yellow-eyed Black Flycatcher		AR
Platysteiridae	*Batis diops*	Rwenzori Batis		AR
Prionopidae	*Prionops alberti*	Yellow-crested Helmet Shrike	VU	AR
Nectariniidae	*Cyanomitra alinae*	Blue-headed Sunbird		AR
Nectariniidae	*Nectarinia purpureiventris*	Purple-breasted Sunbird		AR
Nectariniidae	*Cinnyris regia*	Regal Sunbird		AR
Nectariniidae	*Cinnyris rockefelleri*	Rockefeller's Sunbird	VU	AR
Nectariniidae	*Cinnyris stuhlmanni*	Rwenzori Double-collared Sunbird		AR
Ploceidae	*Ploceus alienus*	Strange Weaver		AR
Estrildidae	*Cryptospiza jacksoni*	Dusky Crimson-wing		AR
Estrildidae	*Cryptospiza shelleyi*	Shelley's Crimson-wing	VU	AR
Apodidae	*Schoutedenapus schoutedeni*	Schouteden's swift	VU	EZL
Pycnonotidae	*Phyllastrephus lorenzi*	Sassi's Olive Greenbul	NT	EZL
Turdidae	*Zoothera oberlaenderi*	Oberlander's/Forest Ground Thrush	NT	EZL
Monarchidae	*Terpsiphone bedfordi*	Bedford's Flycatcher	NT	EZL
Ploceidae	*Ploceus aureonucha*	Golden-naped weaver	EN	EZL
Ploceidae	*Ploceus flavipes*	Yellow-legged weaver	VU	EZL

3.4.3 Threatened species

Two categories of IUCN-listed species were analysed: 1. threatened (including critically threatened, endangered and vulnerable) and 2. all IUCN-listed species (CR, EN, VU and lower risk and data deficient species. A total of 25 birds are threatened and 48 are IUCN-listed in the rift. Itombwe Massif has the highest number of threatened species (15) followed by three sites with 11 species: Virunga National Park, Kahuzi Biega National Park and the mountains west of Lake Edward. Itombwe Massif also has the largest number of IUCN-listed species (30) followed by Virunga Park (23) and Kahuzi Biega Park with 19 (Table 3.1).

3.4.4 Complementarity analysis

A complementarity analysis was made of the bird data set (33 sites). The analysis selected those sites with the highest number of endemic (Albertine Rift and Eastern Zaire Lowland) and IUCN-listed species initially, until all of these species had been selected, and then selected those sites that contributed the most number of additional species.

Itombwe Massif was selected first followed by Virunga National Park and Queen Elizabeth National Park. These three sites accounted for 82.8% of all bird species and 91.0% of endemic and threatened species respectively. Nine sites were necessary to protect all endemic and threatened large mammals in at least one site and 19 sites were required to capture all bird species (Table 3.3).

Not surprisingly the complementarity analyses select sites at both ends of the Albertine Rift (Lendu Plateau (north) and Mahale Mountains and Marungu (south)). What is interesting, however, is that both Virunga and Queen Elizabeth National Parks are selected before these other sites and yet these two national parks are contiguous. It is probable that with more surveys Virunga National Park will be found to contain many of the additional species that were added by Queen Elizabeth Park, which has been very intensively surveyed over the years.

Table 3.3 Results of the complementarity analysis indicating the minimum number of sites that together would maximise the number of birds protected. The three columns on the left show the order in which sites are selected until all endemic and IUCN-listed species are 'captured' by at least one site and the columns on the right show the additional sites needed to 'capture' all bird species.

Sites which added endemic/threatened birds			**Sites adding additional birds**		
Sites	Species added	ARE/IUCN added	Sites	Species added	ARE/IUCN added
Itombwe Massif	583	48	Murchison falls park	32	0
Virunga Park	220	11	Gombe park	13	0
Queen Elizabeth park	75	2	Kyambura WR	11	0
Marungu Massif	47	1	Mbizi/Ufipa	10	0
Lendu plateau	26	1	Budongo FR	4	0
Mahale mountains park	19	1	Rwenzori park	3	0
Semliki park	4	1	Lac Ruzizi	3	0
Mt Kabobo	3	1	W. Lake Edward	3	0
Idjwi	2	1	Semliki WR	2	0
			Nyungwe Forest	1	0

3.4.5 Cluster analyses

A cluster analysis was performed on the bird data set. As the Virunga Park is large and extends over several habitat types it was subdivided into 5 sectors (volcanoes, south, central, Rwenzori and northern sectors) and these five sectors were included in the cluster analyses.

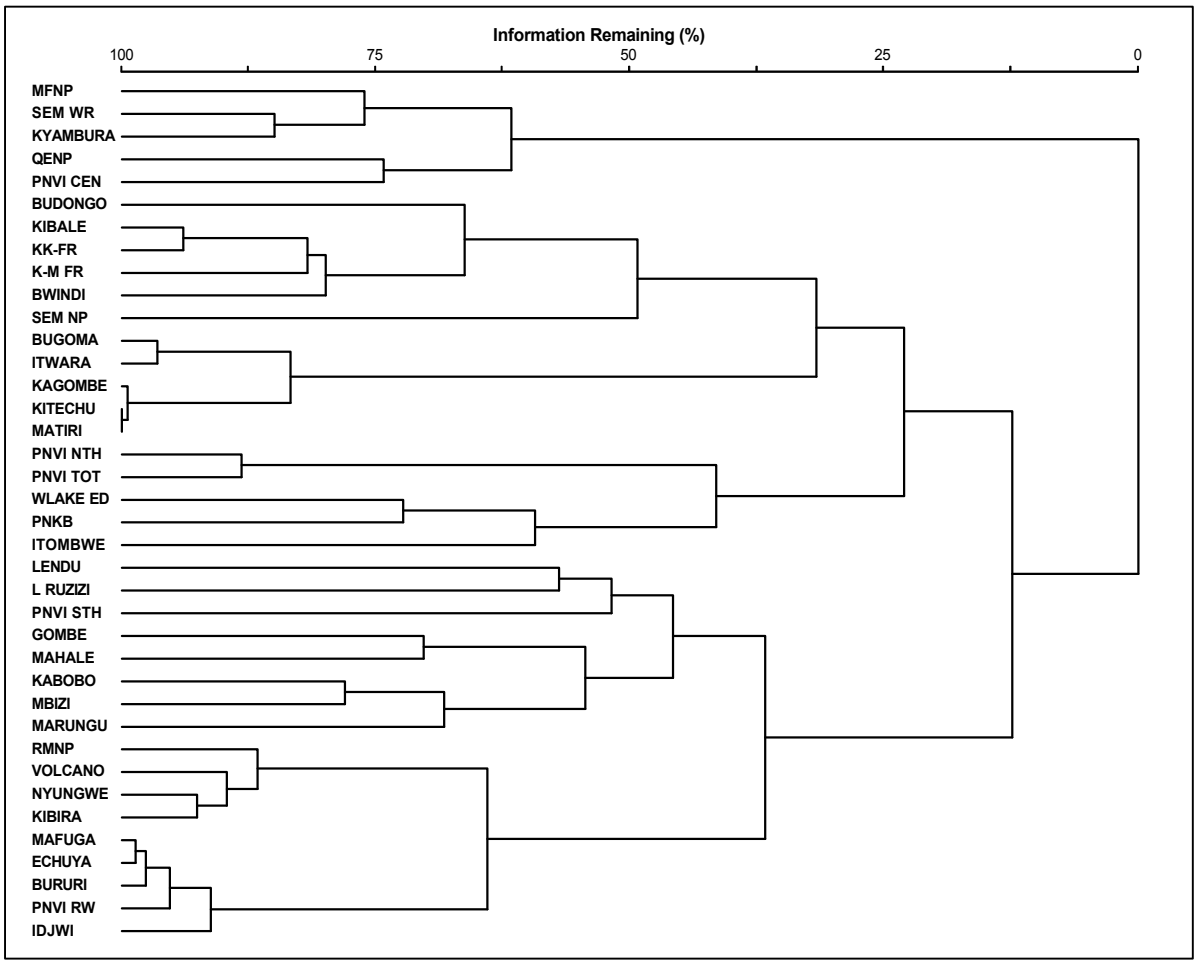


Figure 3.1 A cluster dendrogram for the bird data set. The Virunga Park (PNVi) is separated into five subsectors (Volcanoes, south – PNVi sth, central – PNVI cen, north – PNVI nth and Rwenzori – PNVI RW). MFNP=Murchison Falls park, QENP=Queen Elizabeth park, PNKB=Kahuzi Biega park, SEM=Semliki, KK=Kasyoha-Kitomi Forest Reserve, K-M=Kalinzu–Maramagambo forests, RMNP=Rwenzori mountains park.

The clusters group into six main groups (Fig. 3.1). These are: 1. the savanna areas in the centre and north of the rift (Murchison falls, Queen Elizabeth, Semliki and Kyambura Wildlife Reserves and central Virunga park); 2. Lower altitude forests in Uganda (Budongo, Kibale, Kasyoha-Kitomi, Kalinzu-Maramagambo, Semliki park and a bit of an outlier, Bwindi park); 3. Lower altitude forests that have been less intensively surveyed (Bugoma, Itwara, Kagombe, Kitechura, Matiri) – these would probably cluster more closely with group 2 with better data; 4. Forests in DRC in the central part of the rift (Virunga north, all Virunga park, Kahuzi Biega park and Itombwe Massif); 5. The drier savanna/woodland areas in DRC and Tanzania (Lendu plateau, Lac Ruzizi, Southern Virunga park, Gombe and Mahale parks, Mt Kabobo, Mbizi/Ufipa and Marungu Massif) and 6. The mountain forests (Rwenzori park,

Virunga volcanoes, Nyungwe forest, Kabira park, Mafuga, Echuya, Bururi and Idjwi forests with the Rwenzori sector of Virunga park.

3.5 Discussion

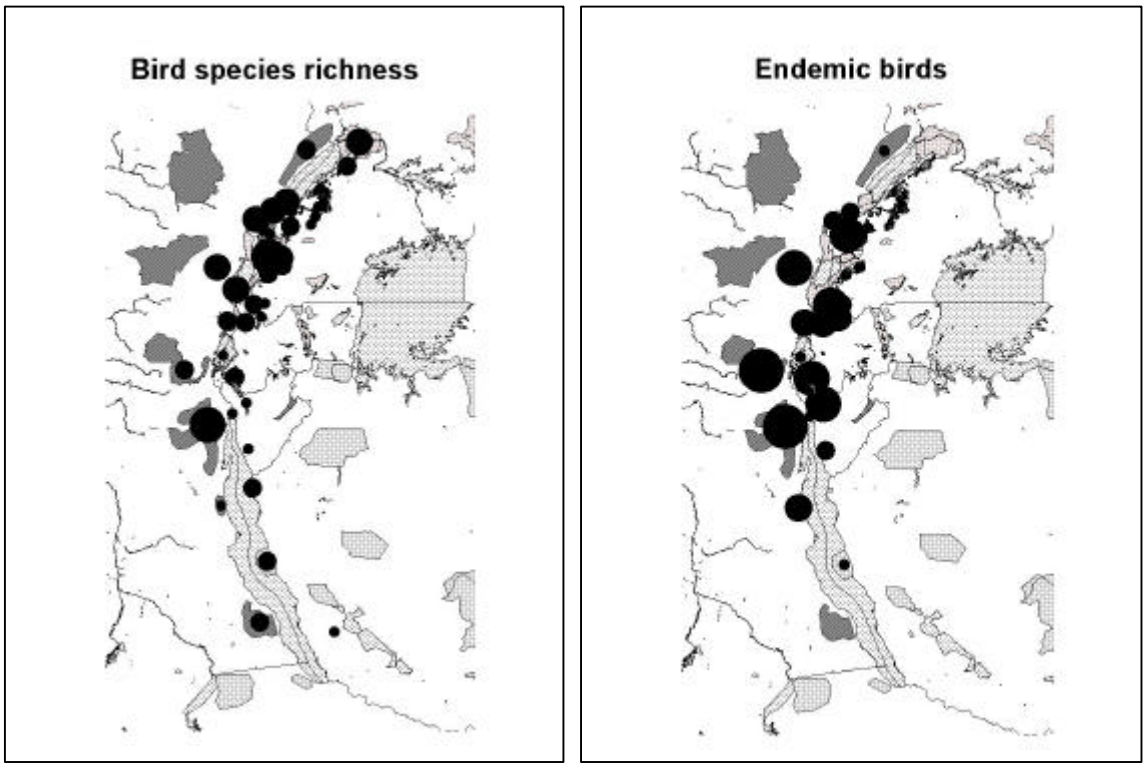
These results show that the Albertine Rift is incredibly rich in bird species. A total of 1061 species occur in this part of Africa of which 3.8% are endemic and 4.5% are IUCN-listed species (2.4% threatened). The data set for birds is a lot better than that for the mammals and we can be far more confident that the patterns shown here reflect the situation in reality. However, despite fairly intensive surveys in many of these sites in the rift it is clear that further effort would add more species to the list. For example, Queen Elizabeth National Park is selected immediately after Virunga Park in the complementarity analysis yet these two parks are connected and probably share most of their species. Queen Elizabeth has had much more attention from ornithologists, however, and therefore probably has a more complete list.

The cluster analyses show that Mahale, Gombe, Mt Kabobo, Mbizi/Ufipa and Marungu form a cluster of sites at the southern end of the rift. Apart from Mt Kabobo, these sites have few Albertine Rift endemic species because most endemic species are forest birds. The presence of these few species though has kept these sites as part of the Albertine Rift.

Itombwe Massif is the richest site for endemic species and threatened species and yet remains poorly surveyed and has no protected status. Prior to the recent fighting in DRC the Governor of south Kivu was interested in gazetting part of Itombwe under some form of protection and it is hoped this will be possible once peace is restored to the country. Virunga and Queen Elizabeth National Parks are very rich in bird diversity and are important migratory stopping points for birds coming from Europe. The diversity of habitats in these two parks is what contributes to the high bird species richness. Sites that need more survey work include Itombwe Massif, Mt Kabobo and Marungu Massif, the Lendu plateau (primarily to see what is left there) and some of the lower altitude forests in Uganda such as Bugoma and Itwara. The Mbizi forest/Ufipa plateau, Gombe and Mahale parks would probably be found to contain many more species if these were surveyed further also.

The endemic species are primarily found in the central part of the Albertine Rift (as outlined in fig. 1.1) and towards the western side of the rift, occurring down into medium altitude forest. There are endemic species found towards the Ituri forest, which is why figure 1.1 has the extension in the northwest that captures the extent of these species. Birds are probably the only taxa where we could confidently look at subspecies distributions (there is much greater controversy in the taxonomy of the other taxa at the subspecies level than in birds). Sites to the south would rank higher if subspecies were included.

Figure 3.2 summarises the results in GIS. Species richness is high around the central part of Virunga National Park and Queen Elizabeth National Park with another large circle on Itombwe Massif. Endemic species are generally found towards the central part of the Rift while threatened species seem to form two clusters; one around Nyungwe, Kahuzi Biega and Itombwe and another around Rwenzori and west of Lake Edward.



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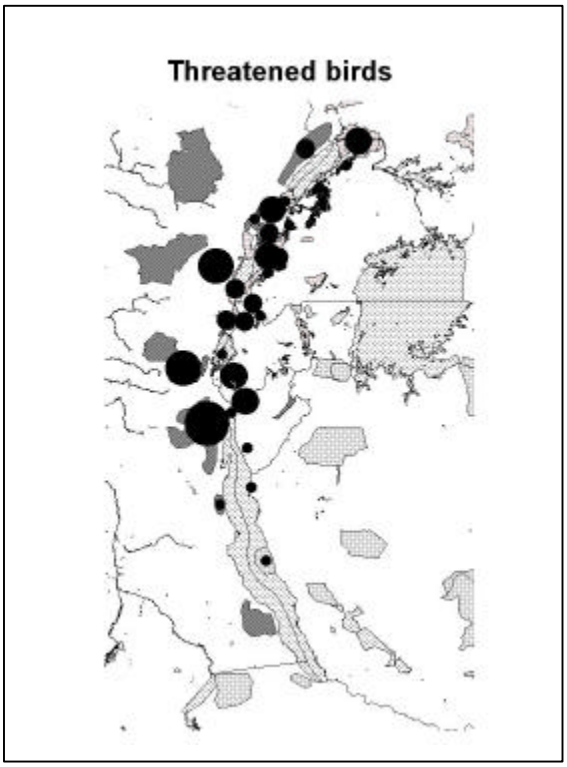

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Figure 3.2 A summary of the results for the bird data represented geographically. Each site that has non-zero data is represented by a circle of varying size depending on the number of species. a) bird species richness; b) endemic birds; c) threatened birds (CR, EN and VU).