

AVIFAUNA OF THE KATAVI-RUKWA ECOSYSTEM, TANZANIA

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ABSTRACT

We combined findings of an avian field survey conducted in 2003 with the efforts of other observers to develop a comprehensive species list for the Katavi-Rukwa ecosystem; a biologically rich area of western Tanzania. Our 2003 survey, during the dry season, yielded 222 species of birds, four of which had not been reported previously. In combination with other publications, field reports, and incidental observations we documented 458 species of birds occurring in this ecosystem. The confirmed presence of ten globally threatened species, 18 biome restricted species, one range restricted species (Tanzanian masked weaver *Ploceus reichardi*), and significant numbers of African skimmer (*Rynchops flavirostris*), a colonial waterbird, strongly reinforces the classification of the Katavi National Park as an Important Bird Area in Tanzania. A synopsis of species found in this area supports the view that the avifauna of the Katavi-Rukwa ecosystem is biogeographically affiliated with the Zambezi biome. These findings will provide a baseline for conservation, management, and future biodiversity and avian research efforts in the Katavi-Rukwa ecosystem.

Keywords: Tanzania, bird diversity, miombo, Zambezi biome, Important Bird Area

INTRODUCTION

Numerous conservation protocols have been developed, both regionally and globally, to establish criteria that can assist policy makers in creating or expanding protected areas (Borgerhoff Mulder

& Coppelillo, 2005). One programme aimed at identifying regions of importance for birds is Birdlife International's Important Bird Areas (IBAs). Through this programme, regional experts attempt to identify and establish a network of key sites for bird conservation that can help support regional and global biodiversity objectives (Bennun *et al.*, 2005). In Tanzania, 80 IBAs have been identified inside national parks and game reserves but also outside, in unprotected areas. Four IBA criteria are used to rank each region: the presence of globally threatened, restricted-range, biome restricted species, or major congregations of colonial waterbirds (Fishpool & Evans, 2001; Baker & Baker, 2002). Nonetheless, aside from frequently visited regions of Tanzania, our knowledge of species diversity in many of the designated IBAs still remains patchy and inadequate because baseline distributional data are unfortunately unknown or outdated (Balmford *et al.*, 2003). Indeed, several prominent ornithologists have argued that the most urgent data requirement for African bird conservation is distributional information (Brooks & Thompson, 2001; Brooks *et al.*, 2001; Bennun *et al.*, 2005; Evans *et al.*, 2006).

The Katavi ecosystem in western Tanzania was initially defined as the original Katavi National Park gazetted in 1974 (2253 km², Caro, 1999a) and the partially protected areas that surround it (Caro, 1999b). However, following the expansion of the Park to the southeast to encompass a total area of 4300 km², and following the creation of the Rukwa Game Reserve (4194 km²) both of which occurred in 1997, it is now called the Katavi-Rukwa ecosystem (Borgerhoff Mulder *et al.*, 2007; Banda *et al.*, 2008; Caro, 2008; Caro *et al.*, 2009). This conforms to the operational definition of the area used by the Tanzania Wildlife Research Institute (TAWIRI) aerial monitoring surveys that are centered on the expanded Katavi National Park and the Rukwa Game Reserve but also include Lwafi District Game Reserve to the southwest, Usevya Open Area to the south, Mlele Game Controlled Area to the east, and Msanginia Forest Reserve to the north and northeast of the Park (approximately 12 000 km² in area; see figure 1). Given the area covered in this study, the importance of using modern nomenclature, and the need to differentiate our study from previous avian studies in the area, we will term this area of Tanzania, the Katavi-Rukwa ecosystem. The configuration of different protected areas there creates a landscape protection mosaic that encompasses many interconnected habitats at the north end of Lake Rukwa in Mpanda District of Rukwa Region (Borgerhoff Mulder *et al.*, 2007).

In 2002, Birdlife International designated the original Katavi National Park as an Important Bird Area (Baker & Baker, 2002; Birdlife International, 2008a). However this designation was based on data limited to the original and smaller Katavi National Park and not to the recently enlarged park (expanded to the southeast) or to legally protected areas adjacent to the park, which provide a substantial level of conservation for avian resources (Gardner *et al.*, 2007). With the advent of increased tourism to the region and observation records shared via the internet, reports of bird observations from Katavi National Park have increased in recent years, but these have never been synthesized nor have systematic surveys been undertaken. The purpose of our research effort was to conduct systematic and repeatable bird surveys to document avian diversity in the central to northern part of the Katavi-Rukwa ecosystem and couple our findings with existing publications, data gathered by other observers, and unpublished species lists. We add important records from the south completed by Vesey-Fitzgerald & Beesley (1960) who documented 356 species and characterized the birds of the Rukwa Valley (appendix 1). Together, these sources allowed us to characterize the avifaunal diversity of the Katavi-Rukwa ecosystem and to garner additional support for conservation and land management needs of the region.

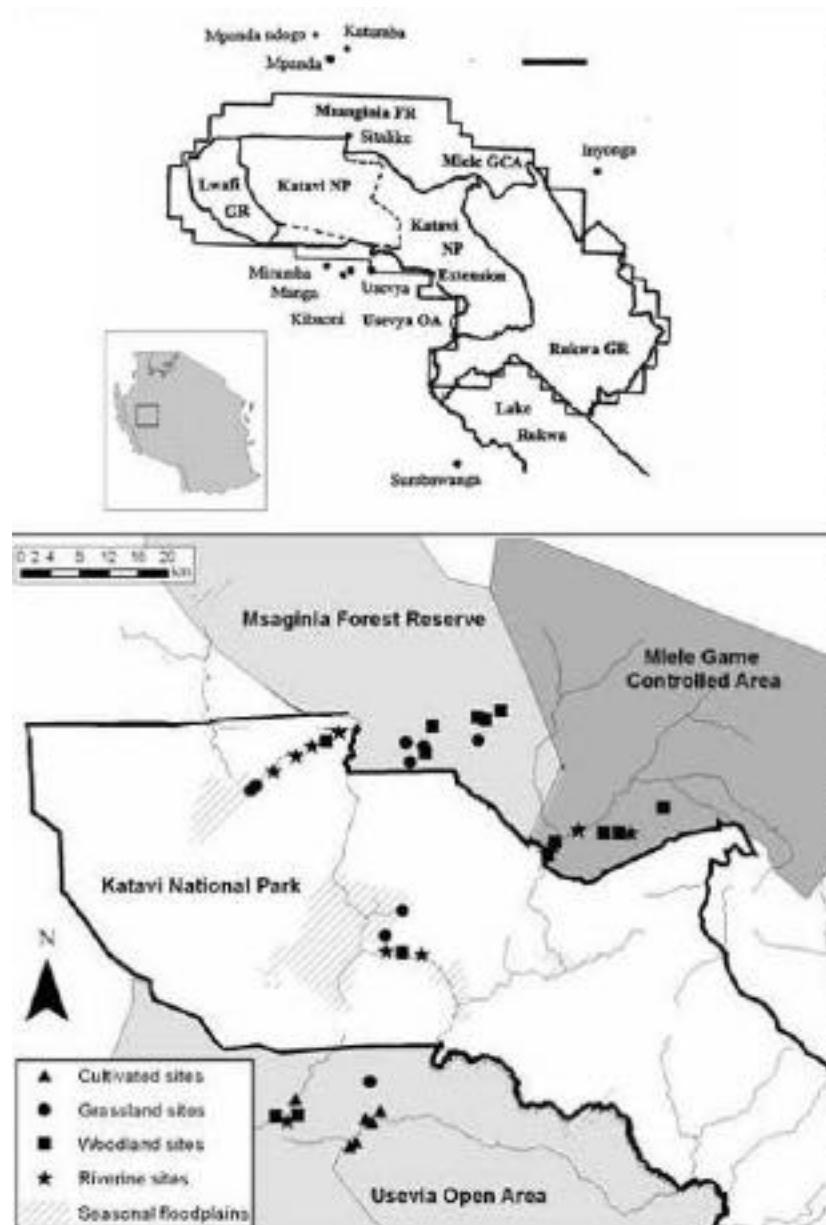


Figure 1. Location of study site across all four types of management areas in the Katavi-Rukwa ecosystem ($6^{\circ} 45'S-7^{\circ} 15'S$ and $30^{\circ} 45'E-31^{\circ} 25'E$). Local habitat type is indicated for each survey site ($n=38$). Adapted from Gardner et al. (2007) and Caro (2008).

MATERIAL AND METHODS

Description of study area

Our field portion of this study was performed during the dry season from 6 June–20 July 2003 in and around the new boundaries of Katavi National Park situated at an average

altitude of 900 m (figure 1). We worked in four legally designated areas, each with differing levels of land protection: within the now extended Katavi National Park that affords strict protection, in the adjacent Msaginia Forest Reserve that allows selective logging, in the adjacent Mlele Game Controlled Area where tourist hunting occurs, and in Usevya Open Area where all human activities are permitted (see Caro, 1999a; Borgerhoff Mulder *et al.*, 2007; see Caro *et al.* 2009 for detailed descriptions of activities permitted in these legally designated areas). The north-central part of the Katavi-Rukwa ecosystem, where we worked, is characterized by an unusual but now well documented kind of miombo vegetation dominated by *Terminalia sericea* Burch. ex DC., *Combretum adenogonium* Steud. ex A.Rich., and *C. collinum* Fresen rather than *Brachystegia*, *Julbernardia* or *Isoberlinia* (Banda *et al.*, 2006; 2008). The dry forest habitat is punctuated by large seasonally flooded lakes that are connected by seasonal rivers in the wet season and that become grassland plains in the dry season (Caro, 1999a,b). Rainfall is approximately 900 mm per annum.

Avian Surveys

The period between 6–18 June 2003 was used to gain familiarity with the avifauna prior to transect surveys that were coordinated by AEJ and conducted by PSL. Bird identification was aided by the field guide, *Birds of East Africa* (Stevenson & Fanshawe, 2002), and sound recordings (Chappuis, 2000). To help resolve unknown bird calls and songs, recordings were made using a portable tape recorder and a handheld microphone and were then compared to the recordings in Chappuis (2000). Care was taken to learn call notes and songs of specious groups such as Cisticolidae, Sylviidae, Muscicapidae, Nectariniidae, Ploceidae, and Estrildidae.

We conducted standardized multiple band-width transects at 38 different locations in the Katavi-Rukwa ecosystem between 18 June and 20 July and always between 07.00 and 10.30 hours. Temperature was fairly constant throughout the study period; moreover, cloud cover was scant and varied little. We followed standardized methods for establishing avian survey transect in woodlands as outlined by Bibby *et al.* (2000) and Ralph *et al.* (1993). At each location, PSL and TC established three 200 m line transects, making a total of 114 transects. Transects were at least 200 m apart to maximize the habitat diversity sampled and maintain sampling independence in this habitat (as demonstrated in Gardner *et al.*, 2007 and recommended by Ralph *et al.*, 1993). Thirty minutes was the duration used for each transect (fixed) and transects were walked at an even pace. Birds heard and observed were recorded in fixed bands of <25, 50, and 100 m; both sides of the walked line were counted for a total cross-section of 200 m along the length of the transect (Ralph *et al.*, 1993; Bibby *et al.*, 2000). We sampled a total length of 28.2 km and an area equivalent to 4.56 km². Each transect was sampled once and we recorded the location of each with a hand-held Garmin *Vista* GPS unit to allow for future visits (see figure 1 for locations; precise GPS coordinates available upon request). While ecological and abundance data were collected on transects, we only report on bird species diversity here; ecological data will be presented elsewhere. In addition to transects, timed area searches (totaling 24 hours) were performed in the general vicinity of transects (Ralph *et al.*, 1993). Incidental bird sightings were also noted opportunistically throughout the duration of our study and served as our primary method for sampling nocturnal species.

To complete our analysis of avian diversity, we examined published reports (Loveridge, 1933; Moreau, 1943; Ulfstrand & Lamprey, 1960; Vesey-FitzGerald & Beesley, 1960; Benson & Irwin, 1966; Britton, 1980), observation records from the Katavi-Rukwa Management Plan (compiled by park wardens), lists provided by Baker & Baker (2006) (some of the species presented by Baker and Baker were predicted; we included only those in our list that were vetted by regional experts), various reports, and field records from local

field ornithologists. Seasonal status was assigned to each species following Britton (1980). Baker & Baker (2002) and Birdlife International (2008a,b) were used as our primary references to address IBA designation and special status species.

The Ornithological Sub-Committee of the East Africa Natural History Society is preparing a revision to Britton (1980) but the current species list for Tanzania does not systematically address issues of nomenclature and systematics of birds from the region. In addition, African avian taxonomy remains in flux and there is no “agreed-upon” treatment for nomenclature. Therefore we have chosen to follow the *The Howard and Moore Complete Checklist of the Birds of the World* 3rd Edition (Dickenson, 2003) through the 7th corrigenda (Lepage, 2008) for nomenclature. This reference is internationally recognized and easily cross-referenced to other world treatments, modern field guides and Tanzanian checklists. Although the higher taxonomy is dated, and there are numerous changes in basic nomenclature, we provide the unique numbering system for taxa from *Birds of East Africa* (Britton, 1980) to facilitate cross-referencing.

RESULTS

We recorded 222 species during our survey (appendix 1). We recorded four species for the first time in the Katavi-Rukwa ecosystem (table 1). The pattern of species accumulation from our study showed that additions of new species had leveled off after 20 days indicating that most of the avian diversity across all our sites and during this particular period was sampled (figure 2). Combining our survey results with other research efforts yielded 458 species of birds in the Katavi-Rukwa ecosystem, of which 389 were resident and 69 were migratory (appendix 1). The latter group comprised 55 Palearctic and 14 intra-African migrants. Combining records from our survey, unpublished observations by other observers (see previous section) and the existing literature confirms that the Katavi-Rukwa ecosystem supports ten globally threatened species (category A1), and one range restricted species (category A2) (table 2a,b). In addition the region supports five Somali-Masai Biome restricted species and 15 Zambezian Biome restricted species (table 2c).

Table 1. New species records from June–July 2003 survey period, Katavi ecosystem.

Common Name	Scientific Name	Location/Habitat	Date
Eastern nicator ¹	<i>Nicator gularis</i> Hartlaub & Finsch, 1870	Msaginia Forest Reserve, dense thickets	19 July
Singing cisticola	<i>Cisticola catans</i> (Heuglin, 1869)	Katavi National Park, Jaribu Mtego, dense thicket, undergrowth	5 July
Rattling cisticola	<i>Cisticola chiniana</i> (A. Smith, 1843)	Msaginia Forest Reserve, <i>Mbuga, Brachystegia</i> woodland bordering <i>Acacia</i> savannah	24 June
African penduline tit	<i>Anthoscopus caroli</i> (Sharpe, 1871)	Katavi National Park, thickets next to cultivation	3 July

¹ (Vesey-FitzGerald & Beesley (1960) reported observing a species of *Nicator* that they identified as *N. chloris* Valenciennes 1826 (western nicator) in riverine thickets and escarpment woods [similar habitat as our observation])

Table 2. IBA Criteria Designation (Source: Baker & Baker, 2002; BirdLife International, 2008b).

2(a) IBA Category A1—Globally Threatened Species

Endangered:	
Madagascar pond-heron <i>Ardeola idae</i> Hartlaub 1860	Status: Confirmed by our observations, Baker & Baker (2006), and park wardens
Vulnerable:	
Lappet-faced vulture <i>Torgos tracheliotos</i> J.R. Forester 1791	Status: Confirmed by our observations, Vesey-FitzGerald & Beesley 1960, Baker & Baker (2006), and park wardens
Near Threatened:	
Lesser flamingo <i>Phoenicopus minor</i> (E. Geoffroy Saint-Hilaire, 1798)	Confirmed by numerous sources (e.g. Vesey-FitzGerald & Beesley, 1960, park wardens)
Denham's bustard <i>Neotis denhami</i> (Hartlaub, 1859)	Status: Reported in Vesey-FitzGerald & Beesley (1960) and recently confirmed by photos (P. Oliver) observed by P. Oliver & S. Evans (Dec. 2006)
Great snipe <i>Gallinago media</i> (Latham, 1787)	Status: Specimen collected (Vesey-FitzGerald & Beesley (1960); listed as observed by park wardens
European roller <i>Coracias garrulus</i> Linnaeus, 1758	Status: Confirmed by observations from Baker & Baker (2006) and park wardens
Pallid harrier <i>Circus macrourus</i> S. G. Gmelin, 1770	Status: Confirmed by observations from Vesey-FitzGerald & Beesley (1960), Baker & Baker (2006) and park wardens
Corn crane <i>Crex crex</i> Linnaeus, 1758	Status: Confirmed by Vesey-FitzGerald & Beesley (1960) and old observations from park wardens. There are no recent reports of this species from the region
[Stierling's woodpecker <i>Dendropicos stierlingi</i> Reichenow, 1901]	Status: Listed based on a single observation with no details (Baker & Baker, 2002). Status requires confirmation but is included to draw attention to the possible occurrence of this miombo specialist
African skimmer <i>Rynchops flavirostris</i> Vieillot, 1816	Status: Confirmed by observations from Vesey-FitzGerald & Beesley (1960), Baker & Baker (2006) and park wardens' list

2(b) IBA Category A2—Range Restricted Species

Tanzania masked weaver <i>Ploceus reichardi</i> Reichenow, 1886	Status: Confirmed by our observations
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2(c) IBA Category A3—Biome restricted species (Species confirmed by observations in the region—all sources).

Somali-Masai Biome:	
Von der Decken's hornbill	<i>Tockus deckeni</i> Cabanis, 1869
Crested barbet	<i>Trachyphonus vaillantii</i> Ranzani, 1821
Long-tailed fiscal	<i>Lanius cabanisi</i> E. Hartert, 1906
African grey flycatcher	<i>Melaenornis microrhynchus</i> Reichenow 1887
Purple grenadier	<i>Uraeginthus ianthinogaster</i> Reichenow 1879

Zambezi Biome:	
Dickinson's kestrel	<i>Falco dickinsoni</i> P. L. Sclater, 1864
Boehm's bee-eater	<i>Merops boehmi</i> Reichenow, 1882
Racket-tailed roller	<i>Coracias spatulatus</i> Trimen, 1880
Pale-billed hornbill	<i>Tockus pallidirostris</i> Hartlaub & Finsch, 1870
[Stierling's woodpecker]	<i>Dendropicos stierlingi</i> Reichenow 1901
Sousa's shrike	<i>Lanius souzae</i> Bocage, 1878
Miombo bearded scrub robin	<i>Cercotrichas barbata</i> Hartlaub & Finsch, 1870
Miombo rock-thrush	<i>Monticola angolensis</i> Sousa, 1888
White-headed black chat	<i>Myrmecocichla arnoti</i> Tristram, 1869
Kurrichane thrush	<i>Turdus libonyanus</i> A. Smith 1836
Long-tailed cisticola	<i>Cisticola angusticauda</i> Reichenow, 1891
Miombo wren-warbler	<i>Calamonastes undosus</i> Reichenow, 1882
Miombo grey tit	<i>Parus griseiventris</i> Reichenow, 1882
Rufous-bellied tit	<i>Parus rufiventris</i> Bocage, 1877
Miombo double-collared sunbird	<i>Cinnyris manoensis</i> Reichenow, 1907
Broad-tailed paradise-whydah	<i>Vidua obtuse</i> Chapin, 1922

2(d) IBA Category A4i-Colonial waterbirds

African skimmer	Status: Confirmed presence of over 300 birds present from wet period March–May (Baker & Baker, 2002). One hundred birds qualify a species in this IBA category (Fishpool & Evans, 2001)
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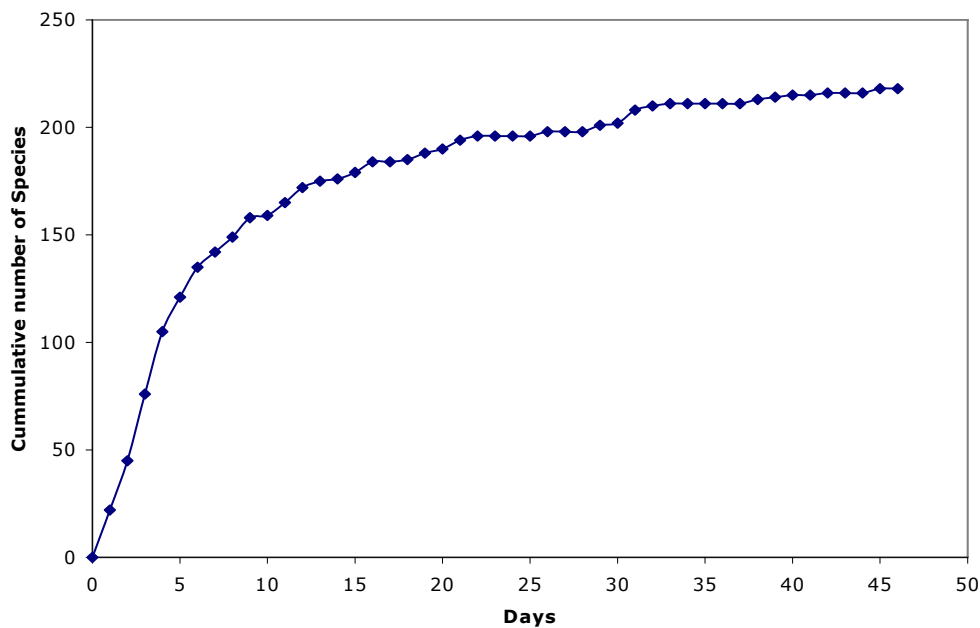


Figure 2. Species accumulation curve for birds seen during the June–July 2003 survey period. Includes number of species seen during transects, timed area searches and incidental surveys.

DISCUSSION

Writing about the original Katavi National Park, Baker & Baker (2002, p. 32) correctly predicted that, "this corner of south-western Tanzania is poorly known ornithologically. A preliminary checklist includes only 220 species but the list for the park is likely to exceed 400 species." This study documents a minimum total of 458 species of birds occurring in the Katavi-Rukwa ecosystem; which of course includes the original Park.

It has been known for some time that this remote area of Tanzania holds a great deal of avian diversity, but this diversity was never fully synthesized. Vesey-FitzGerald and Beesley (1960) provided an annotated list of birds (356 species) from the Rukwa Valley. Later, the Tanzanian Bird Atlas (2008) provided a list of 373 species from Katavi National Park mostly from records reported to the atlas through 2004. Our combined total of 458 species reveals that the area supports over 40% of the avifaunal diversity found in Tanzania (1108 species as reported by the Tanzania Bird Atlas, 2008). Taken alone or in combination, these reports of bird diversity from the Katavi-Rukwa ecosystem confirm that the area remains significant in the maintenance of East African avifauna. We speculate that the Katavi-Rukwa ecosystem's habitat heterogeneity: miombo woodland, seasonal floodplains, woodland edge, and seasonal and permanent rivers promote high avian diversity.

With 18 species, the Katavi-Rukwa ecosystem supports a high percentage (45%) of Zambezi Biome restricted birds (Category A3, table 2c) (see also Fishpool & Evans, 2001; Baker & Baker, 2002). This is close to the prediction that the area may harbour upwards of 50% of Zambezi Biome restricted species (as envisaged again correctly by Baker & Baker, 2002). Thus the Katavi-Rukwa ecosystem is second only to the nearby Ufipa Plateau IBA, to the west and south, (23 species reported) in supporting Zambezi Biome restricted avian species in Tanzania.

This assessment reveals that the area's avifauna is principally aligned with the Zambezi Biome. Two elements of the avifauna support this conclusion. First the Katavi-Rukwa ecosystem supports Zambezi Biome restricted, miombo bird species; seven miombo-endemic species (30% of the total described) and 15 miombo-facultative species (52% of the total described) (Benson & Irwin, 1966; Ulfstrand & Alerstam, 1977; Stjernstedt, 1970). Second, Moreau (1966a) documented a decrease of Palearctic migrants from 120 species to 56 species as one travels south from Kenya to the Zambezi Biome. We document, from all sources, 55 species of Palearctic migrants, very close to Moreau's figure.

Regarding our survey, and in line with most avifaunal assessments, some biases hindered efforts. In our case the surveys were conducted only during the day because nocturnal walks were dangerous given the large mammal abundance in this ecosystem (Caro, 1999b). Furthermore, our survey was restricted to the dry season when many water dependent and post-breeding birds have left the area. In addition, some species were undergoing moult during this period, a time when they remain secretive and silent. Given the season of this study, Palearctic species were expectedly scant (3 species observed). However, systematic surveys during the dry season were deemed essential because most records come from the region during the wet seasons, when bird numbers are higher. By filling this temporal gap in our knowledge of avian diversity, we were able to present a more complete picture of the overall avifauna. Increased visits and the use of the baseline checklist presented here will no doubt yield additional species records.

In conclusion, our survey and summary of available data confirm previous predictions that avian diversity and species composition meet IBA conservation criteria (Baker & Baker, 2002). It furthermore expands the species list and reinforces recognition of the Katavi-Rukwa

ecosystem as crucial for the maintenance of Tanzania's avifauna. Our study highlights the importance of conducting and documenting avian diversity in protected areas. Many sites in Africa's network of IBA's lack these fundamental data which hinders conservation planning (Brooks & Thompson, 2001; Fishpool *et al.*, 2005; Evans *et al.*, 2006). Given that avifaunal surveys in the Serengeti ecosystem in Tanzania and adjacent Kenya have shown an alarming trend in species and abundance declines in recent years (Campbell & Hofer, 1995; Sinclair *et al.*, 2002), it is important to carry out repeatable inventories of protected areas in order to track global changes in populations of bird species, to aid conservation efforts, and contribute to monitoring programmes of Africa's IBAs (Bennun, 2000; 2002; Bennun *et al.*, 2005; Evans *et al.*, 2006). Filling information gaps will also provide data-supported evidence that policy makers require in order to establish or enlarge new protected areas designated as IBAs (Brooks *et al.*, 2001), develop landscape habitat corridors (Jones *et al.*, 2009), or broaden protected lands adjoining existing reserves in Tanzania. For the Katavi-Rukwa ecosystem, consideration could be given to expand the IBA designation to encompass adjacent protected areas. In addition, understanding temporal dynamics of bird diversity in the Katavi-Rukwa ecosystem will be important for conservation planning and refining research questions to aid in long-term management (Borgerhoff Mulder *et al.*, 2007). We therefore advocate further systematic avian surveys particularly during the wet season to document changes in overall species diversity and abundance, to elucidate ecological patterns related to rainfall, and to improve our knowledge regarding the use of the Katavi-Rukwa ecosystem by Palaearctic migrants.

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Appendix 1. Species List for Katavi-Rukwa ecosystem, Tanzania. Nomenclature and taxonomy follows Dickenson (2003) through the 7th corrigenda (Lepage, 2008). The number preceding the common name refers to assigned numbers in Britton (1980). We include all records from our study = § and Vessey-FitzGerald & Beesley (1960) = (vb). Other notations following specific epithets denote references or sources for birds at the limits or beyond reported distributional ranges: bb = Baker & Baker (2002, 2006); br = Britton (1980); po=Paul Oliver sight record; se = Squack Evans sight record; w = park wardens' list; sp = specimen record. Species with multiple reports have no source notation. Species in [] have been reported but require confirmation.

Struthionidae

01 Ostrich *Struthio camelus* Linnaeus, 1758(vb)

Numididae

190 Helmeted Guineafowl *Numida meleagris* (Linnaeus, 1758) § (vb)

188 Crested Guineafowl *Guttera pucherani* (Hartlaub, 1860) (bb)

Phasianidae

170 Coqui Francolin *Francolinus coqui* (A. Smith, 1836)

176 Red-winged Francolin *Francolinus levallantii* (Valenciennes, 1825) (vb)

182 Crested Francolin *Francolinus sephaena* A. Smith, 1836

171 Hildebrandt's Francolin *Francolinus hildebrandti* Cabanis, 1878 § (vb)

167 Red-necked Francolin *Francolinus afer* (Statius Müller, 1776) § (vb)

165 Common Quail *Coturnix coturnix* (Linnaeus, 1758)

166 Harlequin Quail *Coturnix delegorguei* Delegorgue, 1847§ (vb)

Anatidae

60 White-faced Whistling-Duck *Dendrocygna viduata* (Linnaeus, 1766) § (vb)

59 Fulvous Whistling-Duck *Dendrocygna bicolor* (Vieillot, 1816) (vb)

82 White-backed Duck *Thalassornis leuconotus* Eyton, 1838 (vb)

80 Comb Duck *Sarkidiornis melanotos* Eyton, 1838§ (vb)

79 Spur-winged Goose *Plectropterus gambensis* Stephens 1824 § (vb)

61 Egyptian Goose *Alopochen aegyptiaca* (Linnaeus 1766) § (vb)

77 African Pygmy-Goose *Nettapus auritus* (Boddaert, 1783) (vb)

63 Cape Teal *Anas capensis* J.F. Gmelin, 1789(vb)

68 Eurasian Wigeon *Anas penelope* Linnaeus 1758 (vb)

70 African Black Duck *Anas sparsa* Eyton, 1838 (bb)

64 Northern Shoveler *Anas clypeata* Linnaeus 1758 (vb)

66 Red-billed Duck *Anas erythrorhyncha* J.F. Gmelin 1789 § (vb)

69 Garganey *Anas querquedula* Linnaeus, 1758 (vb)

67 Hottentot Teal *Anas hottentota* (Eyton, 1838) (vb)

76 Southern Pochard *Netta erythrophthalma* (Eyton, 1838) (vb)

Podicipedidae

04 Little Grebe *Tachybaptus ruficollis* (Pallas, 1764) (vb)

Phoenicopteridae

57 Lesser Flamingo *Phoenicopus minor* (E. Geoffroy Saint-Hilaire, 1798) (vb)

58 Greater Flamingo *Phoenicopus ruber* Linnaeus, 1758 (vb)

Ciconiidae

50 Yellow-billed Stork *Mycteria ibis* (Linnaeus, 1766) § (vb)

43 African Openbill *Anastomus lamelligerus* Temminck, 1823§ (vb)

44 Abdim's Stork *Ciconia abdimii* M.H.K. Lichtenstein, 1823 (vb)

46 Woolly-necked Stork *Ciconia episcopus* (Boddaert, 1783) (vb)

47 Black Stork *Ciconia nigra* (Linnaeus, 1758) (vb)

- 45 European White Stork *Ciconia ciconia* (Linnaeus, 1758) (vb)
 48 Saddle-bill Stork *Ephippiorhynchus senegalensis* (Shaw, 1800) § (vb)
 49 Marabou *Leptoptilos crumeniferus* (Lesson, 1831) § (vb)

Threskiornithidae

- 54 Sacred Ibis *Threskiornis aethiopicus* (Latham, 1790) § (vb)
 51 Hadada Ibis *Bostrychia hagedash* (Latham, 1790) § (vb)
 53 Glossy Ibis *Plegadis flacinellus* (Linnaeus, 1766) § (vb)
 55 African Spoonbill *Platelea alba* Scopoli, 1786 § (vb)

Ardeidae

- 24 Dwarf Bittern *Ixobrychus sturmii* (Wagler, 1827) (vb)
 22 Great Bittern *Botaurus stellaris* (Linnaeus, 1758) (br) (vb)
 40 Black-crowned Night-Heron *Nycticorax nycticorax* (Linnaeus, 1758) § (vb)
 33 Striated Heron *Butorides striata* (Linnaeus, 1758)
 30 Squacco Heron *Ardeola ralloides* (Scopoli, 1769) § (vb)
 29 Madagascar Pond Heron *Ardeola idae* (Hartlaub, 11860) §
 31 Rufous-bellied Heron *Ardeola rufiventris* (Sundevall, 1851)
 32 Cattle Egret *Bubulcus ibis* (Linnaeus, 1758) § (vb)
 25 Grey Heron *Ardea cinerea* Linnaeus, 1758 § (vb)
 27 Black-headed Heron *Ardea melanocephala* Vigors & Children, 1826 (vb)
 26 Goliath Heron *Ardea goliath* Cretzschmar, 1827 § (vb)
 28 Purple Heron *Ardea purpurea* Linnaeus, 1766 § (vb)
 34 Great Egret *Ardea alba* Linnaeus, 1758 § (vb)
 38 Intermediate Egret *Egretta intermedia* (A.E. Brehm, 1854) § (vb)
 35 Black Egret *Egretta ardesiaca* (Wagler, 1827) (vb)
 36 Little Egret *Egretta garzetta* (Linnaeus, 1766) § (vb)

Scopidae

- 42 Hammerkop *Scopus umbretta* J.F. Gmelin, 1789 § (vb)

Pelecanidae

- 11 Great White Pelican *Pelecanus onocrotalus* Linnaeus, 1758 § (vb)
 12 Pink-backed Pelican *Pelecanus rufescens* J.F. Gmelin, 1789 § (vb)

Phalacrocoracidae

- 17 Long-tailed Cormorant *Phalacrocorax africanus* (J.F. Gmelin, 1789) § (vb)
 18 Great Cormorant *Phalacrocorax carbo* (Linnaeus, 1758)

Anhingidae

- 19 Darter *Anhinga melanogaster* Pennant, 1769(vb)

Falconidae

- 163 African Pygmy Falcon *Polihierax semitorquatus* (A. Smith, 1836) (vb)
 156 Lesser Kestrel *Falco naumanni* Fleischer, 1818 (vb)
 161 Common Kestrel *Falco tinnunculus* Linnaeus, 1758
 147 Grey Kestrel *Falco ardosiaceus* Vieillot, 1823 § (vb)
 153 Dickinson's Kestrel *Falco dickinsoni* P.L. Sclater, 1864 (vb)
 150 Red-necked Falcon *Falco chicquera* Daudin, 1800 § (vb)
 162 Red-footed Falcon *Falco vespertinus* Linnaeus, 1766 (vb)
 146 Amur Falcon *Falco amurensis* Radde, 1863 (vb)
 151 Sooty Falcon *Falco concolor* Temminck, 1822
 160 Eurasian Hobby *Falco subbuteo* Linnaeus, 1758 (vb)
 152 African Hobby *Falco cuvieri* A. Smith, 1830
 148 Lanner Falcon *Falco biarmicus* Temminck, 1825 § (vb)
 158 Peregrine Falcon *Falco peregrines* Tunstall, 1771

Accipitridae

- 83 Secretary Bird *Sagittarius serpentarius* (J.F. Miller, 1779) (vb)
 144 Osprey *Pandion haliaetus* (Linnaeus, 1758)
 139 African Cuckoo-Hawk *Aviceda cuculoides* Swainson, 1837
 143 Bat Hawk *Macheiramphus alcinus* Bonaparte, 1850
 142 Black-shouldered Kite *Elanus caeruleus* (Vieillot, 1818) § (vb)
 138 Black Kite *Milvus migrans* (Boddaert, 1783) § (vb)
 137 African Fish Eagle *Haliaeetus vocifer* (Daudin, 1800) § (vb)
 84 Palm-nut Vulture *Gypohierax angolensis* (J.F. Gmelin, 1788) §
 88 Egyptian Vulture *Neophron percnopterus* (Linnaeus, 1758) (po)
 87 Hooded Vulture *Necrosyrtes monachus* (Temminck, 1823) § (vb)
 85 African White-backed Vulture *Gyps africanus* Salvadori, 1865 § (vb)
 86 Rüppell's Griffon *Gyps rueppellii* (A.E. Brehm, 1852) §
 89 Lappet-faced Vulture *Torgos tracheliotus* (J.R. Forster, 1791) § (vb)
 90 White-headed Vulture *Trigonoceps occipitalis* (Burchell, 1824) § (vb)
 100 Black-breasted Snake Eagle *Circaetus pectoralis* A. Smith, 1829 § (vb)
 98 Brown Snake Eagle *Circaetus cinereus* Vieillot, 1818 § (vb)
 101 Bateleur *Terathopius ecaudatus* (Daudin, 1800) § (vb)
 92 Western Marsh Harrier *Circus aeruginosus* (Linnaeus, 1758) (vb)
 95 African Marsh Harrier *Circus ranivorus* (Daudin, 1800) § (vb)
 93 Pallid Harrier *Circus macrourus* (S.G. Gmelin, 1770) (vb)
 94 Montagu's Harrier *Circus pygargus* (Linnaeus, 1758) (vb)
 96 African Harrier-Hawk *Polyboroides typus* A. Smith, 1829 § (vb)
 132 Dark Chanting Goshawk *Melierax metabates* Heuglin, 1861 §
 131 Gabar Goshawk *Micronisus gabar* (Daudin, 1800) § (vb)
 102 Shikra *Accipiter badius* (J.F. Gmelin, 1788) § (vb)
 107 African Little Sparrowhawk *Accipiter minullus* (Daudin, 1800) § (vb)
 129 Lizard Buzzard *Kaupifalco monogrammicus* (Temminck, 1823) (vb)
 122 Eurasian Buzzard *Buteo buteo* (Linnaeus, 1758)
 120 Augur Buzzard *Buteo augur* Rüppell, 1836 (vb)
 115 Lesser Spotted Eagle *Aquila pomarina* C.L. Brehm, 1831
 116 Tawny Eagle *Aquila rapax* (Temminck, 1828) § (vb)
 114 Steppe Eagle *Aquila nipalensis* Hodgson, 1833
 117 Verreaux's Eagle *Aquila verreauxii* Lesson, 1830 (vb)
 118 Wahlberg's Eagle *Hieraaetus wahlbergi* (Sundevall, 1851)
 128 African Hawk Eagle *Hieraaetus spilogaster* (Bonaparte, 1850) §
 127 Booted Eagle *Hieraaetus pennatus* (J.F. Gmelin, 1788)
 134 Martial Eagle *Polemaetus bellicosus* (Daudin, 1800) § (vb)
 130 Long-crested Eagle *Lophaetus occipitalis* (Daudin, 1800) § (vb)
 135 Crowned Hawk-Eagle *Stephanoaetus coronatus* (Linnaeus, 1766) (bb)

Otididae

- 220 White-bellied Bustard *Eupodotis senegalensis* (Vieillot, 1820)
 218 Black-bellied Bustard *Lissotis melanogaster* (Rüppell, 1835) (vb)
 221 Denham's Bustard *Neotis denhami* (Heuglin, 1863) (vb) (po)

Rallidae

- 208 African Rail *Rallus caerulescens* J.F. Gmelin, 1789 (vb)
 197 African Crane *Crex egregia* (W.K.H. Peters, 1854) (vb)
 196 Corn Crane *Crex crex* (Linnaeus, 1758) (vb) (w)
 201 Black Crane *Amaurornis flavirostra* (Swainson, 1837) (vb)
 207 Baillon's Crane *Porzana pusilla* (Pallas, 1776) (vb)
 204 Striped Crane *Aenigmatolimnas marginalis* (Hartlaub, 1857) (vb) (sp)
 203 Purple Swampphen *Porphyrio porphyrio* (Linnaeus, 1758) (vb)
 202 Allen's Gallinule *Porphyrio alleni* Thomson, 1842 (vb)
 199 Common Moorhen *Gallinula chloropus* (Linnaeus, 1758) (vb)

- 198 Lesser Moorhen *Gallinula angulata* Sundevall, 1851(vb)
215 Red-knobbed Coot *Fulica cristata* J. F. Gmelin, 1789 (vb)

Heliornithidae

- 216 African Finfoot *Podica senegalensis* (Vieillot, 1817) (Verheyen, reported in vb)

Gruidae

- 194 Grey Crowned Crane *Balearica regulorum* Reichenow, 1892 § (vb)
195 Wattled Crane *Bugeranus carunculatus* (J. F. Gmelin, 1789) (vb)

Turnicidae

- 193 Common Button Quail *Turnix sylvaticus* (Desfontaines, 1787) § (vb)

Burhinidae

- 290 Water Dikkop *Burhinus vermiculatus* (cabanis, 1868) § (vb)
287 Spotted Dikkop *Burhinus capensis* (M.H.K. Lichtenstein, 1823) (vb)

Recurvirostridae

- 282 Black-winged Stilt *Himantopus himantopus* (Linnaeus, 1758) § (vb)
283 Pied Avocet *Recurvirostra avosetta* Linnaeus, 1758 (vb)

Charadriidae

- 245 Long-toed Lapwing *Vanellus crassirostris* (Hartlaub, 1855) § (vb)
243 Blacksmith Lapwing *Vanellus armatus* (Burchell, 1822) § (vb)
249 Spur-winged Lapwing *Vanellus spinosus* (Linnaeus, 1758) § (vb)
246 Lesser Black-winged Lapwing *Vanellus lugubris* (Lesson, 1826) (vb)
244 Crowned Lapwing *Vanellus coronatus* (Boddaert, 1783) § (vb)
248 African Wattled Lapwing *Vanellus senegallus* (Linnaeus, 1766) (vb)
241 Grey Plover *Pluvialis squatarola* (Linnaeus, 1758) (vb)
238 Common Ringed Plover *Charadrius hiaticula* Linnaeus, 1758 (vb)
239 Three-banded Plover *Charadrius tricollaris* Vieillot, 1818 § (vb)
238 Kittlitz's Sand Plover *Charadrius pecuarius* Temminck, 1823 (vb)
230 Caspian Plover *Charadrius asiaticus* Pallas, 1773 (vb)

Rostratulidae

- 227 Greater Painted-Snipe *Rostratula benghalensis* (Linnaeus, 1758) (vb)

Jacanidae

- 226 Lesser Jacana *Microparra capensis* (A. Smith, 1839) (vb)
225 African Jacana *Actophilornis africanus* (J.F. Gmelin, 1789) § (vb)

Glareolidae

- 292 Temminck's Courser *Cursorius temminckii* Swainson, 1822 (vb)
296 Heuglin's Courser *Rhinoptilus cinctus* (Heuglin, 1863)
295 Violet-tipped Courser *Rhinoptilus chalcopterus* (Temminck, 1824) (vb)
300 Collared Pratincole *Glareola pratincola* (Linnaeus, 1766) § (vb)
297[Black-winged Pratincole *Glareola nordmanni* J.G. Fischer, 1842 (vb)

Scolopacidae

- 263 Great Snipe *Gallinago media* (Latham, 1787) (vb) (sp)
262 Common Snipe *Gallinago gallinago* (Linnaeus, 1758)
253 Eurasian Curlew *Numenius arquata* (Linnaeus, 1758) (vb)
259 Marsh Sandpiper *Tringa stagnatilis* (Bechstein, 1803) (vb)
257 Common Greenshank *Tringa nebularia* (Gunnerus, 1767) § (vb)
258 Green Sandpiper *Tringa ochropus* Linnaeus, 1758 § (vb)
256 Wood Sandpiper *Tringa glareola* Linnaeus, 1758 (vb)

- 252 Common Sandpiper *Actitis hypoleucos* (Linnaeus, 1758) (vb)
 267 Sanderling *Calidris alba* (Pallas, 1764) (vb)
 272 Little Stint *Calidris minuta* (Leisler, 1812) (vb)
 270 Curlew Sandpiper *Calidris ferruginea* (Pontoppidan, 1763) (vb)
 279 Ruff *Philomachus pugnax* (Linnaeus, 1758)

Laridae

- 306 Grey-headed Gull *Larus cirrocephalus* Vieillot, 1818 (vb)
 320 Gull-billed Tern *Sterna nilotica* J.F. Gmelin, 1789(br) (vb)
 317 Whiskered Tern *Chlidonias hybrida* (Pallas, 1811) § (vb)
 318 White-winged Black Tern *Chlidonias leucopterus* (Temminck, 1815) (vb)
 331 African Skimmer *Rynchops flavirostris* Vieillot, 1816 (vb)

Pteroclididae

- 334 Yellow-throated Sandgrouse *Pterocles gutturalis* A. Smith, 1836 § (vb)

Columbidae

- 341 Speckled Pigeon *Columba guinea* Linnaeus, 1758 (vb)
 339 African Olive Pigeon *Columba arquatrix* Temminck, 1809 (vb)
 337 Lemmon Dove *Columba larvata* Temminck, 1810
 348 Dusky Turtle Dove *Streptopelia lugens* (Rüppell, 1837)
 347 Mourning Collared Dove *Streptopelia decipiens* (Hartlaub & Finsch, 1870) § (vb)
 350 Red-eyed Turtle Dove *Streptopelia semitorquata* (Rüppell, 1837) § (vb)
 346 Ring-necked Dove *Streptopelia capicola* (Sundevall, 1857) § (vb)
 351 Laughing Dove *Streptopelia senegalensis* (Linnaeus, 1766) § (vb)
 356 Emerald-spotted Wood Dove *Turtur chalcospilos* (Wagler, 1827) § (vb)
 357 Tambourine Dove *Turtur tympanistria* (Temminck, 1810) (vb)
 345 Namaqua Dove *Oena capensis* (Linnaeus, 1766) § (vb)
 358 African Green Pigeon *Treron calva* (Temminck, 1808) § (vb)

Psittacidae

- 368 Brown-necked Parrot *Poicephalus robustus* (J.F. Gmelin, 1788) (vb)
 367 Brown Parrot *Poicephalus meyeri* (Cretzschmar, 1827) § (vb)

Musophagidae

- 382 Schalow's Turaco *Tauraco schalowi* (Reichenow, 1891) (vb)
 383 Purple-crested Turaco *Tauraco porphyreolophus* (Vigors, 1831) § (vb)
 375 Bare-faced Go-away-bird *Corythaixoides personatus* (Rüppell, 1842) § (vb)

Cuculidae

- 393 Jacobin Cuckoo *Clamator jacobinus* (Boddaert, 1783) (vb)
 394 Levaillant's Cuckoo *Clamator levaillantii* (Swainson, 1829) (vb)
 392 Great Spotted Cuckoo *Clamator glandarius* (Linnaeus, 1758) (vb)
 399 Red-chested Cuckoo *Cuculus solitarius* Stephans, 1815 § (vb)
 396 Black Cuckoo *Cuculus clamosus* Latham, 1802 (bb) (vb)
 395 Common Cuckoo *Cuculus canorus* Linnaeus, 1758 (vb)
 397 African Cuckoo *Cuculus gularis* Stephans, 1815 (vb)
 391 Klaas's Cuckoo *Chrysococcyx klaas* (Stephans, 1815) § (vb)
 389 African Emerald Cuckoo *Chrysococcyx cupreus* (Shaw, 1792) (vb)
 388 Dideric Cuckoo *Chrysococcyx caprius* (Shaw, 1792) § (vb)
 403 African Black Coucal *Centropus grillii* Hartlaub, 1861 (vb)
 402 Coppery-tailed Coucal *Centropus cupreicaudus* Reichenow, 1896 (vb)
 406 White-browed Coucal *Centropus superciliosus* Hemprich & Ehrenberg, 1833 § (vb)

Tytonidae

- 407 Barn Owl *Tyto alba* (Scopoli, 1769) (vb)
408 Grass Owl *Tyto capensis* (A. Smith, 1834) (vb) (br)

Strigidae

- 424 African Scops-Owl *Otus senegalensis* (Swainson, 1837) § (vb)
422 Northern White-faced Owl *Ptilopsis leucotis* (Temminck, 1820) §
412 Spotted Eagle-Owl *Bubo africanus* (Temminck, 1821) § (vb)
414 Verreaux's Eagle-Owl *Bubo lacteus* (Temminck, 1820) § (vb)
425 Pel's Fishing Owl *Scotopelia peli* (Bonaparte, 1850)
419 Pearl-spotted Owlet *Galucidium perlatum* (Vieillot, 1817) § (vb)
417 African Barred Owlet *Galucidium capense* (A. Smith, 1834) (vb)
409 Marsh Owl *Asio capensis* (A. Smith, 1834) (vb)

Caprimulgidae

- 430 European Nightjar *Caprimulgus europaeus* (Linnaeus, 1758) (vb)
436 Fiery-necked Nightjar *Caprimulgus pectoralis* Cuvier, 1816 §
439 Freckled Nightjar *Caprimulgus tristigmata* Rüppell, 1840 (vb)
431 Mozambique Nightjar *Caprimulgus fossii* Hartlaub, 1857 (vb)
441 Pennant-winged Nightjar *Macrodipteryx vexillarius* (Gould, 1838) (vb)

Apodidae

- 452 African Palm Swift *Cypsiurus parvus* (M.H.K. Lichtenstein, 1823) § (vb)
449 Alpine Swift *Tachymarptis melba* (Linnaeus, 1758) (vb)
444 Common Swift *Apus apus* (Linnaeus, 1758) (vb)
443 Little Swift *Apus affinis* (J.E. Gray, 1830) (vb)
447 White-rumped Swift *Apus caffer* (M.H.K. Lichtenstein, 1823) § (vb)

Coliidae

- 459 Speckled Mousebird *Colius striatus* J. F. Gmelin, 1789 (vb)
461 Blue-naped Mousebird *Urocolius macrourus* (Linnaeus, 1766) § (vb)

Trogonidae

- 462 Narina's Trogon *Apaloderma narina* (Stephens, 1815)

Coraciidae

- 498 Rufous-crowned Roller *Coracias naevius* Daudin, 1800
499 Racket-tailed Roller *Coracias spatulatus* Trimen, 1880 § (vb)
496 Lilac-breasted Roller *Coracias caudatus* (Linnaeus, 1766) § (vb)
497 European Roller *Coracias garrulus* (Linnaeus, 1758) (vb)
500 Broad-billed Roller *Eurystomus glaucurus* (Statius Müller, 1776) (vb)

Alcedinidae

- 473 Grey-headed Kingfisher *Halcyon leucocephala* (Statius Müller, 1776) § (vb)
470 Brown-hooded Kingfisher *Halcyon albiventris* (Scopoli, 1786) § (vb)
472 Striped Kingfisher *Halcyon chelicuti* (Stanley, 1814) (vb)
475 Woodland Kingfisher *Halcyon senegalensis* (Linnaeus, 1766) § (vb)
478 African Pygmy Kingfisher *Ceyx pictus* (Boddaert, 1783) (vb)
466 Malachite Kingfisher *Alcedo cristata* Pallas, 1764 § (vb)
461 Half-collared Kingfisher *Alcedo semitorquata* Swainson, 1823
464 Giant Kingfisher *Megaceryle maxima* (Pallas, 1769) § (vb)
465 Pied Kingfisher *Ceryle rudis* (Linnaeus, 1758) § (vb)

Meropidae

- 485 Swallow-tailed Bee-eater *Merops hirundineus* A.A.H. Lichtenstein, 1793 (vb)
491 Little Bee-eater *Merops pusillus* Statius Müller, 1776 § (vb)

- 494 Blue-breasted Bee-eater *Merops variegatus* Vieillot, 1817 (vb) (br)
 482 White-fronted Bee-eater *Merops bullockoides* A. Smith, 1834 (vb)
 481 Böhm's Bee-eater *Merops boehmi* Reichenow, 1882 §
 490 Blue-cheeked Bee-eater *Merops persicus* Pallas, 1773 (vb)
 493 Madagascar Bee-eater *Merops superciliosus* Linnaeus, 1766
 480 European Bee-eater *Merops apiaster* Linnaeus, 1758 (vb)
 487 Southern Carmine Bee-eater *Merops nubicus nubicoides* Des Murs § Pucheran § (vb)

Upupidae

- 502 Common Hoopoe *Upupa epops* (Linnaeus, 1758) § (vb)

Phoeniculidae

- 508 Green Wood-hoopoe *Phoeniculus purpureus* (J.F. Miller, 1784) § (vb)
 505 Common Scimitarbill *Rhinopomastus cyanomelas* (Vieillot, 1819) § (vb)
 507 Abyssinian Scimitarbill *Rhinopomastus minor* (Rüppell, 1845) (bb)

Bucerotidae

- 515 Crowned Hornbill *Tockus alboterminatus* (Büttikofer, 1889) § (vb)
 524 African Grey Hornbill *Tockus nasutus* (Linnaeus, 1766) § (vb)
 518 Red-billed Hornbill *Tockus erythrorhynchus* (Temminck, 1823) § (vb)
 517 Von der Decken's Hornbill *Tockus deckeni* (Cabanis, 1869)
 510 Trumpeter Hornbill *Bycanistes bucinator* (Temminck, 1824) § (vb)

Bucorvidae

- 528 Southern Ground-Hornbill *Bucorvus leadbeateri* (Vigors, 1825) § (vb)

Ramphastidae

- 549 Yellow-fronted Tinkerbird *Pogoniulus chrysoconus* (Temminck, 1832)
 539 Spot-flanked Barbet *Tricholaema lachrymosa* Cabanis, 1878 (vb)
 546 Black-collared Barbet *Lybius torquatus* (Dumont, 1816) § (vb)
 543 Black-backed Barbet *Lybius minor* (Cuvier, 1816)
 560 Crested Barbet *Trachyphonus vaillantii* Ranzani, 1821 (vb)

Indicatoridae

- 573 Wahlberg's Honeybird *Prodotiscus regulus* Sundevall, 1850 §
 566 Lesser Honeyguide *Indicator minor* Stephens, 1815 § (vb)
 569 Scaly-throated Honeyguide *Indicator variegatus* Lesson, 1830 §
 563 Greater Honeyguide *Indicator indicator* (Sparrman, 1777) § (vb)

Picidae

- 579 Bennett's Woodpecker *Campethera bennettii* (A. Smith, 1836) § (vb)
 583 Nubian Woodpecker *Campethera nubica* (Boddaert, 1783) (vb)
 578 Golden-tailed Woodpecker *Campethera abingoni* (A. Smith, 1836) (vb)
 580 Green-backed Woodpecker *Campethera cailliautii* (Malherbe, 1849) §
 585 Cardinal Woodpecker *Dendropicos fuscescens* (Vieillot, 1818) § (vb)
 594 Bearded Woodpecker *Dendropicos namaquus* (A.A.H. Lichtenstein, 1793) § (vb)
 [588 Stierling's Woodpecker *Dendropicos stierlingi* Reichenow, 1901 (bb)]
 591 Olive Woodpecker *Dendropicos griseocephalus* (Boddaert, 1783)

Eurylaimidae

- 596 African Broadbill *Smithornis capensis* (A. Smith, 1840) (vb) (br)

Pittidae

- 598 African Pitta *Pitta angolensis* Vieillot, 1816 (vb) (br)

Platysteiridae

951 Chinspot Batis *Batis molitor* (Küster, 1850) (vb)

Malaconotidae

1043 White Helmet-Shrike *Prionops plumatus* (Shaw, 1809) § (vb)

1045 Retz's Helmet-Shrike *Prionops retzii* Whalberg, 1856 § (vb)

1012 Grey-headed Bush Shrike *Malaconotus blanchoti* Stephens, 1826 § (vb)

1019 Orange-breasted Bush Shrike- *Chlorophoneus sulfureopectus* (Lesson, 1831) § (vb)

1024 Blackcap Bush Shrike *Bocagia minuta* (Hartlaub, 1858) §

1022 Brown-crowned Tchagra *Tchagra australis* (A. Smith, 1836) § (vb)

1025 Black-crowned Tchagra *Tchagra senegalus* (Linnaeus, 1766) § (vb)

999 Black-backed Puffback *Dryoscopus cubla* (Shaw, 1809) § (vb)

1006 Slate-coloured Boubou *Laniarius funebris* (Hartlaub, 1863) § (vb)

1004 Tropical Boubou *Laniarius aethiopicus* (J.F. Gmelin, 1789) § (vb)

1020 Brubru *Nilaus afer* (Latham, 1802) § (vb)

Campephagidae

695 White-breasted Cuckoo-Shrike *Coracina pectoralis* (Jardine & Selby, 1828) § (vb)

688 Black Cuckoo-Shrike *Campephaga flava* Vieillot, 1817 § (vb)

Laniidae

1027 Magpie Shrike *Urolestes melanoleucus* (Jardine, 1831) § (vb)

1041 White-crowned Shrike *Eurocephalus rueppelli* Bonaparte, 1853 § (vb)

1040 Souza's Shrike *Lanius souzae* Bocage, 1878

1030 Red-backed Shrike *Lanius collurio* Linnaeus, 1758 (vb)

1034 Isabelline Shrike *Lanius isabellinus* Hemprich & Ehrenberg, 1833

1036 Lesser Grey Shrike *Lanius minor* (J.F. Gmelin, 1788) (vb)

1032 Grey-backed Fiscal *Lanius excubitoroides* Prévost & Des Murs, 1847 § (vb)

1029 Fiscal Shrike *Lanius collaris* Linnaeus, 1766

Oriolidae

651 Eurasian Golden Oriole *Oriolus oriolus* (Linnaeus, 1758) (vb)

646 African Golden Oriole *Oriolus auratus* Vieillot, 1817 § (vb)

649 Eastern Black-headed Oriole *Oriolus larvatus* M.H.K. Lichtenstein, 1823 § (vb)

Dicruridae

644 Fork-tailed Drongo *Dicrurus adsimilis* (Bechstein, 1794) § (vb)

Monarchidae

968 African Paradise-Flycatcher *Terpsiphone viridis* (Statius Müller, 1776) § (vb)

Corvidae

654 Pied Crow *Corvus albus* Statius Müller, 1776 § (vb)

653 White-necked Raven *Corvus albicollis* Latham, 1790 (vb)

Paridae

661 White-bellied Black Tit *Parus albiventris* Shelley, 1881 (vb)

667 Rufous-bellied Tit *Parus rufiventris* Bocage, 1877

665 Miombo Grey Tit *Parus griseiventris* Reichenow, 1882

Remizidae

668 African Penduline Tit *Anthoscopus caroli* (Sharpe, 1871) §

Hirundinidae

639 White-headed Saw-wing *Psalidoprocne albiceps* P.L. Sclater, 1864

640 Black Saw-wing *Psalidoprocne prisopectera* (Rüppell, 1836)

- 642 Plain Martin *Riparia paludicola* (Vieillot, 1817)
 643 Sand Martin *Riparia riparia* (Linnaeus, 1758) (vb)
 641 Banded Martin *Riparia cincta* (Boddaert, 1783) (vb)
 634 Barn Swallow *Hirundo rustica* Linnaeus, 1758 (vb)
 637 Wire-tailed Swallow *Hirundo smithii* Leach, 1818 § (vb)
 632 Rock Martin *Ptyonoprogne fuligula* (M.H.K. Lichtenstein, 1842)
 623 Common House Martin *Delichon urbicum* (Linnaeus, 1758) (vb)
 624 Lesser Striped Swallow *Cecropsis abyssinica* (Guérin-Méneville, 1843) § (vb)
 636 Mosque Swallow *Cecropsis senegalensis* (Linnaeus, 1766) § (vb)
 630 Red-rumped Swallow *Cecropsis daurica* (Laxmann, 1769)

Alaudidae

- 614 White-tailed Bush-Lark *Mirafra albicauda* Reichenow, 1891 (vb)
 621 Flappet Lark *Mirafra rufocinnamomea* (Salvadori, 1865) §
 605 Fischer's Sparrow-Lark *Eremopterix leucopareia* (Fischer & Reichenow, 1884) (vb)

Cisticolidae

- 857 Red-faced Cisticola *Cisticola erythrops* (Hartlaub, 1857) § (vb)
 852 Singing Cisticola *Cisticola cantans* (Heuglin, 1896) §
 873 Trilling Cisticola *Cisticola woosnami* Ogilvie-Grant, 1908 §
 854 Rattling Cisticola *Cisticolsa chiniana* (A. Smith, 1843) §
 860 Winding Cisticola *Cisticola galactotes* (Temminck, 1821) § (vb)
 866 Croaking Cisticola *Cisticola natalensis* (A. Smith, 1843) (vb)
 850 Short-winged Cisticola *Cisticola brachypterus* (Sharpe, 1870) (vb) (sp)
 859 Long-tailed Cisticola *Cisticola angusticauda* Reichenow, 1891 §
 862 Zitting Cisticola *Cisticola juncidis* (Rafinesque, 1810) § (vb)
 913 Tawny-flanked Prinia *Prinia subflava* (J.F. Gmelin, 1789) § (vb)
 902 Buff-bellied Warbler *Phyllolais pulchella* (Cretzschmar, 1827) §
 818 Yellow-breasted Apalis *Apalis flavida* (Strickland, 1852) § (vb)
 837 Bleating Warbler *Camaroptera brachyura* (Vieillot, 1820) § (vb)
 839 Miombo Wren-Warbler *Calamonastes undosus* (Reichenow, 1882) §

Pycnonotidae

- 732 Common Bulbul *Pycnonotus barbatus* (Desfontaines, 1789) § (vb)
 710 Yellow-bellied Greenbul *Chlorocichla flaviventris* (A. Smith, 1834) § (vb)
 730 Terrestrial Brownbul *Phyllastrephus terrestris* Swainson, 1837 (vb)
 720 Cabanis's Greenbul *Phyllastrephus cabanisi* (Sharpe, 1881) §
 721 Grey-olive Greenbul *Phyllastrephus cerviniventris* (Shelley, 1894) (vb)

Genus Sedis Incertae

- 716 Eastern Nicator *Nicator gularis* Hartlaub & Finsch, 1870 § (vb)

Sylviidae

- 914 Fan-tailed Grassbird *Schoenicola brevirostris* (Sundevall, 1850) (vb)
 915 Moustached Grass Warbler *Melocichla mentalis* (Fraser, 1843) § (vb)
 807 Lesser Swamp Warbler *Acrocephalus gracilirostris* (Hartlaub, 1864) (vb)
 805 Great Reed Warbler *Acrocephalus arundinaceus* (Linnaeus, 1758) (vb)
 811 Sedge Warbler *Acrocephalus schoenobaenus* (Linnaeus, 1758) (vb)
 806 African Reed Warbler *Acrocephalus baeticatus* (Vieillot, 1817) (vb)
 809 Marsh Warbler *Acrocephalus palustris* (Bechstein, 1798) (vb)
 888 Olivaceous Warbler *Iduna pallida* (Hemprich & Ehrenberg, 1833) (vb)
 885 Icterine Warbler *Hippolais icterina* (Vieillot, 1817) (vb)
 843 African Yellow Warbler *Chloroptera natalensis* A. Smith, 1847
 891 Yellow-bellied Hyliota *Hyliota flavigaster* Swainson, 1837 §
 908 Willow Warbler *Phylloscopus trochilus* (Linnaeus, 1758)
 907 Wood Warbler *Phylloscopus sibilatrix* (Bechstein, 1793)

- 880 Green-capped Eremomela *Eremomela scotops* Sundevall, 1850 §
 925 Red-faced Crombec *Sylvietta whytii* (Shelley, 1894) § (vb)
 920 Greater Whitethroat *Sylvia communis* Latham, 1787(vb)

Timaliidae

- 683 Black-lored Babbler *Turdoides sharpei* (Reichenow, 1891) § (vb)
 681 Arrow-marked Babbler *Turdoides jardineii* (A. Smith, 1836) § (vb)

Zosteropidae

- 1133 African Yellow White-eye *Zosterops senegalensis* Bonaparte, 1850 (vb)

Certhiidae

- 670 Spotted Creeper *Salpornis spilonotus* (Franklin, 1831) (bb) (w)

Sturnidae

- 1052 Wattled Starling *Creatophora cinerea* (Meuschen, 1787) § (vb)
 1055 Greater Blue-eared Starling *Lamprotornis chalybaeus* Hemprich & Ehrenberg, 1828 § (vb)
 1056 Southern Blue-eared Starling *Lamprotornis elisabeth* (Stresemann, 1924) §
 1048 Violet-backed Starling *Cinnyricinclus leucogaster* (Boddaert, 1783) (vb)
 1064 Red-winged Starling *Onychognathus morio* (Linnaeus, 1766) § (vb)
 1078 Red-billed Oxpecker *Buphagus erythrorhynchus* (Stanley, 1814) § (vb)
 1077 Yellow-billed Oxpecker *Buphagus africanus* (Linnaeus, 1766) § (vb)

Turdidae

- 798 Kurrichane Thrush *Turdus libonyanus* (A. Smith, 1836) §

Muscicapidae

- 751 White-browed Robin-Chat *Cossypha heuglini* Hartlaub, 1866 § (vb)
 752 Red-capped Robin Chat *Cossypha natalensis* A. Smith, 1840 (vb)
 747 Collared Palm-Thrush *Cichladusa arquata* W.K.H. Peters, 1863 § (vb)
 748 Spotted Palm-Thrush *Cichladusa guttata* (Heuglin, 1862)
 741 Miombo Bearded Scrub Robin *Cercotrichas barbata* (Hartlaub & Finsch, 1870) §
 744 White-browed Scrub Robin *Cercotrichas leucophrys* (Vieillot, 1817) §
 784 Common Stonechat *Saxicola torquatus* (Linnaeus, 1776) (vb)
 778 Capped Wheatear *Oenanthe pileata* (J.F. Gmelin, 1789) (vb)
 777 European Wheatear *Oenanthe oenanthe* (Linnaeus, 1758) (vb)
 738 Familiar Chat *Cercomela familiaris* (Stephens, 1826)
 791 White-headed Black Chat *Myrmecocichla arnotti* (Tristram, 1869) §
 767 Miombo Rock Thrush *Monticola angolensis* Sousa, 1888 (vb)
 935 Southern Black Flycatcher *Melaenornis pammelaina* (Stanley, 1814) (vb)
 928 Pale Flycatcher *Melaenornis pallidus* (J.W. von Müller, 1851) § (vb)
 927 African Grey Flycatcher *Melaenornis microrhynchus* (Reichenow, 1887) § (vb)
 945 Spotted Flycatcher *Muscicapa striata* (Pallas, 1764) (vb)
 938 Ashy Flycatcher *Muscicapa caerulea* (Hartlaub, 1865) § (vb)
 936 African Dusky Flycatcher *Muscicapa adusta* (Boie, 1828)
 946 Grey Tit-Flycatcher *Myioparus plumbeus* (Hartlaub, 1858) (vb)

Nectariniidae

- 1082 Western Violet-backed Sunbird *Anthreptes longuemarei* (Lesson, 1833) §
 1080 Collared Sunbird *Hedydipna collaris* (Vieillot, 1819) § (vb)
 1091 Amethyst Sunbird *Chalcomitra amethystina* (Shaw, 1812) §
 1122 Scarlet-chested Sunbird *Chalcomitra senegalensis* (Linnaeus, 1766) § (vb)
 1103 Bronzy Sunbird *Nectarinia kilimensis* Shelley, 1884
 1106 Miombo Double-collared Sunbird *Cinnyris manoensis* Reichenow, 1907
 1116 Beautiful Sunbird *Cinnyris pulchellus* (Linnaeus, 1766) § (vb)
 1107 Mariqua Sunbird- *Cinnyris mariquensis* A. Smith, 1836 §

- 1092 Purple-banded Sunbird *Cinnyris bifasciatus* (Shaw, 1812) § (vb)
 1128 Variable Sunbird *Cinnyris venustus* (Shaw & Nodder, 1799) (vb)
 1096 Copper Sunbird- *Cinnyris cupreus* (Shaw, 1812) (vb)

Passeridae

- 1206 Grey-headed Sparrow *Passer griseus* (Vieillot, 1817) § (vb)
 1206 Swahili Sparrow *Passer suahelicus* Reichenow, 1904 (vb)
 1209 Yellow-throated Petronia *Gymnoris superciliaris* Blyth, 1845 §

Ploceidae

- 1134 Grosbeak Weaver *Amblyospiza albifrons* (Vigors, 1831)
 1177 Spectacled Weaver *Ploceus ocularis* A. Smith, 1839 § (vb)
 1189 Holub's Golden Weaver *Ploceus xanthops* (Hartlaub, 1862) § (vb)
 1170 Lesser Masked Weaver *Ploceus intermedius* Rüppell, 1845 § (vb)
 1187 Tanzanian Masked Weaver *Ploceus reichardi* Reichenow, 1886 (vb)
 1165 Village Weaver *Ploceus cucullatus* (Statius Müller, 1776) §
 1161 Dark-backed Weaver *Ploceus bicolor* Vieillot, 1819 (vb)
 1135 Red-headed Weaver *Anaplectes rubriceps* (Sundevall, 1850) § (vb)
 1191 Cardinal Quelea *Quelea cardinalis* (Hartlaub, 1880) (vb)
 1193 Red-billed Quelea *Quelea quelea* (Linnaeus, 1758) § (vb)
 1137 Yellow-crowned Bishop *Euplectes afer* (J.F. Gmelin, 1789) (vb)
 1146 Black-winged Bishop *Euplectes hordeaceus* (Linnaeus, 1758) § (vb)
 1150 Southern Red Bishop *Euplectes orix* (Linnaeus, 1758) § (vb)
 1141 Yellow Bishop *Euplectes capensis* (Linnaeus, 1758) § (vb)
 1140 Fan-tailed Widowbird *Euplectes axillaris* (A. Smith, 1838) (vb)
 1148 Yellow-mantled Widowbird *Euplectes macroura* (J.F. Gmelin, 1789)
 1138 White-winged Widowbird *Euplectes albonotatus* (Cassin, 1848) (vb)
 1139 Red-collared Widowbird *Euplectes ardens* (Boddaert, 1783) (vb)

Estrildidae

- 1255 Orange-winged Pytilia *Pytilia afra* (J.F. Gmelin, 1789) §
 1256 Green-winged Pytilia *Pytilia melba* (Linnaeus, 1758) § (vb)
 1264 Cut-throat Finch *Amadina fasciata* (J.F. Gmelin, 1789) (vb)
 1235 Peter's Twinspot *Hypargos niveoguttatus* (W.K.H. Peters, 1868) (vb)
 1241 Red-billed Firefinch *Lagonosticta senegala* (Linnaeus, 1766) § (vb)
 1239 African Firefinch *Lagonosticta rubricata* (M.H.K. Lichtenstein, 1823) §
 1238 Jameson's Firefinch *Lagonosticta rhodopareia* (Heuglin, 1868) §
 1260 Blue-breasted Cordon-bleu *Uraeginthus angolensis* (Linnaeus, 1758) (vb)
 1261 Red-cheeked Cordon-bleu *Uraeginthus bengalus* (Linnaeus, 1766) § (vb)
 1263 Purple Grenadier *Uraeginthus ianthinogaster* Reichenow, 1879
 1232 Black-tailed Lavender Waxbill *Estrilda perreini* (Vieillot, 1817) (vb)
 1231 Fawn-breasted Waxbill *Estrilda paludicola* Heuglin, 1863
 1233 Crimson-rumped Waxbill *Estrilda rhodopyga* Sundevall, 1850 § (vb)
 1226 Common Waxbill *Estrilda astrild* (Linnaeus, 1758) § (vb)
 1219 Zebra Waxbill *Amandava subflava* (Vieillot, 1819) (vb)
 1266 Bronze Mannikin *Lonchura cucullata* (Swainson, 1837) § (vb)

Viduidae

- 1211 Village Indigobird *Vidua chalybeata* (Statius Müller, 1776) §
 1212 Dusky Indigobird *Vidua funerea* (Tarragon, 1847) (vb)
 1216 Pin-tailed Whydah *Vidua macroura* (Pallas, 1764) § (vb)
 1218 Eastern Paradise-Whydah *Vidua paradisaea* (Linnaeus, 1758) § (vb)
 1217 Broad-tailed Paradise-Whydah *Vidua obtusa* (Chapin, 1922) § (vb)

Motacillidae

- 996 Yellow Wagtail *Motacilla flava* Linnaeus, 1758 (vb)

- 995 Mountain Wagtail *Motacilla clara* Sharpe, 1908 (vb)
991 African Pied Wagtail *Motacilla aguimp* Dumont, 1821 § (vb)
988 Yellow-throated Longclaw *Macronyx croceus* (Vieillot, 1816)
981 African Pipit *Anthus cinnamomeus* Shelley, 1900 (vb)
982 Long-billed Pipit *Anthus similis* Jerdon, 1840 (vb)
984 Tree Pipit *Anthus trivialis* (Linnaeus, 1758)

Fringillidae

- 1290 Yellow-fronted Canary *Serinus mozambicus* (Statius Müller, 1776) § (vb)
1291 Reichard's Seedeater- *Serinus reichardi* (Reichenow, 1882)

Emberizidae

- 1278 Cinnamon-breasted Bunting *Emberiza tahapisi* A. Smith, 1836 § (vb)
1273 Golden-breasted Bunting *Emberiza flaviventris* Stephens, 1815 §
1271 Cabanis's Bunting *Emberiza cabanisi* (Reichenow, 1875)