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Gobally Threatened Biodiversity of the Eastern Arc Mountains and Coastal Forests of Kenya and Tanzania

Roy E. Gereau
Missouri Botanical Garden, roy.gereau@mobot.org

Neil Cumberlidge
Northern Michigan University, ncumberl@nmu.edu

Claudia Hemp
Department of Animal Ecology & Tropical Biology Biocenter, claudia.hemp@uni-wuerzburg.de

Axel Hochkirch
Biogeography, Trier University, hochkirch@uni-trier.de

Trevor Jones
Southern Tanzania Elephant Program, trevor.udzungwa@gmail.com

See next page for additional authors

Author(s)
Roy E. Gereau, Neil Cumberlidge, Claudia Hemp, Axel Hochkirch, Trevor Jones, Mercy Kariuki, Charles N. Lange, Simon P. Loader, Patrick K. Malonza, Michele Menegon, P. Kariuki Ndang'ang'a, Francesco Rovero, and Phillip Shirk

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GLOBALLY THREATENED BIODIVERSITY OF THE EASTERN ARC MOUNTAINS AND COASTAL FORESTS OF KENYA AND TANZANIA

Roy E. Gereau
Missouri Botanical Garden
P.O. Box 299, St. Louis, MO 63116-0299, USA
roy.gereau@mobot.org

Neil Cumberlidge
Department of Biology, Northern Michigan University
Marquette, MI 49855-5376, USA
neilcumberlidge@gmail.com

Claudia Hemp
Department of Animal Ecology & Tropical Biology Biocenter
University of Würzburg am Hubland
97074 Würzburg, Germany
claudia.hemp@uni-wuerzburg.de

Axel Hochkirch
Biogeography, Trier University
54286 Trier, Germany
hochkirch@uni-trier.de

Trevor Jones
Southern Tanzania Elephant Program
P.O. Box 2494, Iringa, Tanzania
trevor.udzungwa@gmail.com

Mercy Kariuki
Africa Partnership Secretariat, BirdLife International
P.O. Box 3502-00100, Nairobi, Kenya
mercy.kariuki@birdlife.org

Charles N. Lange
Zoology Department, National Museums of Kenya
P.O. Box 40658, Nairobi, Kenya
clange@museums.or.ke

Simon P. Loader
Department of Life Sciences, University of Roehampton
London, SW15 4JD, United Kingdom
simon.loader@roehampton.ac.uk

Patrick K. Malonza
Zoology Department, National Museums of Kenya

P.O. Box 40658, Nairobi, Kenya
malonzapk@gmail.com

Michele Menegon
Tropical Biodiversity Section, MUSE—Museo delle Scienze
Corso del Lavoro e della Scienza 3
38122 Trento, Italy
michele.menegon@muse.it

P. Kariuki Ndang'ang'a
Africa Partnership Secretariat, BirdLife International
P.O. Box 3502-00100, Nairobi, Kenya
kariuki.ndganganga@birdlife.org

Francesco Rovero
Tropical Biodiversity Section, MUSE—Museo delle Scienze
Corso del Lavoro e della Scienza 3
38122 Trento, Italy
Udzungwa Ecological Monitoring Centre
Udzungwa Mountains National Park
P.O. Box 99 Mang'ula, Tanzania
francesco.rovero@muse.it

Philip Shirk
Department of Biology, University of Florida
Gainesville, FL 32611, USA
philip.shirk@gmail.com

ABSTRACT

We present an account of the 909 globally threatened taxa (793 species, 74 subspecies, 42 varieties) of animals and plants in the Eastern Arc Mountains and Coastal Forests of Kenya and Tanzania and the sites in which they occur based upon a review of the 2015 IUCN Red List of Threatened Species. Results for animals are summarised by Class (Amphibia, Aves, Gastropoda, Insecta, Malacostraca, Mammalia, Reptilia) and presented for plants as a whole (Classes Bryopsida, Cycadopsida, Jungermanniopsida, Liliopsida, Lycopodiopsida, Magnoliopsida, Pinopsida, Polypodiopsida). We analyse the status of previously known and newly identified sites in which globally threatened biodiversity occurs and summarise the current state of research on the globally threatened and ecologically critical biodiversity of the EACF. We then provide recommendations for future research, environmental regulations, and management regimes based upon comprehensive and reliable data to ensure the continued survival of the EACF's biodiversity within the context of sustainable resource utilisation.

Keywords: biodiversity, conservation, endemism, hotspot, IUCN Red List

INTRODUCTION AND BACKGROUND

The Eastern Arc Mountains and Coastal Forests of Kenya and Tanzania (EACF) region (figure 1) is characterised by a high level of species endemism, a severe degree of threat, and the exceptional diversity of its plant and animal communities (Critical Ecosystem Partnership Fund, 2003a, 2007). Myers *et al.* (2000) recognised the EACF as one of the world's 25 Global Biodiversity Hotspots on the basis of its having at least 1500 endemic plant species and having lost at least 70% of its original primary vegetation. Brooks *et al.* (2002) concluded that the EACF is the one Hotspot likely to suffer the most extinction events from a given loss of habitat. Mittermeier *et al.* (2004), however, later separated the Eastern Arc Mountains (EAMs) as part of a newly recognised Eastern Afromontane Hotspot and included the Coastal Forests of Kenya and Tanzania in an expanded Coastal Forests of Eastern Africa Hotspot.

Figure 1. Eastern Arc and Coastal Forests Project Area, with Eastern Arc mountain blocs and major offshore islands labelled. Map courtesy of Conservation Mapping Program—CI/CABS.

The Critical Ecosystem Partnership Fund (CEPF) conducted an exhaustive survey of the EACF region, its natural resources, its threatened species, and their protection status, as presented in the EACF Ecosystem Profile (Critical Ecosystem Partnership Fund, 2003a). Its Appendices (Critical Ecosystem Partnership Fund, 2003b) constituted its Outcomes Database, with a list of the 333 globally threatened species of the EACF from the 2002 IUCN Red List of Threatened Species, a list of sites in the EACF with the total number of globally threatened species that each contained, and a list of sites in the EACF that host globally threatened species, restricted range birds, and globally significant congregations of birds. At the beginning of 2004, CEPF made a five-year investment of US $7 million allocated to 103 projects in the EACF region. The investment focused on improving human wellbeing and scientific knowledge and reducing the extinction risk for the area's globally threatened species through improved protection for the sites where these species are found. Beyond this investment, biodiversity research and conservation work continue in the region due to its biological value and the ecosystem services it provides for millions of people. As part of an effort to assemble and provide information for conservation workers, governments, and other stakeholders in the EACF, Ndang'ang'a *et al.* (2008) produced a status report for the EACF, updating the Ecosystem Profile and the status of its globally threatened species and increasing the total number of threatened species from 333 to 343. BirdLife International (2013) further updated the Ecosystem Profile and Outcomes Database for the years 2008-2012, increasing the total number of globally threatened species to 346. Here we update the Outcomes Database again, raising the total to 793 threatened species.

MATERIALS AND METHODS

Gereau *et al.* (2014) undertook a thorough review of the 2013 IUCN Red List of Threatened Species (IUCN, 2013) in March 2014 to ascertain the current status of the globally threatened species on the 2012 EACF Outcomes Database and identify any additional threatened species or infraspecific taxa (subspecies, varieties) from the EACF that had been added to the Red List since the 2012 status and trends report (BirdLife International, 2013). In December 2015 Gereau undertook a subsequent review of the 2015 Red List (IUCN, 2015) to identify any further threatened taxa from the EACF that had been added in 2014 and 2015. A total of 386 globally threatened taxa (species, subspecies, and varieties) from the EACF were newly posted on the Red List in 2013-2015, dominated by 324 assessments of plant taxa mostly performed by the Eastern African Plant Red List Authority (EAPRLA). The EAPRLA was constituted in 2006 under a grant from CEPF for the primary purpose of assessing the Red List status of plants of the EACF (Gereau *et al.*, 2007), and has continued until the present with an expanded coverage in the larger Eastern African region but maintaining a central focus on the EACF (Gereau *et al.*, 2009; Luke *et al.*, 2014).

RESULTS

A thorough review of the IUCN Red List of Threatened Species (IUCN, 2013, 2015) revealed a total of 909 globally threatened taxa (793 species, 74 subspecies, 42 varieties) in the EACF, listed in appendix 1 and distributed taxonomically as in table 1. Of these 909 globally threatened taxa, 386 were listed for the first time in 2013-2015 and 25 were re-assessed in 2013-2015 in a different threatened category than in 2012. Of the 909 taxa, 639

Table 1. Number of globally threatened taxa assessed in the EACF by major taxonomic group and Red List version.

Kingdom	Class	Ver. 3.1	Ver. 2.3	Total taxa
Animalia	Amphibia	61	0	61
Animalia	Aves	43	0	43
Animalia	Gastropoda	8	2	10
Animalia	Insecta	43	0	43
Animalia	Malcostraca	4	0	4
Animalia	Mammalia	33	0	33
Animalia	Reptilia	24	0	24
Plantae	Bryopsida	0	1	1
Plantae	Cycadopsida	3	0	3
Plantae	Jungermanniopsida	0	1	1
Plantae	Liliopsida	105	0	105
Plantae	Lycopodiopsida	1	0	1
Plantae	Magnoliopsida	293	266	559
Plantae	Pinopsida	1	0	1
Plantae	Polypodiopsida	20	0	20
TOTAL		639	270	909

(70%) were assessed between 2003 and 2015 under the current Red List Categories and Criteria Version 3.1 (IUCN, 2012a) and 270 (30%) were assessed between 1996 and 2000 under the previous Version 2.3 (IUCN, 1994).

Distributions of the 909 globally threatened taxa were tabulated for a series of 163 named sites in the EACF, mostly Important Bird Areas (IBAs) and/or Key Biodiversity Areas (KBAs) (BirdLife International 2014a,b). For consistency with previous versions of the EACF Outcomes Database, Udzungwa Mountains National Park is listed as a site (IBA and KBA) separately from the rest of the Udzungwa Mountains, although the two areas are not biogeographically distinct.

Numbers of threatened taxa per site are shown in appendix 2. The ten sites in the EACF with the largest numbers of threatened taxa are: Uluguru Mountains (250), East Usambara Mountains (216), West Usambara Mountains (187), Udzungwa Mountains (excluding Udzungwa Mountains National Park; see above) (184), Udzungwa Mountains National Park (157), Nguru Mountains (141), Lindi District coastal forests (93), Shimba Hills (90), South Pare Mountains (76), and Selous Game Reserve (75) (figure 2). We summarise below the chief results for threatened taxa of the various taxonomic groups assessed, followed by a summary of changes in numbers of threatened taxa per site between the 2012 and 2015 Outcomes Database.

Amphibians

On the 2015 Red List there are 61 globally threatened species of amphibians occurring in the EACF, with five of these listed for the first time in 2013-2015 and 16 species re-assessed in 2013-2015 in a different threatened category than in 2012. The complete assessment of all East African amphibians is due in 2016 (Loader, pers. obs.), which will mean that the assessments of 17 species will be updated from those on the current list (see appendix 1), in

addition to any other newly described species (*e.g.* Loader *et al.*, 2015). The eight sites in the EACF with the largest numbers of threatened amphibian species are: Udzungwa Mountains (21), Nguru Mountains (18), Uluguru Mountains (17), East Usambara Mountains (14), West Usambara Mountains (14), Nguu Mountains (9), Ukaguru Mountains (8), and Udzungwa Mountains National Park (7).

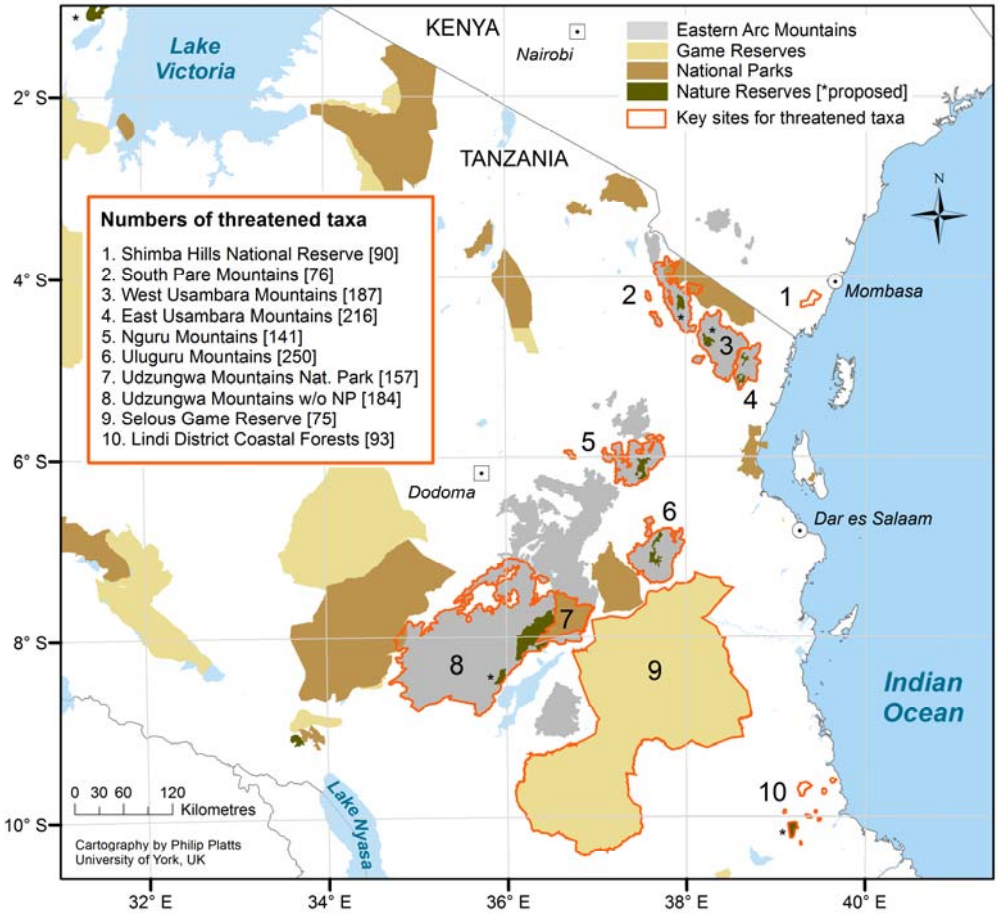

Figure 2. Sites within the Eastern Arc and Coastal Forests with the largest numbers of threatened taxa. Eastern Arc mountain bloc boundaries follow Platts et al. *(2011); Lindi District Coastal Forests boundaries follow BirdLife International (2014b).*

Birds

On the 2015 Red List there are 43 globally threatened species of birds occurring in the EACF, with six of these listed for the first time in 2013-2015 and five species re-assessed in 2013-2015 in a different threatened category than in 2012. The ten sites in the EACF with the largest numbers of threatened bird species are: Udzungwa Mountains (16), Udzungwa Mountains National Park (14), Uluguru Mountains (14), East Usambara Mountains (12),

Bagamoyo District coastal forests (10), Rubeho Mountains (10), South Pare Mountains (10), West Usambara Mountains (10), Selous Game Reserve (9), and Taita Hills Forests (9).

Gastropods

On the 2015 Red List there are ten globally threatened species of gastropods occurring in the EACF, with no species listed for the first time in 2013-2015 and no changes of status between 2012 and 2015. The eight sites in the EACF with threatened gastropod species are: Taita Hills Forests (4 species), River Wami (2), Arabuko-Sokoke Forest (1), Kyngani [Kingani, lower Ruvu] River (1), Muheza District coastal forests (1), Pangani District coastal forests (1), Shimba Hills (1), and Zanzibar coast (1). Two threatened species, *Lanistes alexandri* and *Gulella amboniensis*, were assessed under Version 2.3 of the IUCN Red List Categories and Criteria (IUCN, 1994), and should therefore be reassessed under the current Version 3.1 (IUCN, 2012a).

Insects

On the 2015 Red List there are 43 globally threatened species of insects occurring in the EACF, with 35 of these listed for the first time in 2013-2015 and no changes of status between 2012 and 2015. The seven sites in the EACF with the largest numbers of threatened insect species are: East Usambara Mountains (17), Uluguru Mountains (14), Ukaguru Mountains (5), West Usambara Mountains (5), Zanzibar coast (4), Nguru Mountains (3), and Udzungwa Mountains National Park (3). Invertebrates are generally still underrepresented on the Red List and most insect taxa have not yet been assessed. Currently, there are efforts to assess the endemic Orthoptera species of Tanzania, so that it can be expected that a more comprehensive picture of this order of insects will become available in the future. A total of 33 threatened species of grasshoppers were added to the Red List in 2013 and 2014: nine of them Vulnerable, ten Endangered, and 14 Critically Endangered.

Freshwater crabs

The IUCN Red List of Threatened Species 2008 included 209 globally threatened species of freshwater crabs, with 28 of these listed for the Afrotropical region (16 Vulnerable, 10 Endangered, 2 Critically Endangered), and nine species for East Africa (7 Vulnerable, 2 Endangered) (Cumberlidge *et al.*, 2009; Cumberlidge, 2014a,b). The EACF includes four species of *Potamonautes* assessed as Vulnerable, and these are the only threatened members of the Class Malacostraca in the EACF. The four threatened species are found in four sites in the EACF: East Usambara Mountains (3 species), West Usambara Mountains (2), Shimba Hills (1), and Uluguru Mountains (1). Two of the threatened species (*P. infravallatus* and *P. xiphoidus*) are endemic to the East and West Usambara Mountains, one species (*P. unisulcatus*) is endemic to the Uluguru Mountains, and one species (*P. raybouldi*) is found in the Shimba Hills in Kenya and the East Usambara Mountains in Tanzania (Bayliss, 2002; Cumberlidge & Vannini, 2004).

Mammals

On the 2015 Red List there are 33 globally threatened taxa (species, subspecies) of mammals occurring in the EACF, with one taxon listed for the first time in 2014 and no changes of status between 2012 and 2015. The seven sites in the EACF with the largest numbers of threatened mammal taxa are: Udzungwa Mountains (13), East Usambara Mountains (8), Boni and Dodori (7), Rubeho Mountains (7), Uluguru Mountains (7), West Usambara Mountains (7), and Udzungwa Mountains National Park (6).

Reptiles

On the 2015 Red List there are 24 globally threatened species of reptiles occurring in the EACF, with 15 of these listed for the first time in 2013-2015 and one species re-assessed in 2014 in a different threatened category than in 2012. The nine sites in the EACF with the largest numbers of threatened reptile species are: East Usambara Mountains (11 species), Uluguru Mountains (8), West Usambara Mountains (7), Nguru Mountains (5), Udzungwa Mountains (4), North Pare Mountains (2), Shimba Hills (2), South Pare Mountains (2), and Udzungwa Mountains National Park (2).

Plants

On the 2015 Red List there are 691 globally threatened taxa (species, subspecies, varieties) of plants (Classes Bryopsida, Cycadopsida, Jungermanniopsida, Liliopsida, Lycopodiopsida, Magnoliopsida, Pinopsida, and Polypodiopsida) occurring in the EACF, with 324 of these listed for the first time in 2013-2015 and four taxa re-assessed in 2013 in a different threatened category than in 2012. Since 2008, the list of globally threatened plant taxa in the EACF has grown by 392 newly assessed taxa, including all Liliopsida (105), Lycopodiopsida (1), and Polypodiopsida (20). The ten sites in the EACF with the largest numbers of threatened plant taxa are: Uluguru Mountains (189), East Usambara Mountains (151), West Usambara Mountains (142), Udzungwa Mountains (129), Udzungwa Mountains National Park (125), Nguru Mountains (103), Lindi District coastal forests (87), Shimba Hills (73), Selous Game Reserve (61), and South Pare Mountains (55). A total of 268 threatened taxa (1 Bryopsida, 1 Jungermanniopsida, 266 Magnoliopsida) were assessed under Version 2.3 of the IUCN Red List Categories and Criteria (IUCN, 1994). In keeping with the directive that all species should be re-assessed at least once every ten years (IUCN, 2012b), the Eastern African Plant Red List Authority (EAPRLA) is in the process of re-assessing the 266 vascular plant taxa originally assessed under Version 2.3 (Luke *et al.*, 2014).

Change in site status

Comparing the 2012 and 2015 Outcomes Database, many changes in the numbers of threatened taxa reported from 163 sites within the EACF have resulted from new distribution records of previously known and newly added threatened taxa together with the loss of taxa no longer listed in threatened categories. Based on these changes in numbers of threatened taxa by site, 16 sites in the EACF not previously classified as Key Biodiversity Areas (KBAs) may now qualify as such due to the presence of globally threatened taxa (see appendix 2 and appendix 3). These are:

1. Kilifi District (Kenya) coastal forests (*e.g.* Bamba, Bonje Village, Casuarina Point, Dakabuka Hill, Dakawachu, Giriama, Gotani North, Kachararoni Gorge, Kaloleni, Kanamai, Kaya Dagamara, Kaya Fimboni, Kikambala, Magarini, Malindi, Mariakani, Mida, Mitangoni, Mnarani, Mtwapa, Mwahera, Vitengeni River, Watamu, Vipingo, Vuma): 33 taxa (11 Endangered; 1 Critically Endangered: *Saintpaulia ionantha* subsp. *rupicola*)
2. Lamu District (Kenya) coastal forests (*e.g.* Haiwani Forest, Kanwe Mayi, Kiunga, Kiwayu, Kui Island, Lake Mukunguya, Lamu Island, Nairobi Ranch, Ras ya Mwana, Shamba Ziwa, Utwani Forest Reserve): 31 taxa (8 Endangered)
3. Kwale District (Kenya) coastal forests (*e.g.* Chale Peninsula, Golini, Gulanza, Kaya Bogowa, Kilibasi, Duruma, Jego, Mackinnon Road, Maweni Rocks, Mkongani West, Mukurumudzi, Taru, Twiga, Ukunda, Vigurangani): 32 taxa (12 Endangered;

4 Critically Endangered: *Aloe classenii*, *Justicia drummondii*, *Saintpaulia ionantha* subsp. *rupicola*, *Marsilea fadeniana*)

4. Mahenge (areas not otherwise specified, *e.g.* Igundalamlungu, Issongo, Isyaga Village, Muhulu Mountains, Mzelezi Forest Reserve, Nawenge Forest Reserve, Ndororo Mountain): 23 taxa (10 Endangered)
5. Tanga District (Tanzania) coast (*e.g.* Amboni Caves, Kange Gorge, Kwamba Forest Reserve, Pongwe, Steinbruch Gorge, Tanga): 13 taxa (6 Endangered)
6. Masasi District (Tanzania) forests (*e.g.* Chidya, Chivirikiti Village, Chiwale Village, Chiwata Ngatala Rock, Kwa-Mkopo, Masasi Hill, Mbangala River, Mtandi Hill, Ndanda Mission, Pangani Hill): 12 taxa (5 Endangered)
7. Mombasa coast (*e.g.* Changamwe, Gazi, Likoni, Mirtini, Nyali Beach, Port Tudor, Shanzu Beach, Shimo la Tewa): 9 taxa (2 Endangered)
8. Mtwara District (Tanzania) coastal forests (*e.g.* Mahurunga, Mkunya River proposed Forest Reserve, Mtiniko, Nyangarama, Ruvuma Bay): 9 taxa (3 Endangered)
9. Taita District (Kenya) coastal forests (*e.g.* Kighombo Village, Kitobo Forest, Kizima [Kirima] Hill, Lake Kandere [Kandiri], Lumi River, Rukinga Ranch, Taveta): 7 taxa (3 Endangered; 1 Critically Endangered: *Aloe classenii*)
10. Mahenge (Nambiga Forest Reserve): 5 taxa
11. Nachingwea District (Tanzania) (*e.g.* Lukeledi, Namanga): 5 taxa (3 Endangered)
12. Kaya Timbwa (Kenya): 2 taxa (1 Endangered)
13. Malundwe (Tanzania): 2 taxa (1 Endangered)
14. Kaya Bura (Kenya): 1 taxon
15. Kyngani [Kingani] River (lower reaches of Ruvu River in Bagamoyo District, Tanzania [Polhill, 1988]): 1 taxon
16. Ruangwa District (Tanzania) coastal forests: 1 taxon (1 Endangered)

See appendix 3 for a complete listing of Endangered and Critically Endangered taxa present in the above sites. These sites include the entire geographic ranges of three globally threatened EACF plant taxa: *Blepharis kenyensis* (Endangered: Kilifi District coastal forests and Lamu District coastal forests), *Lepidagathis plantaginea*. (Endangered: Masasi District forests and Nachingwea District), and *Marsilea fadeniana* (Critically Endangered: Kwale District coastal forests).

DISCUSSION

We discuss separately each of the seven main taxonomic groups (Classes) of animals, discuss plants as a whole, and examine some of the known and potential threats to IBA and KBA sites. We review literature, primarily from the period 2008-2015 but sometimes earlier when relevant, pertinent to the presence and distribution of endemic and globally threatened taxa in the EACF, changes in Red List categories, new species descriptions, extraction of key taxa and other natural resources, invasive species, actions and research targeting EACF biodiversity and its conservation, and policy development based on the above information. Length and detail of discussions vary greatly among taxonomic groups depending on available information.

Amphibians

The Kihansi spray toad *Nectophrynoides asperginis*, listed as Extinct in the Wild on the 2009 IUCN Red List, was successfully reintroduced into its native habitat in the Uzungwa Scarp Natue Reserve in October 2012 (IUCN, 2012c). However, because a species is required to remain in its original category for a time period of five years from the time it no longer meets the criteria for that category (IUCN Standards and Petitions Subcommittee, 2014), it remains listed as Extinct in the Wild on the 2015 Red List (IUCN SSC Amphibian Specialist Group, 2015). The Critically Endangered *Nectophrynoides wendyae* (figure 3), also endemic to the Uzungwa Scarp Nature Reserve, was reported in 2011 from a second site, 0.5 km from the original site (BirdLife International, 2013), while the other Critically Endangered species of the genus from the Udzungwas, *N. poyntoni*, is only known from one locality and last seen in 2003 despite recent surveying (Menegon, pers. obs.).

Figure 3. The Critically Endangered Nectophrynoides wendyae*, endemic to the Uzungwa Scarp Nature Reserve. Photograph by M. Menegon.*

Across the EACF region, predominantly in the EAMs, numerous new species and changes in species ranges have been reported in the past decade and these include species that are pending assessment, but given their highly localised distribution, are likely to be threatened. North to South this includes threatened or potentially threatened species in: Taita Hills (*Boulengerula niedeni*; *Callulina dawida*); North Pare (*Arthroleptis fichika*; *Callulina laphami*); South Pare (*Arthroleptis anotis* Loader, Poynton, Lawson, Blackburn & Menegon, 2010 [listed as Data Deficient in 2013]; *Arthroleptis fichika*; *Callulina shengena* [figure 4]; *Callulina stanleyi*); West Usambara (*Arthroleptis fichika*; *Callulina kisiwamsitu*; *Nectophrynoides vestergaardi*); East Usambara (*Nectophrynoides frontierei* Menegon, Salvidio & Loader, 2004 [Data Deficient 2014]); Nguru (*Callulina hanseni*; *Callulina kanga*;

Callulina meteora); Ukaguru (*Churamiti maridadi*; *Nectophrynoides laticeps*; *Nectophrynoides paulae*); Uluguru (*Arthroleptides yakusini*; *Nectophrynoides laevis* Menegon, Salvidio & Loader, 2004 [Data Deficient 2014]; *Nectophrynoides pseudotornieri*); Udzungwa (*Arthroleptides yakusini*; *Nectophrynoides poyntoni*); and Mahenge (*Arthroleptides yakusini*).

Figure 4. The Critically Endangered Callulina shengena, *endemic to the South Pare Mountains. Photograph by M. Menegon.*

Loader *et al*. (2011) reported range extensions of amphibian species from the northwestern EAMs of Tanzania, and similarly Menegon *et al*. (2003, 2008, 2011a) reported range extensions for the Nguu, Nguru, and Mahenge Mountains. The 2012 status and trends report (BirdLife International, 2013) listed 19 new herpetofauna species described from the South Nguru Mountains (Menegon *et al.*, 2008), and indicated new species yet to be named including *Nectophrynoides* species and many species of tree frogs. Loader *et al*. (2014) outlined the diversity of Brevicipitids across the whole of the EAMs.

Malonza & Veith (2012) evaluated the relationship of amphibian composition with human habitat disturbance and elevation along 29 transects in the Taita Hills, distributed among terrestrial (forest and plantation) and aquatic (streams and dams) habitats. A total of 23 amphibian species were recorded, including the Endangered Taita African caecilian *Boulengerula taitana*. Total amphibian species richness increased with increased habitat disturbance but decreased with increasing elevation. However, abundance of species that reproduce by direct development, which are restricted to forested habitats, decreased with increased habitat disturbance. In addition to the Taita Hills endemic species *Boulengerula taitana*, two other Taita endemics and direct developers are the Endangered Sagalla caecilian *Boulengerula niedeni*, which was not found along the transects, and the Critically Endangered Taita Hills warty frog *Callulina dawida*, which was found in the transects. For

amphibian conservation in the Taita Hills, Malonza & Veith (2012) recommended continued maintenance of a set of forest fragments together with human modified habitats, some form of habitat connectivity, and replacement of exotic plantations with indigenous plants.

Zancolli *et al*. (2013) compared the anuran (frog and toad) fauna of Mount Kilimanjaro with that of Mount Meru and the EAMs, concluding that the young geographical age of the northern volcanoes has not provided enough time for most montane frogs to colonise them. Species richness per mountain bloc in the EAMs increased from north to south, with the lowest in North Pare and the highest in Udzungwa and Mahenge. Loader *et al*. (2014) produced a dated phylogeny of Brevicipitid frogs throughout the Eastern Afromontane Biodiversity Region, including the eight threatened species of *Callulina* and the five threatened species of *Probreviceps* on the updated 2015 Outcomes Database. Ancestral-area reconstructions indicate the presence of Brevicipitids since the Oligocene, with the central EAMs as the initial centre of diversification of the forest species. Due to persistence and stability of forest habitats, the Eastern Arc is an area that has accumulated Brevicipitid frog species over a long span of geological time.

A number of EACF amphibians are offered for sale through the pet trade, including threatened endemic species. Often the species traded are not included in any official quotas, highlighting the illegal trade of amphibians. Carpenter *et al*. (2014) recently published a comprehensive review of the global trade in CITES-listed amphibian species. Among the 18 genera reported in the CITES import data (collated August 2008), the only Tanzanian genus reported was *Nectophrynoides*. In general, very few data are available on trade in East African amphibians and an accurate monitoring of the species collected in the wild and available on the market is of primary importance.

Birds

During the last decade, the list of globally threatened birds in the EACF has grown by 18 species, including six species of vultures, other larger and relatively widespread birds (steppe eagle *Aquila nipalensis*; martial eagle *Polemaetus bellicosus*; grey crowned crane *Balearica regulorum*; southern ground hornbill *Bucorvus leadbeateri*; Somali ostrich *Struthio molybdophanes*; and secretary bird *Sagittarius serpentarius*), and the Rubeho akalat *Sheppardia aurantiithorax*.

Since vultures are mostly found in open areas of woodland, dry wooded grassland, and grassland, they are generally widespread and not restricted to particular KBAs in the EACF. Four species of vulture (Rueppell's vulture *Gyps rueppelli*; lappet-faced vulture *Torgos tracheliotos*; Egyptian vulture *Neophron percnopterus*; and white-headed vulture *Trigonoceps occipitalis*), however, have a preference for montane regions, slopes and cliffs, and thus can sometimes be found in mountainous sites such as East and West Usambara Mountains, North and South Pare Mountains, and Taita Hills. The hooded vulture *Necrosyrtes monachus*, white-backed vulture *Gyps africanus*, and Rueppell's vulture were listed as Endangered in 2012. This was due to very rapid population declines across their ranges associated with habitat loss and degradation, hunting, persecution, collisions, and poisoning (BirdLife International, 2014c). All three of these vulture species were up-listed to Critically Endangered in 2015 due to severe continuing population declines in various parts of their broad geographic ranges (BirdLife International, 2015a,b,c). The Egyptian vulture (Endangered) and white-headed vulture (Vulnerable) were listed as threatened in 2012 due to declines caused by various threats across their ranges; the white-headed vulture has subsequently been up-listed to Critically Endangered due to extremely rapid population decline (BirdLife International, 2015d).

The Rubeho akalat was recently described as new to science by Beresford *et al*. (2004) and listed as Endangered in 2012 owing to ongoing habitat loss and fragmentation thought to be reducing its already very small range (BirdLife International, 2014c). The east coast akalat *Sheppardia gunningi* Haagner, 1909 was down-listed from Vulnerable to Near Threatened in 2007.

The montane white-eye *Zosterops poliogaster* Sibley & Monroe, 1990 was split into *Z. poliogastrus* Heuglin, 1861, *Z. kulalensis* Williams, 1948, *Z. winifredae* Sclater, 1934, and *Z. silvanus* Peters & Loveridge, 1935 by Collar *et al*. (1994), but the plumage differences on which this was based were not considered sufficient to justify the separation of these species (BirdLife International, 2014c). As a result, the previously globally threatened Taita white-eye *Z. silvanus* (figure 5) and the South Pare white-eye *Z. winifredae* were lumped into the montane white-eye, now listed as Least Concern (as *Z. poliogastrus*; BirdLife International, 2012). However, recent molecular evidence (Cox *et al.*, 2014) strongly suggests that the Taita white-eye and the South Pare white-eye are good species separate from the montane white-eye; if accepted this new evidence would result in the restoration of these two species to the EACF Outcomes Database.

Figure 5. The Taita white-eye Zosterops silvanus. *Photograph by L. Borghesio.*

In addition to the four Critically Endangered vulture species discussed above, the four other Critically Endangered bird species in the EACF are of particular note: Taita apalis *Apalis fuscigularis* (figure 6); Uluguru bush-shrike *Malaconotus alius*; long-billed tailorbird *Artisornis moreaui*; and Taita thrush *Turdus helleri* (figure 7). Borghesio *et al*. (2010) estimated the total population size of the Taita apalis (figure 6), endemic to the Taita Hills Forests in Kenya, to range from 310 to 654 individuals. The northern section of Ngangao forest fragment of the Taita Hills hosted 65% of the global population of the species and thus protecting the subpopulation in this section is a priority. Between 2009 and 2014, Borghesio

et al. (2014b) conducted playback surveys that have slightly expanded the known range of the species with previously unreported subpopulations in various small forest fragments in Taita Hills (Msidunyi, Yale, and Mbololo) and a reconfirmed old record in Fururu. However, these range extensions and rediscovery have added fewer than 15 pairs to the total population, and monitoring of the three main subpopulations at Ngangao, Vuria, and Chawia forest fragments shows a steady decline in range and numbers.

Figure 6. The Critically Endangered Taita apalis Apalis fuscigularis. *Photograph by L. Borghesio.*

Since its discovery in 1927, the Uluguru bush-shrike was thought to be confined to one of the main forest blocks of the Ulugurus, the Uluguru North Forest Reserve, within an area of 84 km^2. Surveys in 1999-2000 estimated about 1200 breeding pairs found only in Uluguru North Forest Reserve (Burgess *et al.*, 2001). A new record of two pairs of Uluguru bush-shrike in Uluguru South Forest Reserve in a 2006-2007 survey was a significant milestone highlighting the importance of reconnecting these two forests to allow for the exchange of genetic diversity (John & Mazengo, 2010). However, the subpopulation in Uluguru South is likely to be very small and restricted to the northeastern part of the forest, which highlights the important of Uluguru North for this species.

Figure 7. The Critically Endangered Taita thrush Turdus helleri. *Photograph by L. Borghesio.*

The long-billed tailorbird occurs at low density in two widely separated forests, the East Usambaras in the EACF, Tanzania, and the Njesi Plateau in northern Mozambique, with its global population tentatively estimated at 50-250 individuals (BirdLife International, 2014c). Borghesio *et al*. (2014a) studied the habitat use of the long-billed tailorbird and showed that it only occurs inside or along the edges of continuous forest, rarely in forest fragments, and that its abundance is significantly depressed in sites invaded by the exotic tree *Maesopsis eminii* Engl. (Rhamnaceae) in the East Usambaras. Borghesio (2012) suggested that invasion by *M. eminii* had highly significant negative effects on frequency for 5 out of 11 rare bird species, including the long-billed tailorbird and the Near Threatened Fischer's turaco, *Tauraco fischeri* (Reichenow, 1878); however, it remains to be determined what factor associated with *Maesopsis eminii* may contribute to reduced abundances of various threatened bird species.

The Taita thrush (figure 7) is confined to four tiny forest patches in the Taita Hills, Kenya: Mbololo (ca. 200 ha), Ngangao (ca. 92 ha), Chawia (ca. 50 ha), and Yale (2 ha). Waiyaki *et al*. (2001) estimated the population to number ca. 1350 individuals, roughly equivalent to 930 mature individuals. The population is suspected to be in decline as the species' montane forest habitat has been severely fragmented and continues to decline in both extent and quality; however, the rate of decline has not been quantified (BirdLife International, 2014c). The decline is suspected to be due to habitat loss, continuing human disturbance, unsustainable collection of firewood and timber, and grazing of domestic herbivores in the forest (Muoria *et al.*, 2013).

The Endangered Clarke's weaver *Ploceus golandi*, is known only from Dakatcha woodlands and Arabuko-Sokoke Forest; the *Brachystegia* woodland at Dakatcha was previously considered to be the main breeding site for this species (Nature Kenya, 2008; Ruuska, 2013), but Ng'weno (2013) clarified that the birds are breeding in seasonal wetlands

at Dakatcha. Other threatened species in Dakatcha woodlands likely to be impacted by forest degradation and habitat fragmentation are the Endangered Sokoke pipit *Anthus sokokensis* and the Vulnerable Sokoke scops owl *Otus ireneae*. The Vulnerable white-winged apalis *Apalis chariessa* is suspected to be no longer present in Lower Tana River forests (Nature Kenya, 2014).

Hassan *et al.* (2013) assessed the influence of human-induced disturbance on bird communities along permanent transects in four coastal forests in the Pangani-Saadani ecosystem of Tanzania. A total of 88 bird species were recorded, including the Endangered Sokoke pipit *Anthus sokokensis*, the Near Threatened Fischer's turaco *Tauraco fischeri*, and the Near Threatened plain-backed sunbird *Anthreptes reichenowi* Gunning, 1909. Bird abundance was highest in the forest with the highest level of disturbance, while bird species richness and diversity were highest in the least disturbed forests.

Werema *et al.* (2013) conducted a preliminary study of the bird species composition of Ikokoto Forest Reserve in the northeast part of the Udzungwa Mountains. A total of 64 species of birds were reported, including the Near Threatened Moreau's sunbird *Nectarinia moreaui* (Sclater, 1933). All species belonged to the known assemblage of species present in the larger Udzungwa forests, 61% of the species were forest dependent, and six species were range-restricted forest understory taxa. Therefore, despite the small size (ca. 110 ha.) and high degree of fragmentation of this forest, it has significant conservation value for birds and possibly other groups of organisms.

Gastropods

In 2010 the freshwater gastropods *Lanistes farleri* and *L. stuhlmanni* Von Martens, 1897, both previously assessed as Endangered, were downgraded to Vulnerable and Near Threatened, respectively, both due to distributional data showing more ample geographic distributions than previously recorded. In 2004, *Gulella taitensis* and *Thapsia buraensis* were downgraded from Critically Endangered to Endangered due to both species' having an Extent of Occurrence in excess of 100 km^2 (Lange, 2006).

The site "Southeast coastal Kenya" includes only the Vulnerable species *Lanistes ciliatus*, with range cited as "between Mombasa and Taita" with no further information (Ngereza, 2010).

Insects

A database of dragonfly specimen collections in the EACF (Clausnitzer *et al.*, 2012; Kipping, Clausnitzer & Dijkstra, pers. comm.) expanded the range of the Vulnerable *Coryphagrion grandis* to include six Kenyan coastal forests (Arabuko-Sokoke, Buda, Gongoni, Kaya Muhaka, Kaya Rabai, and the Shimba Hills), and in Tanzania to the East Usambara Mountains, Udzungwa Mountains National Park, Kimboza Forest Reserve, and Pugu Forest Reserve. The same database revealed the presence of the Vulnerable *Nepogomphoides stuhlmanni* in the East Usambara Mountains and Kimboza Forest Reserve; expanded the range of the Vulnerable Seychelles fineliner damselfly *Teinobasis alluaudi* to Jozani Forest on Zanzibar Island; and showed that the range of the Vulnerable montane demoiselle *Umma declivum* includes the East Usambara, Nguru, Ukaguru, and Uluguru Mountains, as well as Udzungwa Mountains National Park.

The Critically Endangered Zanzibar giant forest grasshopper *Allaga ambigua* (figure 8) was described from Zanzibar and not seen again until its rediscovery in 2013 on the eastern slopes of Mount Kilimanjaro, about 400 km from the type locality (Hemp, pers. obs.). Major entomological collections harbour only a few specimens of this species and no further

information existed until recently for this flightless species of Acrididae subfamily Catantopinae. On Mount Kilimanjaro it was collected in savanna habitats, where it was caught at night from bushes and small trees. Nymphs appear in May and adults were found from May to October. It may have been overlooked because of its seasonality and because it is nocturnal and living on bushes and trees. This species has rarely been collected and might occur in similar habitats, *e.g.* in the North and South Pare Mountains and/or elsewhere in northern and central Tanzania. Another Critically Endangered species of Catantopinae, the fully winged Usambara splendid grasshopper *Anischnansis burtti*, seems to be restricted to the wet evergreen forests of the East Usambara Mountains (Sigi and Mlingano). It was last collected in 1966 and has not been recorded since then. The Critically Endangered Uluguru forest grasshopper *Burttia sylvatica* is also in Acrididae subfamily Catantopinae. Only a few specimens have been collected, all from forests of the Uluguru Mountains, where Hochkirch (1998) reported it from the Uluguru North Forest Reserve. The latter two species are both in monotypic genera, indicating that they are relicts having survived in the geologically old forests of the EAMs.

Figure 8. The Critically Endangered Zanzibar giant forest grasshopper Allaga ambigua *(male) was recently discovered on the eastern slopes of Mount Kilimanjaro. Photograph by C. Hemp.*

Mainly due to habitat loss and degradation (particularly by land use change and urbanization) and their restricted ranges, the Uluguru slender grasshopper *Acanthoxia aculeus*, the Tanzanian coast grasshopper *Acteana alazonica*, three species of *Afrophlaeoba* and two species of *Aresceutica* are listed as Endangered. *Acanthoxia aculeus* (Acrididae subfamily Hemiacridinae) is recorded from only two localities on the northwestern slopes of the Uluguru Mountains. *Acteana alazonica* (subfamily Acridinae) is known from five localities on the island of Zanzibar and the Tanzanian

coast. All four species of the flightless genus *Afrophlaeoba* (Acridinae) are listed as globally threatened. The Uluguru forest edge grasshopper *A. euthynota* (endemic to the Uluguru Mountains), the Rubeho forest edge grasshopper *A. longicornis* (endemic to the Rubeho Mountains), and the Nguru forest edge grasshopper *A. nguru* (endemic to the the Nguru Mountains) are all listed as Endangered. The Vulnerable Usambara forest edge grasshopper *A. usambarica*, occurs in the East Usambara Mountains, along the Tanzanian coast (Hemp, 2005), and was recently recorded in Lutindi Forest in the West Usambaras (near Lutindi Mental Hospital at ca. 5°04'S, 38°22'E, not the former Lutindi FR that is now part of Nilo NR) (Hemp *et al.*, 2014a). All these species dwell in the herb layer of forest clearings and edges. They tolerate a certain degree of land use change and also occur in ruderal and agricultural areas as long as evergreen trees still occur and the land is not too intensively used. The flightless genus *Aresceutica* (subfamily Catantopinae) has similar preferences, but is more closely associated with natural forests. Two of the three *Aresceutica* species are listed as Endangered. The Usambara dusky grasshopper *A. subnuda* was previously only known from the Shimba Hills in southern Kenya and the East Usambaras, but was recently also discovered in Lutindi Forest (Hemp *et al.*, 2014a). The Uluguru dusky grasshopper *A. morogorica* is only known from the Uluguru and Nguru Mountains.

Species of the genus *Acrida* (Acrididae subfamily Acridinae) are usually associated with grass-rich, open habitats, and are often characteristic of ruderal and degraded areas. Little is known about the Usambara slant-faced grasshopper *A. bara*, listed as Vulnerable. This species was described from the Lushoto area of the West Usambara Mountains and has not been collected again since its description. Similar is the situation for the Usambara burrowing grasshopper *Acrotylus apicalis*. *Acrotylus* species usually inhabit dry habitats with large amounts of bare ground. The genera *Acrida* and *Acrotylus* are both in need of revision and the taxonomic status of the two endemic species needs to be verified. Both species were listed as Vulnerable because their areas of occurrence are restricted, each being known from only a single locality, entomological collections only hold a few specimens, and the areas from which they were described have experienced dramatic land use changes. The fully winged Tanzanian miombo grasshopper *Cardeniopsis regalis* (subfamily Catantopinae), is also listed as Vulnerable. It is only known from Zanzibar, Kilosa, and the Tanzanian coast on the Korogwe-Msala road.

Hochkirch (1995, 1996) conducted detailed studies on the ecology of grasshopper species from the East Usambara Mountains and on the ecology, behaviour, and phylogenetics of grasshoppers of the genus *Afrophlaeoba* (Hochkirch, 2001, 2010). Hochkirch (1998) compared the grasshopper fauna of the Uluguru and East Usambara Mountains and found a marked similarity in the species composition of degraded areas, whereas the natural forest regions had different species compositions, but a high overlap at the genus level. Hemp (2005) recorded 61 species of grasshoppers, locusts, and bushcrickets in burned coastal grasslands, fire-disturbed forest remnants, and undisturbed coastal forests in the vicinity of Pangani, Tanzania, and found that the majority (81%) of species in open-land habitats were widespread in distribution, while 60% of the species in undisturbed forests were endemic to the coastal forests.

In 2015 Red List assessments of some Orthoptera suborder Ensifera (bushcrickets) were performed and are expected to be published on the 2016 Red List. In the family Tettingoniidae (Hemp, 2013), 36 taxa (35 species and one subspecies) were proposed for Red Listing in threatened categories (3 Critically Endangered, 22 Endangered, 11 Vulnerable)

(Hemp *et al.*, 2014b, 2015), including the Vulnerable great ridgeback *Tropidonotacris grandis* Ragge, 1957 (figure 9) and the Endangered inflated tree bushcricket *Euryastes jagoi* Ragge, 1980 (figure 11), both of subfamily Phaneropterinae. Two species of subfamily Conocephalinae tribe Angraeciini from the small Lutindi Forest in the West Usambara Mountains (Hemp *et al.*, 2014a, 2015) are assessed as Critically Endangered, as is one species of Phaneropterinae, the Taita plump bushcricket *Peronura hildebrandtiana* Karsch, 1899 (Hemp, 2011; figure 10) from the forest remains of the Taita Hills. The majority of the proposed threatened Ensifera taxa come from the East and West Usambara Mountains and the North and South Pare Mountains. Several other taxa occur in the forest reserves of the Taita Hills, Nguru and Uluguru Mountains. In addition to these Ensifera, nine species of Orthoptera suborder Caelifera superfamily Acridoidea will also be listed in threatened categories.

Figure 9. The giant ridgeback Tropidonotacris grandis *(here a female) was known only from the male holotype coming from Little Mahenge until recently it was collected in deciduous dry forest on the eastern slopes of Mount Kilimanjaro and the southern slopes of the North Pare Mountains. Photograph by C. Hemp.*

Freshwater crabs

Potamonautes infravallatus is endemic to the East and West Usambara Mountains and has been collected from seven localities (Reed & Cumberlidge, 2006). This small-sized highland species (adults measure only 23 mm across the carapace at its widest point) has been known to science since 1898 but it has only been collected sporadically during this time. This species is threatened because parts of its natural habitat (streams draining forested highlands)

Figure 10. The Taita plump bushcricket Peronura hildebrandtiana *(here a male) was described based on a single female and rediscovered in 2011 along forest edges at montane elevations in the Taita Hills. Photograph by C. Hemp.*

Figure 11. The inflated tree bushcricket Euryastes jagoi *(male) is restricted to forests of the West Usambara Mountains; a second population was detected in 2014 in Lutindi Forest. Photograph by C. Hemp*

species is threatened because parts of its natural habitat (streams draining forested highlands) have been altered for agriculture, leaving it in cultivated areas with almost no surface water, where it has been collected from holes dug in mud and from under stones. Crabs were also collected from a tiny spring in an area cleared for cultivation that was covered with weeds and ground vegetation. The result is that *P. infravallatus* has a relatively limited Extent of Occurrence (probably less than 20 000 km²), a fragmented distribution, a low number of known localities (fewer than 10), and a presumed small population size (fewer than 1000 specimens are known). The threats to this species from increasing habitat disturbance and deforestation by the expanding human populations are expected to reduce further the already fragmented distribution of *P. infravallatus* and negatively affect its long-term survival. The combination of these factors has led to its listing as Vulnerable B1ab(i); D2. No conservation measures are known to be in place for this species, it is not found in a protected area, and the most recent specimens were collected in 1975.

The East African tree hole crab *Potamonautes raybouldi* is a recently-discovered Vulnerable species found in the East Usambara Mountains at Amani, as well as in the Shimba Hills in Kenya (Bayliss, 2002; Cumberlidge & Vannini, 2004). This species is threatened because it has highly specialised ecological requirements, occupying water-filled tree holes in deciduous forests, and this limits its Area of Occupancy to less than 2000 km² because forests with suitable trees are only patchily distributed across its range. The result is that it has a relatively narrow, fragmented distribution, a low number of known localities (fewer than 10), and a presumed small population size (fewer than 1000 specimens are known). The threats to this species come from increasing habitat disturbance and deforestation by the expanding human populations that are further reducing the already fragmented range of *P. raybouldi* and negatively affecting its long-term survival. The combination of these factors has led to its listing as Vulnerable B2ab(iii). No conservation measures are known to be in place for this species, it is not found in a protected area, and the most recent specimens were collected in 2002. Cumberlidge & Vannini (2004) and Reed & Cumberlidge (2006) provided detailed comparisons to other species of *Potamonautes*, as well as notes on its distribution, natural history and colour, and Cumberlidge *et al.* (2005) compared this species with other freshwater crabs that live in phytotelmic habitats.

Potamonautes unisulcatus is endemic to the forested slopes of the Uluguru Mountains and has been collected from just two localities, Bagilo and Bunduki (Reed & Cumberlidge, 2006). This highland species has been known to science since 1921 but has rarely been encountered during this time. This species is threatened because parts of its natural habitat (streams draining forested highlands) have been altered for agriculture. *Potamonautes unisulcatus* has a small Extent of Occurrence (probably less than 20 000 km²), and its population size is presumed to be small. It is only known from two localities because the localities from Selous GR and Nyange Island in Tanzania reported by Reed & Cumberlidge (2006) are considered doubtful following a re-examination of these specimens. The threats to this species from human-induced degradation driven by human population increases and industrial and agrarian development in this region are likely to limit further the already narrow distribution of *P. unisulcatus* and negatively affect its long-term survival. The combination of these factors has led to its listing as Vulnerable B1ab(i,ii,iii); D2. No conservation measures are known to be in place for this species, it is not found in a protected area, and the most recent specimens were collected in 1966.

Potamonautes xiphoidus is a recently-discovered Vulnerable species found on forested slopes of the East and West Usambara Mountains (Reed & Cumberlidge, 2006). This highland species has been known to science since 2006 and was described from specimens

collected in the 1970s. In the West Usambara Mountains it is found at Herkulu Estate, a tea plantation at 1666 m a.s.l. situated in the montane forest zone, in Lushoto District of Tanga Region. This species was found living in streams and behind dams in those areas where patches of forest have been retained to prevent soil erosion, but it has also been found living away from water in a cultivated area, as well as in a forested area at 1493.5 m a.s.l. under a rotten log near a bridge over a fast flowing river. Two new specimens have come to light since the work of Reed & Cumberlidge (2006) from Mazumbai in the West Usambara Mountains, although these were in the unidentified collection of the Natural History Museum in London and were collected in October 1973. *Potamonautes xiphoidus* has a relatively narrow Area of Occupancy (probably less than 2000 km²), because it is only known from three localities in two separated mountain ranges, and its population size is presumed to be small. The threats to this species from human-induced degradation driven by human population increases and industrial and agrarian development in this region are likely to limit further its already limited distribution, and negatively affect its long-term survival. The combination of these factors has led to its listing as Vulnerable VU B1ab(iii)+2ab(iii); D2. No conservation measures are known to be in place for this species, it is not found in a protected area, and the most recent specimens were collected in 1973.

Mammals

Among the carnivores, the Endangered African wild dog *Lycaon pictus,* the Vulnerable African lion *Panthera leo*, and the Near Threatened leopard *Panthera pardus* (Linnaeus, 1758) have been recorded from the Boni-Dodori National Reserves, Kenya (Mwinami *et al.*, 2013), and in a number of EACF sites in coastal Tanzania extending to the Selous Game Reserve and Mikumi National Park. An extensive study in Udzungwa found that distribution of the leopard within the montane forests was strongly predicted by distance to nearest village, distance to nearest ranger post, the protective status of the forest, and to a lesser extent but still significantly, canopy cover (Jones, 2013).

In addition to these large carnivores, smaller species like the Near Threatened African golden cat *Caracal aurata* (Temminck, 1827) may possibly be found in Maungu Hills and Arabuko-Sokoke Forest on the Kenya coast, but these observations need confirmation (Butynski *et al.*, 2012). The Vulnerable Sokoke dog mongoose *Bdeogale omnivora* is known from five sites in southern coastal Kenya including Arabuko-Sokoke Forest, Diani Forest, Shimba Hills (Engel & Van Rompaey, 1995), and the Dakatcha woodlands, with a putative record from the East Usambaras in Tanzania (Göller, 2005); in general, it has been rarely recorded and its conservation status requires updating. Other narrowly distributed populations of small carnivores include the Zanzibar race of the servaline genet *Genetta servalina* Pucheran, 1865 subsp. *archeri* Van Rompaey & Colyn, 1998 and Lowe's servaline genet *G. servalina* subsp. *lowei* Kingdon, 1977 of several Eastern Arc Mountain blocs (Van Rompaey & Colyn, 1998; Rovero *et al*. 2008a), which both require an evaluation of conservation status. A recently discovered population of this species was located in the East Usambara Mountains (Cordeiro & Seltzer, 2012), further illustrating how little we know about the small carnivores.

Among the ungulates, recent extensive surveys of Udzungwa forests have confirmed the presence of the Endangered Abbott's duiker *Cephalophus spadix* (figure 12) in six previously known forest sites and three additional sites (Jones & Bowkett, 2012; Jones, 2013). Rovero *et al*. (2013a) confirmed that this Tanzanian endemic and poorly known giant duiker has its stronghold population in Udzungwa, otherwise being present only in the Southern Highlands, Rubeho, West Usambara, and Kilimanjaro. Its presence in the Ulugurus has not been

confirmed over the last decade. The Critically Endangered Aders' duiker *Cephalophus adersi*, another small ungulate, is confined to Zanzibar coral rag thickets (Finnie, 2002) and coastal forest in Arabuko-Sokoke and Boni and Dodori, Kenya. The latter population was only recently discovered (Andanje *et al*., 2011) and while the population is sizeable, habitat degradation and unsustainable hunting remain severe threats (as on Zanzibar). Finally, in a survey of the poorly explored Boni and Dodori National Reserves, northeastern Kenya, Mwinami *et al*. (2013) reported the presence of the Vulnerable Haggard's oribi *Ourebia ourebi* subsp. *haggardi* in cultivated areas near Mangai. The Vulnerable common hippopotamus *Hippopotamus amphibius* and the Near Threatened coastal topi *Damaliscus lunatus* (Burchell, 1824) subsp. *topi* Blaine, 1914 were other notable records from this region (Mwinami *et al*., 2013).

Figure 12. The Endangered Abbott's duiker Cephalophus spadix; *only hand photo existing. Photograph by F. Rovero.*

Mwinami *et al*. (2013) reported Sykes' monkey *Cercopithecus mitis* as uncommon in the Boni-Dodori Reserves area, with the Vulnerable Pousargues' Sykes' monkey *C. mitis* subsp. *albotorquatus* as the most likely subspecies. In the Udzungwa Mountains, Araldi *et al*. (2014) conducted the first comprehensive population density estimation for the arboreal primates, including the endemic and Endangered Udzungwa red colobus *Procolobus gordonorum* (figure 13). Using systematic distance sampling, the authors estimated the global population of this monkey to be 60 000-65 000 individuals. While this may seem a large number, several subpopulations are vulnerable to hunting and degradation, and their habit of

preferring lowland to medium-elevation forest zones makes them especially at risk in the near future due to fast-increasing agricultural intensification in the Kilombero Valley.

Figure 13. The Endangered Udzungwa red colobus Procolobus gordonorum*. Photograph by Raffaele Merler.*

The Udzungwa subpopulation of the Critically Endangered kipunji *Rungwecebus kipunji* is confined to only one forest, Ndundulu, in the Kilombero Nature Reserve (Davenport *et al.*, 2008). A re-census in 2013 confirmed that the subpopulation does not exceed 200 individuals, and its range covers approximately 13 km^2 of southern Ndundulu (T. Jones, unpublished data). It is not known from the Udzungwa Mountains National Park, although it has been recorded ca. 1 km from the boundary. Hunting of this species is currently a rare occurrence, but its extremely small subpopulation size of dubious viability renders it vulnerable to disturbance, disease, and potentially even natural depredation.

Rovero *et a*l. (2012) contrasted the population relative abundance of diurnal primates in two forest blocks in the Udzungwa Mountains, one in Udzungwa Mountains National Park that is regularly patrolled by park rangers, and one in Uzungwa Scarp Forest Reserve (now Natue Reserve) that lacks any law enforcement measures on the ground. The five species studied included the Endangered Udzungwa red colobus *Procolobus gordonorum* and the Endangered Sanje mangabey *Cercocebus sanjei*. The authors measured how abundance changed between 2004 and 2009, assessed habitat and disturbance parameters, and evaluated hunting practices in the unprotected forest. They found that increased hunting in the unprotected forest has greatly reduced the population of the canopy-dwelling colobine monkeys (*P. gordonorum* and *Colobus angolensis* Sclater, 1860 subsp. *sharpei* Thomas, 1902). For primate conservation in the Udzungwa Mountains, Rovero *et al*. (2012) recommended increased law enforcement measures at Uzungwa Scarp Nature Reserve,

raising community awareness, supporting communities to establish livelihood alternatives to bush meat hunting, upgrading the forest reserve to a nature reserve (see EAMCEF, 2013), and restoring connectivity between Uzungwa Scarp Nature Reserve and protected areas to the north through the "Mngeta" conservation corridor.

Connectivity between isolated forest patches may also be imperative to other threatened EACF primates, such as the Endangered Tana River crested mangabey *Cercocebus galeritus*. Many primates are important for forest regeneration, as Kimuyu *et al*. (2012) showed for the Tana River crested mangabey in habitat gaps of fragmented Tana River gallery forests. Implementing restoration of tree species that they feed on may passively help to allow forest regeneration and connectivity of fragmented patches in this area as well as other fragmented forests in the EACF.

As previously circumscribed, the East African black-and-white colobus *Colobus angolensis* subsp. *palliatus* Peters, 1868 was considered to be discontinuously distributed in the southern Eastern Arc Mountains and Lake Nyasa highlands of Tanzania and in the coastal forests of eastern Tanzania and southeastern Kenya (Kingdon *et al*., 2008). A recent reassessment has shown that the montane and coastal populations are evolutionarily distinct, with subsp. *palliatus* confined to the coastal forests and the montane population belonging to subsp. *sharpei*, with a proposed status of Vulnerable (F. Rovero, pers. obs.).

Among the Afrotheria, Rovero *et al*. (2008b) described the grey-faced sengi *Rhynchocyon udzungwensis* (figure 14) from the Udzungwa Mountains as the fourth species of giant sengi. It was assessed as Vulnerable on the IUCN Red List due its confinement to only two forests in the area, Ndundulu-Luhomero to the west and Mwanihana to the east (Area of Occupancy estimated at 390 km^2) and their susceptibility to human disturbance (Rovero *et al*., 2013b). In addition, a previously unknown population of *Rhynchocyon* was reported in Boni and Dodori forests in 2010 (Andanje *et al*., 2010) and its taxonomic status is currently under investigation. The geographically closest species is the Endangered golden-rumped sengi, *Rhynchocyon chrysopygus*, and because the animals in Boni-Dodori appear to have a different pelage pattern, detailed morphological and genetic analysis are on-going. Unsustainable hunting for commercial exploitation and subsistence in Kenyan coastal forests threaten this newly discovered sengi population as well as the golden-rumped sengi (BirdLife International, 2013).

Nielsen *et al*. (2014) conducted an experiment asking respondents in the Kilombero Valley to choose between hunting or trading of bush meat and alternative salary-paying work in a set of hypothetical scenarios to determine the conditions under which they would change their current occupations. Economic considerations (donation of livestock, price of substitute meat, salary of alternative occupation) significantly outweighed the effect of costly enforcement measures (wildlife patrol frequency, size of fines), indicating that the creation of better alternative economic activities is a more cost-effective means of reducing poaching than punitive measures. These are important considerations in the Kilombero Valley, which has seen substantial declines of the Vulnerable common hippopotamus and the Vulnerable African elephant *Loxodonta africana*, as well as the puku antelope *Kobus vardoni* (Livingstone, 1857), which is scattered throughout eastern and central Africa but with an estimated 75% of its total population restricted to the Kilombero Valley (Jenkins *et al*., 2003).

Figure 14. The Vulnerable grey-faced sengi Rhynchocyon udzungwensis*. Photograph by F. Rovero.*

Elephants have been hard hit throughout East Africa, largely through direct persecution for ivory. Locations as far north in the EACF as Boni-Dodori in northeastern Kenya (Mwinami *et al.*, 2013) and through eastern Tanzania down to the south harbour this Vulnerable species. In the Udzungwas, the distribution and abundance of this enigmatic species were significantly predicted by distance to village and protective status (Jones, 2013). Overall among the large mammals of the Udzungwa forests, higher protective status (national park over nature reserve over forest reserve) and proximity to a ranger post are significant predictors of distribution, abundance, and species richness, arguing for increased ranger capacity and law enforcement and for upgrading of the most important sites' protective status in order to sustain the most threatened subpopulations. This is especially imperative because of the recent loss of corridors between the Udzungwa Mountains and the ecosystems of Ruaha-Rungwa to the northwest. In particular, the Selous-Mikumi corridors to the east have blocked historical movements of the Udzungwa subpopulation of the Vulnerable elephant and other large mammals such as buffalo and the Vulnerable African lion (Jones *et al.*, 2007, 2012). Conflict between elephants and farmers has also increased in the Udzungwas since 2008. The greatest immediate threat to this subpopulation, however, is increased poaching for ivory since around 2008 (J. Ponjoli, pers. comm.). As with other subpopulations in eastern Tanzania and Kenya, the subpopulation of the Udzungwas is below 1000 and likely declining.

KWS (2013) produced an action plan for elephant conservation in Arabuko-Sokoke Forest, with the overall goal to maintain a viable elephant population in Arabuko-Sokoke, enhance the connectivity and quality of habitat and the security of elephants while

safeguarding against human-elephant conflict, and increase the value of elephants to people and habitats. An action plan for elephants in the EACF in Tanzania is urgently needed.

Reptiles

The precise number of reptile species in the EACF is unknown, as new species continue to be described (*e.g.* Bauer & Menegon, 2006; Mariaux & Tilbury, 2006; Menegon *et al.*, 2009, 2011b, 2015; Fisseha *et al.*, 2013; Malonza & Bauer, 2014). Myers *et al.* (2000) reported 188 reptile species in the EACF, 50 of which were endemic. Seven years later, Burgess *et al.* (2007) reported 29 species of endemic reptiles in the EAMs, up from 26 in Broadley & Howell (2000), but many more species have been described since then (see above) and there are more candidate species awaiting description (*e.g.* Fisseha *et al.*, 2013).

In general, the number of species will likely continue to increase steadily with better sampling of the EAMs and molecular phylogenies facilitating our understanding of species diversity (*e.g.* Gravlund, 2002; Ceccarelli *et al.*, 2014). As a consequence of a more "even" geographic sampling and finer-scale understanding of species diversity, taxa are likely to be increasingly characterised as having more restricted ranges, often restricted to single mountain fragments. Previously, species' ranges were generally overestimated as species' delimitations were poorly characterised. The general reduction of ranges is likely to impact conservation assessments of reptiles on the basis of range size, with many species' ranges restricted and therefore meeting geographic range criteria for threatened categories. A general pattern is emerging of 'one mountain-one species' and is likely applicable to many of the montane, forest-associated reptile species restricted to the EAMs. For example, the *Kinyongia oxyrhina* (Klaver & Boehme, 1988) complex contains cryptic chameleon species awaiting formal description, as suggested by recently published phylogenies (Menegon *et al.*, 2009; Tolley *et al.*, 2011). The same is true for the *Trioceros deremensis* (Matschie, 1892) (figure 15) and *Trioceros werneri* (Tornier, 1899) species complexes, which consist of multiple candidate species occurring in separated mountains (Ceccarelli *et al.*, 2014). Menegon *et al.* (2014) investigated the phylogenetic relationships and historical biogeography of the East African species of the viper genus *Atheris*, including the Vulnerable Udzungwa Mountain bush viper *A. barbouri* and the Vulnerable Usambara eyelash viper *A. ceratophora* (figure 16). The latter, a relatively widespread EAM endemic, displays considerable genetic variation across its range, and may include cryptic taxa. Clearly further research across all reptile groups is required before species diversity can be fully evaluated, and this will have a substantial impact on conservation priorities.

The 24 globally threatened reptile species on the 2015 Red List all face very similar threats. All have relatively small ranges (the Area of Occupancy for the 17 species with listed areas is varies from 8 km^2 to 1631 km^2, with a mean of 392 km^2) and are threatened by habitat loss. These species are largely forest-associated, although four species—the Vulnerable montane rock agama *Agama montana*; the Vulnerable *Atheris barbouri*; the Endangered West Usambara blade-horned chameleon *Kinyongia multituberculata*; and the Endangered spiny-sided chameleon *Trioceros laterispinis*—occur in modified habitats, even far from true forests (Menegon, pers. obs.). Another six species appear to utilise modified habitat close toforests: the Endangered giant East Usambara blade-horned chameleon *Kinyongia matschiei*; the Endangered Usambara flap-nosed chameleon *Kinyongia tenuis*; the Endangered Vosseler's blade-horned chameleon *Kinyongia vosseleri*; the Endangered Uluguru worm snake *Letheobia uluguruensis*; the Endangered Uluguru limbless skink *Melanoseps emmrichi*; and the Critically Endangered ornate shovel-snout *Prosymna ornatissima*. The other 14 species do not appear to tolerate habitat modification. All of the 24 threatened reptiles are found in the EAMs,

Figure 15. Trioceros deremensis. *Photograph by M. Menegon*.

Figure 16. The Vulnerable Usambara eyelash viper Atheris ceratophora. *Photograph by P. Shirk*.

with four species also occurring outside the EAMs: the Endangered Magombera chameleon *Kinyongia magomberae* in the lowland Magombera Forest; the Endangered *Kinyongia tenuis* and the Endangered Usambara garter snake *Elapsoidea nigra* in the Shimba Hills of Kenya; and the Vulnerable Usambara vine snake *Thelotornis usambaricus* at Kaya Kambe on the Kenya coast.

Altogether 14 threatened species are in the international pet trade: *Agama montana*; *Atheris ceratophora*; *Kinyongia matschiei*; *Kinyongia multituberculata*; *Kinyongia tenuis*; *Kinyongia vosseleri*; the Vulnerable Usambara dwarf gecko *Lygodactylus gravis*; the Critically Endangered turquoise dwarf gecko *Lygodactylus williamsi*; *Melanoseps emmrichi*; the Critically Endangered Nguru pygmy chameleon *Rhampholeon acuminatus*; the Endangered Usambara spiny pygmy chameleon *Rhampholeon spinosus*; the Endangered East Usambara pygmy chameleon *Rhampholeon temporalis*; the Endangered Pare pygmy chameleon *Rhampholeon viridis*; and *Trioceros laterispinis*. Also in the pet trade are species closely related to the Endangered *Elapsoidea nigra* and the Vulnerable *Atheris barbouri*. Of the above, only the four *Kinyongia* species, *Rhampholeon spinosus* (as *Bradypodion spinosum* (Matschie, 1892)), and *Trioceros laterispinis* are CITES listed (CITES, 2015a). *Trioceros laterispinis* has an export quota of 20 F1 individuals in 2015, slightly below the annual average of 23 individuals from 2000 to 2015 (excluding 2002, when no quota was specified) (CITES, 2015b). *Kinyongia matschiei*, *K. multituberculata*, and *K. vosseleri* are somewhat more complicated because they were considered subspecies of the Near Threatened *K. fischeri* (Reichenow, 1887) until 2008 (Mariaux *et al.*, 2008). From 2000 through 2012, none of these species were listed separately from *K. fischeri*, which had an average export quota of 3230 individuals per year. Since 2013, *K. multituberculata* has had an annual export quota of 120 individuals, while *K. vosseleri* has had an annual export quota of 20 individuals. *Kinyongia matschiei* was not listed in 2013, but had an annual export quota of 20 individuals in 2014 and 2015. *Kinyongia tenuis* had an annual export quota of 18 individuals in 2015, down from an average of 21 per year from 2002 to 2015. Of the *Rhampholeon* species, only *R. spinosus* has been legally exported (through its previous listing as *Bradypodion spinosum*). It averaged 25 individuals per year from 2000 to 2011 (CITES, 2015b). However, many *Rhampholeon* species are still occasionally exported as species of *Rieppeleon* or similar genera (C.V. Anderson, pers. comm.).

Only two studies have investigated the abundances of any of these threatened species. Flecks *et al*. (2012) observed an average of 1.6 adults of *Lygodactulus williamsi* per screwpine (the Near Threatened *Pandanus rabaiensis* Rendle), the only plant that this species inhabits, in Kimboza Forest Reserve, one of only two areas with significant *L. williamsi* populations. The authors estimate a total of 148 684 $\pm$ 112 365 individuals, or 353 adults ha^{-1}, but suggest that the habitat could support a population 58% higher, and note that ca. 15% of the population was harvested for the international pet trade between 2004 and 2009.

Shirk *et al*. (2014) estimated population densities of three chameleon species (*Rhampholeon spinosus*, *R. temporalis*, and *Trioceros deremensis*) at elevations above 850 m in the East Usambara Mountains and the impact of forest fragmentation on these populations. Of the 1262 observed chameleons of the three target species, just 46 were the Endangered *Rhampholeon spinosus*, which greatly limited model precision. However, they were able to estimate the current *R. spinosus* population in the study area to be 17 117 (78 to 8 903 549). The study area is estimated to have lost ca. 46% of its forest cover over the past few millennia, but all three species avoid forest edges, resulting in an estimated population decline of 60% (69% decline to 97% increase) for the *R. spinosus* population. Similarly, the authors estimated that the Endangered *R. temporalis* population declined by 58% (63% decline to 52% decline), with a current population of 1 569 116 (278 541 to 18 289 404). The study area includes a large proportion of these species' known ranges, and is thus likely

representative of overall population trajectories. The same authors also estimated overall population densities for *Kinyongia matschiei* (0.6 per ha; 95% CI = 0.4 to 1.0), *K. tenuis* (0.5 per ha; 95% CI = 0.3 to 0.9), and *K. vosseleri* (0.9 per ha; 95% CI = 0.6 to 1.4) in forested habitat in the East Usambara Mountains (Shirk, unpublished data).

Obtaining population estimates for all of the threatened reptile species will be very difficult, however, because 5 of the 24 are fossorial (the Endangered Usambara spotted worm snake *Afrotyphlops gierrai*; the Critically Endangered *Prosymna ornatissima*; the Endangered *Melanoseps emmrichi* [presumed to be fossorial by Howell *et al*. (2015)]; and the Endangered *Letheobia uluguruensis*) or partly fossorial (the Endangered *Elapsoidea nigra*). Fossorial species are notoriously difficult to survey. Although standardised methods do exist (*e.g*. Measey *et al*., 2003), even large survey efforts often meet with limited success (*e.g*. Maritz & Alexander, 2009). The EACF is home to at least 60 species of fossorial reptiles, half of which are endemic to the EACF (Spawls *et al*., 2002; Broadley *et al*., 2006). Seven species are known only from a few collections (*Letheobia uluguruensis*, *Scolecoseps acontias* (Werner, 1913), *Melanoseps pygmaeus* Broadley, 2006) or a single collection (*Afrotyphlops platyrhynchus* (Sternfield, 1910); *Chirindia mpwapwaensis* (Loveridge, 1932); *Amblyodipsas teitana* Loveridge, 1936; *Scolecoseps litipoensis* Broadley, 1995). Currently, only two EACF reptile species, *Amblyodipsas teitana* and *Scolecoseps acontias*, are listed as data deficient on the IUCN Red List, despite many species known from a single or very few specimens (*e.g*. those listed above; *Lygodactylus broadleyi* Pasteur, 1995; *Lygodactylus inexpectatus* Pasteur, 1965; *Leptosiaphos rhomboidalis* Broadley, 1989; *Kinyongia magomberae*).

One of the better-studied groups of EACF reptiles are the chameleons, although, as with other taxa, ranges and phylogenies are currently in flux (see above) and very few population or ecological studies have been done (but see Patrick *et al*., 2011; Shirk *et al*., 2014). In addition to the threats of habitat loss and fragmentation facing all EACF species, many chameleon species are exported for the international pet trade. Although Kenya led the world in chameleon exports from 1978 to 1981, legislation passed in 1981 effectively shut down the export of chameleons (Carpenter *et al*., 2004; Jenkins *et al*., 2014). From 1977 (the earliest export records) to 2010, Tanzania has led the world in chameleon exports, accounting for 25% of total legal exports. Recently, Tanzania's share of the global trade in chameleons has increased: between 2004 and 2010, Tanzania accounted for 44% of world exports (Jenkins *et al*., 2014). Although Tanzania does set CITES export quotas for many of its chameleon species, some of these quotas may be unsustainable; *e.g*. 2014 and 2015 quotas allow for the annual export of 10 *Kinyongia magomberae*, a species that is known from only four observations, despite continuing efforts to find it; and 10 *Kinyongia uluguruensis* (Loveridge, 1957), another very rarely observed species (CITES, 2015b). In addition to legal chameleon exports, considerable illegal trade also occurs throughout Africa, and is difficult to control (Jenkins *et al*., 2014).

Another group of interest is the genus *Lygodactylus*, the dwarf geckos, with 62 currently recognised species (Uetz & Hošek, 2014) although the taxonomy is in flux (Röll *et al*., 2010; Castiglia & Annesi, 2011; Portik *et al*., 2013). Thirteen of these species occur in the EACF, and eight are likely to be endemic to the EACF (*L. broadleyi*; *L. conradti* Matschie, 1892 [possibly also in Cameroon]; *L. gravis*; *L. howelli* Pasteur & Broadley, 1988; *L. inexpectatus*; *L. kimhowelli* Pasteur, 1995 [possibly not a distinct species fide Röll *et al*., 2010]; *L. luteopicturatus* Pasteur, 1964; and *L. williamsi*) (Spawls *et al*., 2002; Uetz & Hošek, 2014) . Dwarf geckos are active during the day and tend to be territorial, but beyond this, very little natural history is known for many species (Spawls *et al*., 2002). Apart from

the previously mentioned population density estimates for *L. williamsi* (Flecks *et al.*, 2012), abundances are anecdotal.

Plants

Beginning in 2008, re-assessments of plant taxa already on the Red List resulted in downgrading of seven plant taxa to non-threatened status and removal from the 2013 EACF Outcomes Database either because of improved distributional data showing them to be more widespread than previously believed (*Lettowianthus stellatus* Diels, *Erythrina sacleuxii* Hua, *Strychnos mellodora* S. Moore, *Lovoa swynnertonii* Baker f., *Mesogyne insignis* Engl.) or to be well protected throughout their limited ranges (*Memecylon greenwayi* Brenan, *Trichilia lovettii* Cheek). *Ficus faulkneriana* was downgraded from Critically Endangered to Vulnerable, and therefore remains on the Outcomes Database. *Erythrina schliebenii* (figures 17, 18), previously assessed as Extinct, was reassessed as Critically Endangered following its rediscovery (see below). Thirteen plant taxa were upgraded to higher threat status because of improved data showing them to be highly restricted in distribution with continuing threats to their habitats: *Annickia kummerae*, *Greenwayodendron suaveolens* subsp. *usambaricum*, *Isolona cauliflora*, *Polyceratocarpus scheffleri*, *Toussaintia orientalis*, *Uvariodendron gorgonis*, *Uvariodendron oligocarpum*, *Uvariodendron usambarense*, *Uvariopsis bisexualis* , *Schefflera lukwangulensis*, *Millettia micans*, *Lijndenia brenanii*, and *Afrocarpus usambarensis*.

Two plant species previously thought to be extinct, the Lake Lutamba coral tree *Erythrina schliebenii* (Fabaceae), and *Karomia gigas*, have been rediscovered in the Namatimbili-Ngarama forest patch located about 35 km inland of Kilwa in southeastern Tanzania (Clarke *et al.*, 2011; BirdLife International, 2013). The EAPRLA has re-assessed both species as Critically Endangered. *Erythrina schliebenii* (figures 17, 18), recognised as one of the world's 100 most threatened species (Baillie & Butcher, 2012), has been propagated at State House Gardens in Tanzania and President Kikwete ceremonially planted a seedling of this species at State House (Ikulu) on 26 April 2014 as part of the celebration marking Union Day, the 50th anniversary of the unification of Tanganyika and Zanzibar to form the United Republic of Tanzania (Shaw, 2014).

Chase *et al.* (2013) described *Dorstenia christenhuizii* M.W. Chase & M.F. Fay (Moraceae), a new plant species endemic to Mbololo Hill in the Taita Hills of Kenya, also the only known locality of the Critically Endangered *Saintpaulia teitensis* (Gesneriaceae; figure 19). Kenfack *et al.* (2015) described *Crotonogynopsis australis* Kenfack & Gereau (Euphorbiaceae) from the Mahenge Scarp Forest Reserve and the Udzungwa Mountains National Park, localities in which many threatened EACF taxa occur.

Miya *et al.* (2012) indicated that the primary drivers of forest degradation and deforestation in Kilwa District, Tanzania, are timber extraction, charcoal burning, and fire. Among the tree species most strongly affected by these factors, only the Vulnerable African/white mahogany *Khaya anthotheca* is globally threatened, and is among the most harvested timber species in the villages surveyed. However, a number of these heavily impacted species are ecologically important for maintenance of the structure and integrity of their vegetation communities and/or are under considerable environmental pressure without rising to the level of being globally threatened. The Near Threatened African blackwood [*mpingo* (Swahili)] *Dalbergia melanoxylon* Guill. & Perr. is heavily extracted for artisanal carvings and manufacture of musical instruments. The Near Threatened bleedwood tree [*mninga* (Swahili)] *Pterocarpus angolensis* DC. is among the most harvested timber species,

Figure 17. The Critically Endangered Erythrina schliebenii, *branches with foliage, flowers, and fruits. Photograph by Cosmas Mligo.*

Figure 18. The Critically Endangered Erythrina schliebenii, *leaf and flowers. Photograph by Cosmas Mligo.*

Figure 19. The Critically Endangered Saintpaulia teitensis. *Photograph by L. Borghesio*.

as is the Near Threatened *mvule* (Swahili) *Milicia excelsa* (Welw.) C.C. Berg. The Near Threatened *Brachylaena huillensis* O. Hoffm. is among the tree species most preferred for charcoal, and its wood is also heavily exploited in the wood carving industries of Kenya and Tanzania (World Conservation Monitoring Centre, 1998). The dominant trees in Miombo woodland, species of *Brachystegia* and *Julbernardia*, are fire-sensitive at young age, and regular fire tends to decrease their number and thus alter the vegetation structure; *Julbernardia globiflora* (Benth.) Troupin is also among the species most preferred for charcoal. In Kilengwe Forest, a forest in Morogoro Rural District that is dominated by *J. globiflora*, many of these same species (*Khaya anthotheca*, *Dalbergia melanoxylon*, *Milicia excelsa*) are logged below their minimum required harvestable diameter (Kacholi, 2014).

Schaafsma *et al.* (2013) used market surveys and household census data to estimate extraction volumes of timber from the EAMs of Tanzania, and found clear signs of unsustainable hardwood harvesting. Using the timber classification by Ahrends (2011), they showed that in class I (the highest quality species), *Khaya anthotheca* is particularly difficult for carpenters, sawyers, and dealers to obtain, as are *Pterocarpus angolensis* and *Milicia excelsa*. In class II, the Endangered *Afrocarpus usambarensis* is increasingly scarce. Data on charcoal production in the EAMs of Tanzania (Schaafsma *et al.*, 2012) show a similar potential contribution to forest degradation, but without an explicit analysis of the species involved.

Ruuska (2013) reported that more than 40 tree species are used as firewood and charcoal in Dakatcha woodlands, and although the most commonly used species are not globally threatened with extinction, unsustainable charcoal production is a major factor in the decline of forest cover and habitat fragmentation in this area, with concentrations of thickets of the Vulnerable *Cynometra webberi* and woodlands of *Brachystegia spiciformis* Benth. no longer coinciding with the boundaries of the IBA on the site.

Burgess *et al.* (2010) identified the 20 vascular plant species that are invasive in the EAMs of Tanzania, as summarised in the 2012 status and trends report (BirdLife International, 2013). EAMCEF (2013) reported serious invasive species problems at Amani Nature Reserve and Udzungwa Mountains National Park involving species listed by Burgess *et al.* (2010), with the addition of common bamboo *Bambusa vulgaris* Schrad. ex J.C. Wendl. and the Asian bramble *Rubus niveus* Thunb. *Maesopsis eminii* is the most serious threat to Amani Nature Reserve.

Dimitrov *et al.* (2012) used the African violet genus, *Saintpaulia*, as a study system to elucidate factors and processes behind the accumulation of species in tropical montane areas of high biodiversity concentration. This genus is strictly endemic to the EACF, with seven of its eight species and all ten subspecies of *S. ionantha* currently listed as globally threatened. Results of the study support the hypothesis of climatically stable montane habitats acting as climatic refugia by preventing extinctions in lowland lineages during the Pleistocene. This confers particular importance to the conservation of these montane habitats for the continued survival of regional biodiversity in the face of future impacts of climate change.

IBA and KBA sites

Of the 64 currently recognised and proposed IBA and KBA sites in Kenya (BirdLife International, 2014a; appendix 2), all but three (Mount Kasigau, Taita District coastal forests, and Taita Hills forests) fall within designated Petroleum Exploration Blocks (Ministry of Energy, 2006). Plans for oil exploration in Arabuko-Sokoke Forest, which falls within Block L16, were put on hold due to opposition from conservation leaders and the local community (Good, 2014; The Star, 2014). The LAPPSET Corridor Project (World Resources Institute, 2015; Official Website of the President, 2016) proposes a new transport corridor including rail, road, and an oil pipeline from Lamu connecting Kenya with Ethiopia and South Sudan, and could pose threats to IBA and KBA sites in Lamu District (Boni and Dodori, Lamu District coastal forests, Lunghi Forest, Witu Forest Reserve). Mining projects in Tanzania (Tanzanian Ministry of Energy and Minerals & Spatial Dimensions, 2016) pose current and potential threats to IBA and KBA sites throughout the EACF of Tanzania, but information on which of these projects are currently operating and presenting threats to the environment is difficult to obtain.

RECOMMENDATIONS

The importance of the EACF, whether or not it is recognised as a global biodiversity hotspot in itself, continues to be enhanced by the discovery of new species, expanded and improved knowledge of the geographic and ecological distribution of its globally threatened taxa, new and revised IUCN Red List assessments, biodiversity inventories of currently recognised and potential new IBAs and KBAs, studies of forest health and fragmentation, improvement of environmental quality and natural resource allocation through application of Participatory Forest Management (PFM) and REDD+ projects, and mainstreaming of biodiversity into policy at local, regional, and national levels. At the same time threats continue to increase as a result of rapidly growing human populations, unsustainable development and resource extraction, environmental damage by invasive species, and uneven and often inadequate management of protected areas. Measures that can be taken to address the existing gaps in the knowledge needed to address these and other threats include the following:

i. Expanded use of standardised monitoring protocols to assess environmental status and management effectiveness of protected areas throughout the EACF;
ii. Enumeration and analysis of protected areas that could benefit by being upgraded to a higher protective status (*e.g.* from forest reserve to nature reserve);
iii. Clarification of the taxonomic status of rare and/or threatened fauna, particularly of isolated populations. Among the mammals, this should include the subspecies status of: servaline genet *Genetta servalina* (subsp. *lowei*?) in East Usambara; and Sykes' monkey *Cercopithecus mitis* (subsp. *albotorquatus*?) in Boni-Dodori landscape;
iv. Incorporation of accurate population estimates into sustainable CITES export quotas for rare and threatened species subject to international trade;
v. Intensive biodiversity inventories of undercollected areas throughout the EACF;
vi. More studies of extent and intensity of extraction activities of threatened and ecological keystone species and the impact of resource extraction (*e.g.* charcoal, fuelwood) on environmental health.

The successful reintroduction of the Kihansi spray toad *Nectophrynoides asperginis* into its native habitat after being listed as Extinct in the Wild should encourage *ex situ* propagation and reintroduction of other rare and threatened taxa. The Critically Endangered Lake Lutamba coral tree *Erythrina schliebenii*, now in cultivation at Tanzania State House (Ikulu), is a good candidate for reintroduction, and should serve as a flagship plant species for such efforts.

The 16 sites in the EACF that now qualify as IBAs or KBAs due to the presence of globally threatened taxa (see above under "RESULTS: Change in site status") should be appropriately added to the lists of protected sites in the EACF of Kenya and Tanzania (BirdLife International 2014a,b). Sites grouped together as *e.g.* "Lamu District coastal forests" could be listed as KBAs either collectively (as *e.g.* "Bagamoyo District coastal forests" in Tanzania), or individual sites could be singled out to be listed individually.

Tumbatu Island (Tanzania) has been considered a KBA due to the presence of the eastern tree hyrax *Dendrohyrax validus* True, 1890, which was listed as Vulnerable on the IUCN Red List until its re-assessment as Least Concern in 2006. With the loss of its only globally threatened species, Tumbatu Island should no longer be considered a KBA. Likewise, Kisiju Island (Tanzania) has been considered a KBA due to the presence of the Mafia writhing skink *Mochlus mafianum* (Broadley, 1994), which was listed as Endangered on the IUCN Red List until its re-assessment as Least Concern in 2014. With the loss of its only globally threatened species, Kisiju Island should no longer be considered a KBA.

Seven other sites currently listed as KBAs have no threatened taxa on the 2015 Outcomes Database. Bungu Forest Reserve has been merged into West Usambara, Lango ya Simba into Lower Tana River forests, and Mikindani (Mnima) into Lindi (Mkindani). Latham Island, Mtwara, Tanga North-Kibo Salt Pans, and Tanga South had no threatened taxa listed on the 2012 Outcomes Database, and still have none in 2015. These sites should also no longer be considered KBAs.

In addition to the above, 40 sites currently listed as KBAs have one to three globally threatened taxa, all of which were assessed only under Red List Categories and Criteria Version 2.3 (IUCN, 1994) and should therefore be re-assessed (IUCN, 2012b). The KBA status of these sites should be considered tentative until such re-assessment has been performed.

Environmental impact assessments for oil and gas exploration and mining projects should involve appropriate researchers with knowledge of the biodiversity values of the IBAs and

KBAs that may be impacted by these developments. The conservation community must provide adequate information to the relevant governmental authorities concerned with these extractive industries. The 2015 EACF Outcomes Database provides a wealth of information suitable for these purposes, and similar resources should be developed for other parts of Kenya and Tanzania.

The updated analysis of forest vertebrate importance and drivers of species richness for the EAMs recently conducted by Rovero *et al.* (2014) provides important recommendations for the conservation of the EAM forests by stressing, in particular, the need for re-presenting the proposal for inclusion of selected sites in the UNESCO World Heritage Site by the Tanzanian Government (Ministry of Natural Resources and Tourism, 2010). The authors recognise that the network of formally protected forests in the EAM is an asset, especially in view of a number of recently established or proposed nature reserves; however, they acknowledge that the long-term capacity to protect the forests needs enhancement to be effective. Besides the continued input of foreign donors, novel mechanisms of income generation will need to be explored by the Government of Tanzania, such as Payment for Ecosystem Services related to water use, pilot REDD+ schemes, and boosting tourism to the area. Although the value of nature-based tourism to the EAM is lower than that generated by Tanzania's large savannah and grassland reserves, the potential revenues from this sector are considerable and enhance the case for sustainable forest management (Bayliss *et al.*, 2014).

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Appendix 1. Globally threatened animal and plant taxa of the EACF.

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Animalia			
Amphibia			
Arthroleptidae			
Arthroleptis fichika Blackburn, 2009	EN	3.1	2010
Arthroleptis kidogo Blackburn, 2009	CR	3.1	2011
Arthroleptis nguruensis Poynton, Menegon & Loader, 2008	VU	3.1	2012
Arthroleptis nikeae Poynton, 2003	CR	3.1	2014
Arthroleptis tanneri Grandison, 1983	EN	3.1	2015
Arthroleptis xenodactylus Boulenger, 1909	EN	3.1	2015
Leptopelis grandiceps Ahl, 1929	VU	3.1	2013
Leptopelis parkeri Barbour & Loveridge, 1928	EN	3.1	2013
Leptopelis uluguruensis Barbour & Loveridge, 1928	EN	3.1	2013
Leptopelis vermiculatus (Boulenger, 1909)	EN	3.1	2014
Brevicipitidae			
Callulina dawida Loader, Measey, de Sá & Malonza, 2009	CR	3.1	2014
Callulina hanseni Loader, Gower, Müller & Menegon, 2010	CR	3.1	2012
Callulina kanga Loader, Gower, Müller & Menegon, 2010	CR	3.1	2012
Callulina kisiwamsitu de Sá, Loader & Channing, 2004	EN	3.1	2014
Callulina laphami Loader, Gower, Müller & Menegon, 2010	CR	3.1	2012
Callulina meteora Menegon, Gowder & Loader, 2011	CR	3.1	2013
Callulina shengena Loader, Gower, Ngalason & Menegon, 2010	CR	3.1	2012
Callulina stanleyi Loader, Gower, Ngalason & Menegon, 2010	CR	3.1	2012
Probreviceps durirostris Loader, Channing, Menegon & Davenport, 2006	EN	3.1	2013
Probreviceps loveridgei Parker, 1931	EN	3.1	2013
Probreviceps macrodactylus (Nieden, 1926)	EN	3.1	2013
Probreviceps rungwensis Loveridge, 1932	EN	3.1	2013
Probreviceps uluguruensis (Loveridge, 1925)	EN	3.1	2013
Bufonidae			
Churamiti maridadi Channing & Stanley, 2002	CR	3.1	2015
Mertensophryne howelli (Poynton & Clarke, 1999)	EN	3.1	2004
Mertensophryne usambarae (Poynton & Clarke, 1999)	EN	3.1	2004
Mertensophryne uzunguensis (Loveridge, 1932)	VU	3.1	2015
Nectophrynoides asperginis Poynton, Howell, Clarke & Lovett, 1999	EW	3.1	2015

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Nectophrynoides cryptus Perret, 1971	EN	3.1	2004
Nectophrynoides laticeps Channing, Menegon, Salvidio & Akker, 2005	CR	3.1	2015
Nectophrynoides minutus Perret, 1972	EN	3.1	2015
Nectophrynoides paulae Menegon, Salvidio, Ngalason & Loader, 2007	CR	3.1	2015
Nectophrynoides poyntoni Menegon, Salvidio & Loader, 2004	CR	3.1	2015
Nectophrynoides pseudotornieri Menegon, Salvidio & Loader, 2004	CR	3.1	2015
Nectophrynoides vestergaardi Menegon, Salvidio & Loader, 2004	EN	3.1	2015
Nectophrynoides viviparus (Tornier, 1905)	VU	3.1	2004
Nectophrynoides wendyae Clarke, 1988	CR	3.1	2015
Herpelidae			
Boulengerula changamwensis Loveridge, 1932	EN	3.1	2013
Boulengerula niedeni Müller, Measey, Loader & Malonza, 2005	EN	3.1	2013
Boulengerula taitana Loveridge, 1935	EN	3.1	2013
Hyperoliidae			
Afrixalus dorsimaculatus (Ahl, 1930)	VU	3.1	2008
Afrixalus morerei Dubois, 1986	VU	3.1	2004
Afrixalus sylvaticus Schiøtz, 1974	EN	3.1	2004
Afrixalus uluguruensis (Barbour & Loveridge, 1928)	EN	3.1	2008
Hyperolius kihangensis Schiøtz & Westergaard in Schiøtz, 1999	EN	3.1	2004
Hyperolius minutissimus Schiøtz, 1975	VU	3.1	2004
Hyperolius puncticulatus (Pfeffer, 1893)	EN	3.1	2008
Hyperolius rubrovermiculatus Schiøtz, 1975	EN	3.1	2004
Hyperolius tanneri Schiøtz, 1982	CR	3.1	2015
Hyperolius watsonae Pickersgill, 2007	CR	3.1	2008
Kassina jozani Msuya, Howell & Channing, 2006	EN	3.1	2008
Phlyctimantis keithae Schiøtz, 1975	EN	3.1	2015
Microhylidae			
Hoplophryne rogersi Barbour & Loveridge, 1928	EN	3.1	2013
Hoplophryne uluguruensis Barbour & Loveridge, 1928	EN	3.1	2013
Parhoplophryne usambarica Barbour & Loveridge, 1928	CR	3.1	2014
Petropedetidae			
Arthroleptides martiensseni Nieden, 1911	EN	3.1	2013
Arthroleptides yakusini Channing, Howell & Moyer, 2002	EN	3.1	2013
Phrynobatrachidae			
Phrynobatrachus krefftii Boulenger, 1909	EN	3.1	2013
Phrynobatrachus pakenhami Loveridge, 1941	EN	3.1	2008
Phrynobatrachus ungujae Pickersgill, 2007	EN	3.1	2008

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Phrynobatrachus uzungwensis Grandison & Howell, 1984	VU	3.1	2004
Aves			
Accipitridae			
Aquila nipalensis Hodgson, 1833	EN	3.1	2015
Gyps africanus Salvadori, 1865	CR	3.1	2015
Gyps rueppelli (Brehm, 1852)	CR	3.1	2015
Necrosyrtes monachus (Temminck, 1823)	CR	3.1	2015
Neophron percnopterus (Linnaeus, 1758)	EN	3.1	2015
Polemaetus bellicosus (Daudin, 1800)	VU	3.1	2013
Sagittarius serpentarius (Miller, 1779)	VU	3.1	2013
Torgos tracheliotos (Forster, 1791)	EN	3.1	2015
Trigonoceps occipitalis (Burchell, 1824)	CR	3.1	2015
Ardeidae			
Ardeola idae (Hartlaub, 1860)	EN	3.1	2012
Bucorvidae			
Bucorvus leadbeateri (Vigors, 1825)	VU	3.1	2012
Cisticolidae			
Apalis chariessa Reichenow, 1879	VU	3.1	2012
Apalis fuscigularis Moreau, 1938	CR	3.1	2015
Columbidae			
Treron pembaensis Pakenham, 1940	VU	3.1	2012
Falconidae			
Falco fasciinucha Reichenow & Neumann, 1895	VU	3.1	2014
Glareolidae			
Glareola ocularis Verreau, 1833	VU	3.1	2012
Gruidae			
Balearica regulorum (Bennett, 1834)	EN	3.1	2013
Hirudinidae			
Hirundo atrocaerulea Sundevall, 1850	VU	3.1	2012
Laniidae			
Malaconotus alius Friedmann, 1927	CR	3.1	2012
Motacillidae			
Anthus sokokensis van Someren, 1921	EN	3.1	2012
Muscicapidae			
Modulatrix orostruthus (Vincent, 1933)	VU	3.1	2013
Sheppardia aurantiithorax Beresford, Fjeldså & Kiwe, 2004	EN	3.1	2012
Sheppardia lowei (Grant & Mackworth-Praed, 1941)	VU	3.1	2012
Sheppardia montana (Reichenow, 1907)	EN	3.1	2012
Swynnertonia swynnertoni (Shelley, 1906)	VU	3.1	2013
Nectariniidae			
Anthreptes pallidigaster Sclater & Moreau, 1935	EN	3.1	2012

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Anthreptes rubritorques Reichenow, 1905	VU	3.1	2012
Nectarinia loveridgei (Hartert, 1922)	EN	3.1	2012
Nectarinia rufipennis Jensen, 1983	VU	3.1	2012
Phasianidae			
Xenoperdix udzungwensis Dinesen, Lehmberg, Svendsen, Hansen et al., 1994	EN	3.1	2012
Ploceidae			
Ploceus burnieri Baker & Baker, 1990	VU	3.1	2012
Ploceus golandi (Clarke, 1913)	EN	3.1	2012
Ploceus nicolli Sclater, 1931	EN	3.1	2012
Strigidae			
Otus ireneae Ripley, 1966	EN	3.1	2012
Otus pembaensis Pakenham, 1937	VU	3.1	2012
Struthionidae			
Struthio molybdophanes Reichenow, 1883	VU	3.1	2014
Sturnidae			
Cinnyricinclus femoralis (Richmond, 1897)	VU	3.1	2012
Sylviidae			
Acrocephalus griseldis (Hartlaub, 1891)	EN	3.1	2012
Artisornis moreaui (Sclater, 1931)	CR	3.1	2015
Bathmocercus winifredae (Moreau, 1938)	VU	3.1	2012
Hyliota usambara Sclater, 1932	EN	3.1	2012
Turdidae			
Turdus helleri (Mearns, 1913)	CR	3.1	2015
Zoothera guttata (Vigors, 1831)	EN	3.1	2012
Gastropoda			
Ampullariidae			
Lanistes alexandri Bourguignat, 1850	EN	2.3	1996
Lanistes ciliatus von Martens, 1898	VU	3.1	2010
Lanistes farleri Craven, 1880	VU	3.1	2010
Bithyniidae			
Gabiella verdcourti (Mandahl-Barth, 1968)	EN	3.1	2010
Incertihydrobia teesdalei (Verdcourt, 1958)	CR	3.1	2010
Helicarionidae			
Zingis radiolata von Martens, 1878	CR	3.1	2004
Paludomidae			
Cleopatra exarata (von Martens, 1878)	VU	3.1	2010
Streptaxidae			
Gulella amboniensis Tattersfield, 1998	VU	2.3	2000
Gulella taitensis Verdcourt, 1963	EN	3.1	2004
Urocyclidae			
Thapsia buraensis Verdcourt, 1982	EN	3.1	2004

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Insecta			
Acrididae			
Acanthoxia aculeus Grunshaw, 1986	EN	3.1	2013
Acrida bara Steinman, 1963	VU	3.1	2013
Acrotylus apicalis Bolívar, 1908	VU	3.1	2013
Acteana alazonica Karsch, 1896	EN	3.1	2013
Afrophlaeoba euthynota Jago, 1983	EN	3.1	2013
Afrophlaeoba longicornis Jago, 1983	EN	3.1	2013
Afrophlaeoba nguru Jago, 1983	EN	3.1	2013
Afrophlaeoba usambarica (Ramme, 1929)	VU	3.1	2013
Allaga ambigua Karsch, 1896	CR	3.1	2013
Anischnansis burtti (Uvarov, 1941)	CR	3.1	2013
Aresceutica morogorica Dirsh, 1954	EN	3.1	2013
Aresceutica subnuda Karsch, 1896	EN	3.1	2013
Burttia sylvatica Dirsh, 1951	CR	3.1	2013
Cardeniopsis regalis (Karny, 1907)	VU	3.1	2013
Cyphocerastis uluguruensis Johnsen, 1987	CR	3.1	2014
Eupropacris abbreviata Miller, 1929	CR	3.1	2014
Eupropacris pompalis (Karsch, 1896)	EN	3.1	2014
Eupropacris uniformis Ramme, 1929	VU	3.1	2014
Heteracris trimaculata Grunshaw, 1991	VU	3.1	2014
Ixalidium sjostedti Kevan, 1950	VU	3.1	2014
Ixalidium transiens Ramme, 1929	VU	3.1	2014
Physocrobylus tessa Hochkirch, 1996	CR	3.1	2014
Calopterygidae			
Umma declivum Förster, 1906	VU	3.1	2010
Chlorocyphidae			
Platycypha auripes (Förster, 1906)	VU	3.1	2010
Coenagrionidae			
Coryphagrion grandis Morton, 1924	VU	3.1	2010
Teinobasis alluaudi (Martin, 1896)	VU	3.1	2006
Euschmidtiidae			
Chromomastax jagoi Descamps, 1973	EN	3.1	2014
Chromomastax movogovodia Descamps, 1964	CR	3.1	2014
Euschmidtia bidens Descamps, 1964	CR	3.1	2014
Euschmidtia burtti Descamps, 1964	CR	3.1	2014
Euschmidtia dirshi Descamps, 1964	CR	3.1	2014
Euschmidtia phippsi Descamps, 1964	CR	3.1	2014
Euschmidtia tangana Descamps, 1964	EN	3.1	2014
Euschmidtia uvarovi Descamps, 1964	CR	3.1	2014
Euschmidtia viridifasciata Descamps, 1964	CR	3.1	2014
Gomphidae			
Nepogomphoides stuhlmanni Karsch, 1899	VU	3.1	2010

Globally Threatened Taxon accepted name	Status 2015	RL version	Year assessed
Lentulidae			
Chromousambilla burtti Jago, 1981	CR	3.1	2014
Libellulidae			
Micromacromia miraculosa (Förster, 1906)	CR	3.1	2010
Megapodagrionidae			
Amanipodagrion gilliesi Pinhey, 1962	CR	3.1	2010
Platycnemididiae			
Platycnemis pembipes Dijkstra, Clausnitzer & Martens, 2007	CR	3.1	2007
Scarabaeidae			
Clypeodrepanus striatus (Boucomont, 1921)	VU	3.1	2013
Proagoderus uluguru (Frey, 1975)	EN	3.1	2013
Thericleidae			
Acanthothericles bicoloripes Descamps, 1977	CR	3.1	2014
Malacostraca			
Potamonautidae			
Potamonautes infravallatus (Hilgendorf, 1898)	VU	3.1	2008
Potamonautes raybouldi Cumberlidge & Vannini, 2004	VU	3.1	2008
Potamonautes unisulcatus (Rathbun, 1921)	VU	3.1	2008
Potamonautes xiphoidus Reed & Cumberlidge, 2006	VU	3.1	2008
Mammalia			
Bovidae			
Cephalophus adersi Thomas, 1918	CR	3.1	2008
Cephalophus spadix True, 1890	EN	3.1	2008
Ourebia ourebi (Zimmermann, 1783) subsp. *haggardi* (Thomas, 1895)	VU	3.1	2008
Canidae			
Lycaon pictus (Temminck, 1820)	EN	3.1	2012
Cercopithecidae			
Cercocebus galeritus Peters, 1879	EN	3.1	2008
Cercocebus sanjei Mittermeier, 1986	EN	3.1	2008
Cercopithecus mitis Wolf, 1822 subsp. *albotorquatus* de Pousargues, 1896	VU	3.1	2008
Procolobus gordonorum (Matschie, 1900)	EN	3.1	2008
Procolobus kirkii (Gray, 1868)	EN	3.1	2008
Procolobus rufomitratus (Peters, 1879) subsp. *rufomitratus*	EN	3.1	2008
Rungwecebus kipunji (Ehardt, Butynski, Jones & Davenport, 2005)	CR	3.1	2008
Elephantidae			
Loxodonta africana (Blumenbach, 1797)	VU	3.1	2008
Emballonuridae			
Taphozous hildegardeae Thomas, 1909	VU	3.1	2008

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Felidae			
Panthera leo (Linnaeus, 1758)	VU	3.1	2015
Galagonidae			
Galagoides rondoensis Honess in Kingdon, 1997	CR	3.1	2008
Herpestidae			
Bdeogale omnivora Heller, 1913	VU	3.1	2008
Hippopotamidae			
Hippopotamus amphibius Linnaeus, 1758	VU	3.1	2008
Macroscelididae			
Rhynchocyon chrysopygus Günther, 1881	EN	3.1	2015
Rhynchocyon petersi Bocage, 1880	VU	3.1	2008
Rhynchocyon udzungwensis Rathbun & Rovero, 2008	VU	3.1	2015
Manidae			
Smutsia temminckii (Smuts, 1832)	VU	3.1	2014
Pteropodidae			
Myonycteris relicta Bergmans, 1980	VU	3.1	2008
Pteropus voeltzkowi Matschie, 1909	VU	3.1	2008
Rhinocerotidae			
Diceros bicornis (Linnaeus, 1758)	CR	3.1	2012
Soricidae			
Congosorex phillipsorum Stanley, Rogers & Hutterer, 2005	CR	3.1	2008
Crocidura desperata Hutterer, Jenkins & Verheyen, 1991	EN	3.1	2008
Crocidura tansaniana Hutterer, 1986	EN	3.1	2008
Crocidura telfordi Hutterer, 1986	EN	3.1	2008
Crocidura usambarae Dippenaar, 1980	EN	3.1	2008
Myosorex geata (Allen & Loveridge, 1927)	EN	3.1	2008
Myosorex kihaulei Stanley & Hutterer, 2000	EN	3.1	2008
Suncus aequatorius Heller, 1912	CR	3.1	2008
Sylvisorex howelli Jenkins, 1984	EN	3.1	2008
Reptilia			
Agamidae			
Agama montana Barbour & Loveridge, 1928	VU	3.1	2015
Chamaeleonidae			
Kinyongia magomberae Menegon, Tolley, Jones, Rovero, Marshall & Tilbury, 2009	EN	3.1	2014
Kinyongia matschiei (Werner, 1895)	EN	3.1	2014
Kinyongia multituberculata (Nieden, 1913)	EN	3.1	2014
Kinyongia tenuis (Matschie, 1892)	EN	3.1	2014
Kinyongia vosseleri (Nieden, 1913)	EN	3.1	2014
Rhampholeon acuminatus Mariaux & Tilbury, 2006	CR	3.1	2014
Rhampholeon beraduccii Mariaux & Tilbury, 2006	VU	3.1	2014
Rhampholeon spinosus (Matschie, 1892)	EN	3.1	2014

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Rhampholeon temporalis (Matschie, 1892)	EN	3.1	2014
Rhampholeon viridis Mariaux & Tilbury, 2006	EN	3.1	2014
Trioceros laterispinis (Loveridge, 1932)	EN	3.1	2014
Colubridae			
Thelotornis usambaricus Broadley, 2001	VU	3.1	2015
Elapidae			
Elapsoidea nigra Günther, 1888	EN	3.1	2010
Gekkonidae			
Lygodactylus gravis Pasteur, 1965	VU	3.1	2014
Lygodactylus williamsi Loveridge, 1952	CR	3.1	2012
Gerrhosauridae			
Tetradactylus udzungwensis Salvidio, Menegon, Sindaco & Moyer, 2004	EN	3.1	2014
Prosymnidae			
Prosymna ornatissima Barbour & Loveridge, 1928	CR	3.1	2015
Pseudoxyrophiidae			
Buhoma procterae (Loveridge, 1922)	VU	3.1	2014
Scincidae			
Melanoseps emmrichi Broadley in Broadley, Whiting & Bauer, 2006	EN	3.1	2015
Typhlopidae			
Afrotyphlops gierrai (Mocqard, 1897)	EN	3.1	2010
Letheobia uluguruensis (Barbour & Loveridge, 1928)	EN	3.1	2014
Viperidae			
Atheris barbouri Loveridge, 1930	VU	3.1	2010
Atheris ceratophora Werner, 1895	VU	3.1	2010
Plantae			
Bryopsida			
Pterobryaceae			
Renauldia lycopodioides Bizot ex Pócs	EN	2.3	2000
Cycadopsida			
Zamiaceae			
Encephalartos kanga Pócs & Q.Luke	CR	3.1	2010
Encephalartos kisambo Faden & Beentje	EN	3.1	2010
Encephalartos sclavoi De Luca, D.W.Stev. & A.Moretti	CR	3.1	2010
Jungermanniopsida			
Lejeuneaceae			
Cladolejeunea aberrans (Steph.) Zwickel	EN	2.3	2000
Liliopsida			
Aloaceae			
Aloe ballyi Reynolds	EN	3.1	2009
Aloe boscawenii Christian	CR	3.1	2009
Aloe brachystachys Baker	VU	3.1	2009

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Aloe brandhamii S.Carter	VU	3.1	2009
Aloe bussei A.Berger	VU	3.1	2009
Aloe classenii Reynolds	CR	3.1	2009
Aloe dorotheae A.Berger	CR	3.1	2009
Aloe flexilifolia Christian	CR	3.1	2009
Aloe kilifiensis Christian	EN	3.1	2009
Aloe leachii Reynolds	VU	3.1	2009
Aloe leptosiphon A.Berger	CR	3.1	2009
Aloe massawana Reynolds	VU	3.1	2009
Aloe pembana L.E.Newton	CR	3.1	2009
Aloe penduliflora Baker	EN	3.1	2009
Aloe ukambensis Reynolds	VU	3.1	2013
Araceae			
Amorphophallus stuhlmannii (Engl.) Engl. & Gehrm.	EN	3.1	2009
Gonatopus marattioides (Peter) Bogner	EN	3.1	2009
Gonatopus petiolulatus (Peter) Bogner	VU	3.1	2009
Stylochaeton bogneri Mayo	EN	3.1	2009
Stylochaeton crassispathus Bogner	VU	3.1	2009
Stylochaeton euryphyllus Mildbr.	VU	3.1	2009
Stylochaeton milneanus Mayo	VU	3.1	2009
Asparagaceae			
Asparagus usambarensis Sebsebe	EN	3.1	2009
Asphodelaceae			
Kniphofia goetzei Engl.	VU	3.1	2009
Burmanniaceae			
Afrothismia baerae Cheek	CR	3.1	2009
Afrothismia insignis Cowley	VU	3.1	2009
Gymnosiphon usambaricus Engl.	EN	3.1	2009
Cyperaceae			
Cyperus afrodunensis Lye	EN	3.1	2013
Cyperus microumbellatus Lye	CR	3.1	2010
Dioscoreaceae			
Dioscorea longicuspis R.Knuth	VU	3.1	2009
Eriocaulaceae			
Eriocaulon selousii S.M.Phillips	EN	3.1	2012
Gramineae			
Alloeochaete uluguruensis Kabuye	VU	3.1	2013
Eragrostis ambleia Clayton	VU	3.1	2013
Eragrostis muerensis Pilg.	CR	3.1	2013
Eragrostis perbella K. Schum.	VU	3.1	2013
Eragrostis pseudopoa C.E.Hubb.	EN	3.1	2013
Eragrostis usambarensis Napper	VU	3.1	2013
Hickelia africana S.Dransf.	EN	3.1	2013

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Humbertochloa greenwayi C.E.Hubb.	CR	3.1	2013
Hylebates chlorochloe (K.Schum.) Napper	VU	3.1	2013
Panicum nudiflorum Renvoize	EN	3.1	2013
Panicum pinifolium Chiov.	VU	3.1	2013
Panicum vollesenii Renvoize	VU	3.1	2013
Iridaceae			
Moraea callista Goldblatt	VU	3.1	2009
Orchidaceae			
Ancistrorhynchus laxiflorus Mansf.	VU	3.1	2013
Ancistrorhynchus refractus (Kraenzl.) Summerh.	EN	3.1	2013
Angraecopsis parva (P.J.Cribb) P.J.Cribb	VU	3.1	2013
Ansellia africana Lindl.	VU	3.1	2013
Bulbophyllum concatenatum P.J.Cribb & P.Taylor	EN	3.1	2013
Cynorkis buchwaldiana Kraenzl. subsp. *braunii* (Kraenzl.) Summerh.	VU	3.1	2013
Cynorkis buchwaldiana Kraenzl. subsp. *buchwaldiana*	CR	3.1	2013
*Cynorkis uncata (*Rolfe) Kraenzl.	VU	3.1	2013
Cynorkis usambarae Rolfe	CR	3.1	2013
Diaphananthe orientalis (Mansf.) F.N.Rasm.	CR	3.1	2013
Diaphananthe tanneri P.J.Cribb	EN	3.1	2013
Disa tanganyikensis Summerh.	EN	3.1	2013
Disperis aphylla Kraenzl.	VU	3.1	2013
Disperis aphylla Kraenza. subsp. *bifolia* Verdc.	EN	3.1	2013
Disperis egregia Summerh.	CR	3.1	2013
Disperis kerstenii Rchb.f.	EN	3.1	2013
Habenaria isoantha Schltr.	EN	3.1	2013
Habenaria leucoceras Schltr.	EN	3.1	2013
Habenaria plectromaniaca Rchb.f. & S.Moore	VU	3.1	2013
Habenaria richardsiae Summerh.	EN	3.1	2013
Habenaria stylites Rchb.f. & S.Moore	VU	3.1	2013
Habenaria stylites Rchb.f. & S.Moore subsp. *stylites*	EN	3.1	2013
Mystacidium nguruense P.J.Cribb	CR	3.1	2013
Mystacidium pulchellum (Kraenzl.) Schltr.	EN	3.1	2013
Neobenthamia gracilis Rolfe	VU	3.1	2013
Polystachya acuminata Summerh.	CR	3.1	2013
Polystachya albescens Ridl. subsp. *kraenzlinii* (Rolfe) Summerh.	VU	3.1	2013
Polystachya caespitifica Kraenzl. subsp. *caespitifica*	EN	3.1	2013
Polystachya caespitifica Kraenzl. subsp. *latilabris* (Summerh.) P.J.Cribb & Podz.	VU	3.1	2013
Polystachya canaliculata Summerh.	CR	3.1	2013
Polystachya caudata Summerh.	EN	3.1	2013
Polystachya disiformis P.J.Cribb	EN	3.1	2013
Polystachya fischeri Kraenzl.	EN	3.1	2013

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Polystachya holstii Kraenzl.	EN	3.1	2013
Polystachya isochiloides Summerh.	EN	3.1	2013
Polystachya longiscapa Summerh.	EN	3.1	2013
Polystachya mazumbaiensis P.J.Cribb & Podz.	EN	3.1	2013
Polystachya porphyrochila J.L.Stewart	CR	3.1	2013
Polystachya praecipitis Summerh.	EN	3.1	2013
Polystachya pudorina P.J.Cribb	EN	3.1	2013
Polystachya rugosilabia Summerh.	CR	3.1	2013
Polystachya serpentina P.J.Cribb	EN	3.1	2013
Polystachya shega Kraenzl.	EN	3.1	2013
Polystachya subdiphylla Summerh.	EN	3.1	2013
Polystachya teitensis P.J.Cribb	EN	3.1	2013
Polystachya uluguruensis P.J.Cribb & Podz.	EN	3.1	2013
Polystachya xerophila Kraenzl.	EN	3.1	2013
Stolzia angustifolia Mansf.	EN	3.1	2013
Stolzia atrorubra Mansf.	EN	3.1	2013
Stolzia christopheri P.J.Cribb	EN	3.1	2013
Stolzia leedalii P.J.Cribb	EN	3.1	2013
Stolzia moniliformis P.J.Cribb	EN	3.1	2013
Stolzia oligantha Mansf.	EN	3.1	2013
Stolzia viridis P.J.Cribb	EN	3.1	2013
Tridactyle brevifolia Mansf.	EN	3.1	2013
Tridactyle cruciformis Summerh.	EN	3.1	2013
Tridactyle minuta P.J.Cribb	EN	3.1	2013
Tridactyle sarcodantha Mansf.	CR	3.1	2013
Tridactyle tanneri P.J.Cribb	EN	3.1	2013
Palmae			
Dypsis pembana (H.E.Moore) Beentje & J.Dransf.	VU	3.1	2009
Zosteraceae			
Zostera capensis Setch.	VU	3.1	2010
Lycopodiopsida			
Lycopodiaceae			
Huperzia dacrydioides (Baker) Pic.Serm. subsp. *dura* (Pic.Serm.) Verdc.	VU	3.1	2013
Magnoliopsida			
Acanthaceae			
Anisotes spectabilis (Mildbr.) Vollesen	EN	3.1	2015
Anisotes tangensis Baden	EN	3.1	2015
Anisotes umbrosus Milne-Redh.	EN	3.1	2015
Asystasia linearis S. Moore	EN	3.1	2015
Asystasia minutiflora Ensermu & Vollesen	VU	3.1	2015
Asystasia schliebenii Mildbr.	EN	3.1	2015
Asystasia tanzaniensis Ensermu & Vollesen	EN	3.1	2015

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Barleria amanensis Lindau	EN	3.1	2015
Barleria aristata I.Darbysh.	EN	3.1	2015
Barleria faulknerae I.Darbysh.	EN	3.1	2015
Barleria laceratiflora Lindau	EN	3.1	2015
Barleria lukei I.Darbysh.	EN	3.1	2015
Barleria lukwangulensis Mildbr. ex I.Darbysh.	VU	3.1	2015
Barleria maculata S.Moore	EN	3.1	2015
Barleria maritima I.Darbysh	VU	3.1	2015
Barleria pseudosomalia I.Darbysh	EN	3.1	2015
Barleria rhynchocarpa Klotzsch	VU	3.1	2015
Barleria scandens I.Darbysh.	VU	3.1	2015
Barleria subregularis I.Darbysh.	VU	3.1	2015
Barleria vollesenii I.Darbysh.	EN	3.1	2015
Barleria whytei S.Moore	EN	3.1	2015
Blepharis chrysotricha Lindau	VU	3.1	2015
Blepharis ilicifolia Napper	EN	3.1	2015
Blepharis kenyensis Vollesen	EN	3.1	2015
Blepharis pratensis S.Moore	VU	3.1	2015
Blepharis refracta Mildbr.	CR	3.1	2015
Blepharis tanzaniensis Vollesen	EN	3.1	2015
Brachystephanus schliebenii (Mildbr.) Champl.	CR	3.1	2015
Brillantaisia stenopteris Sidwell	EN	3.1	2015
Cephalophis lukei Vollesen	EN	3.1	2015
Crabbea longipes Mildbr.	EN	3.1	2015
Crossandra cepahlostachya Mildbr.	EN	3.1	2015
Crossandra friesiorum Mildbr.	VU	3.1	2015
Dicliptera grandiflora Gilli	EN	3.1	2015
Dicliptera inconspicua I.Darbysh.	VU	3.1	2015
Duosperma longicalyx (Deflers) Vollesen subsp. *mkomaziense Vollesen*	EN	3.1	2015
Duosperma subquadrangulare Vollesen	VU	3.1	2015
Duosperma trachyphyllum (Bullock) Dayton	EN	3.1	2015
Dyschoriste keniensis Malombe, Mwachala & Vollesen subsp. *glandulifera* Malombe, Mwachala & Vollesen	VU	3.1	2015
Dyschoriste kitongaensis Vollesen	EN	3.1	2015
Dyschoriste subquadrangularis (Lindau) C.B.Clarke	VU	3.1	2015
Ecbolium tanzaniense Vollesen	VU	3.1	2015
Isoglossa anisophylla Brummitt	EN	3.1	2015
Isoglossa asystasioides I.Darbysh. & Ensermu	CR	3.1	2015
Isoglossa bondwaensis I.Darbysh.	EN	3.1	2015
Isoglossa candelabrum Lindau	EN	3.1	2015
Isoglossa faulknerae I.Darbysh.	EN	3.1	2015
Isoglossa oreacanthoides Mildbr.	EN	3.1	2015

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Isoglossa substrobilina C.B.Clarke subsp. *tenuispicata* I.Darbysh.	VU	3.1	2015
Isoglossa variegata I.Darbysh.	EN	3.1	2015
Isoglossa ventricosa I.Darbysh.	EN	3.1	2015
Justicia beloperonoides Lindau	EN	3.1	2015
Justicia brevipila Hedrén	VU	3.1	2015
Justicia breviracemosa Vollesen	EN	3.1	2015
Justicia callopsoidea Vollesen	CR	3.1	2015
Justicia drummondii Vollesen	CR	3.1	2015
Justicia euosmia Lindau	EN	3.1	2015
Justicia faulknerae Vollesen	EN	3.1	2015
Justicia galeata Hedrén	VU	3.1	2015
Justicia heterotricha Mildbr.	VU	3.1	2015
*Justicia kiborianensis (*Hedrén) Vollesen	VU	3.1	2015
Justicia lukei Vollesen	VU	3.1	2015
Justicia migeodii (S.Moore) V.A.W.Graham	VU	3.1	2015
Justicia mkungweensis Vollesen	CR	3.1	2015
Justicia rodgersii Vollesen	VU	3.1	2015
Justicia roseobracteata Vollesen	EN	3.1	2015
Justicia sulphuriflora Hedrén	VU	3.1	2015
Justicia ukagurensis Hedrén	VU	3.1	2015
Lepidagathis plantaginea Mildbr.	EN	3.1	2015
Megalochlamys tanaensis Vollesen	CR	3.1	2015
Mimulopsis macrantha (Mildbr.) E.Tripp	EN	3.1	2015
Mimulopsis volleseniana E.Tripp & T.F.Daniel	VU	3.1	2015
Neuracanthus tephrophyllus Bidgood & Brummitt subsp. *tsavoensis* Bidgood & Brummitt	EN	3.1	2015
Phaulopsis pulchella M.Manktelow	EN	3.1	2015
Pseuderanthemum campylosiphon Mildbr.	VU	3.1	2015
Pseuderanthemum usambarense Vollesen	VU	3.1	2015
Achariaceae			
Dasylepis integra Warb.	VU	2.3	1998
Anacardiaceae			
Rhus brenanii Kokwaro	EN	2.3	1998
Sorindeia calantha Mildbr.	CR	2.3	1998
Annonaceae			
Annickia kummerae (Engl. & Diels) Setten & Maas	EN	3.1	2009
Artabotrys modestus Diels subsp. *modestus*	CR	3.1	2009
Artabotrys rupestris Diels	EN	3.1	2009
Asteranthe lutea Vollesen	EN	3.1	2009
Greenwayodendron suaveolens (Engl. & Diels) Verdc. subsp. *usambaricum* Verdc.	EN	3.1	2009
Huberantha stuhlmannii (Engl.) Chaowasku	VU	3.1	2009
Huberantha tanganyikensis (Vollesen) Chaowasku	EN	3.1	2009

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Huberantha verdcourtii (Vollesen) Chaowasku	EN	3.1	2009
Isolona cauliflora Verdc.	EN	3.1	2009
Isolona heinsenii Engl. & Diels	EN	3.1	2009
Isolona linearis Couvreur	VU	3.1	2009
Mkilua fragrans Verdc.	VU	3.1	2009
Monanthotaxis dictyoneura (Diels) Verdc.	EN	3.1	2009
Monanthotaxis discolor (Diels) Verdc.	EN	3.1	2013
Monanthotaxis discrepantinervia Verdc.	EN	3.1	2009
Monanthotaxis faulknerae Verdc.	EN	3.1	2009
Monanthotaxis trichantha (Diels) Verdc.	VU	3.1	2009
Monodora carolinae Couvreur	EN	3.1	2009
Monodora hastipetala Couvreur	CR	3.1	2009
Polyceratocarpus scheffleri Engl. & Diels	EN	3.1	2009
Sanrafaelia ruffonammari Verdc.	EN	3.1	2009
Toussaintia orientalis Verdc.	EN	3.1	2009
Toussaintia patriciae Q.Luke & Deroin	EN	3.1	2009
Uvaria decidua Diels	CR	3.1	2009
Uvaria dependens Engl. & Diels	EN	3.1	2009
Uvaria faulknerae Verdc.	EN	3.1	2009
Uvaria lungonyana Vollesen	VU	3.1	2009
Uvaria pandensis Verdc.	EN	3.1	2009
Uvaria puguensis D.M.Johnson	CR	3.1	2009
Uvaria tanzaniae Verdc.	VU	3.1	2009
Uvariodendron gorgonis Verdc.	EN	3.1	2009
Uvariodendron kirkii Verdc.	VU	3.1	2009
Uvariodendron oligocarpum Verdc.	EN	3.1	2009
Uvariodendron pycnophyllum (Diels) R.E.Fr.	EN	3.1	2009
Uvariodendron usambarense R.E.Fr.	EN	3.1	2009
Uvariopsis bisexualis Verdc.	EN	3.1	2009
Xylopia arenaria Engl.	VU	3.1	2009
Xylopia collina Diels	EN	3.1	2009
Xylopia mwasumbii D.M.Johnson	EN	3.1	2009
Aquifoliaceae			
Ilex mitis (L.) Radlk. var. *schliebenii* Loes.	VU	2.3	1998
Araliaceae			
Polyscias albersiana Harms	EN	3.1	2009
Polyscias stuhlmannii Harms	EN	3.1	2009
Schefflera lukwangulensis (Tennant) Bernardi	EN	3.1	2009
Asclepiadaceae			
Pentarrhinum ledermannii (Schltr.) Goyder & Liede	VU	3.1	2014
Bignoniaceae			
Fernandoa lutea (Verdc.) Bidgood	EN	2.3	1998

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Boraginaceae			
Ehretia glandulosissima Verdc.	EN	2.3	1998
Buxaceae			
Buxus obtusifolia (Mildbr.) Hutch.	VU	2.3	1998
Canellaceae			
Warburgia elongata Verdc.	EN	2.3	1998
Warburgia stuhlmannii Engl.	VU	3.1	2013
Warburgia ugandensis Sprague subsp. *longifolia* Verdc.	VU	2.3	1998
Celastraceae			
Platypterocarpus tanganyikensis Dunkley & Brenan	CR	2.3	1998
Chrysobalanaceae			
Hirtella zanzibarica Oliv. subsp. *megacarpa* (R.A.Graham) Prance	VU	2.3	1998
Magnistipula butayei De Wild. subsp. *greenwayi* (Brenan) F.White	VU	2.3	1998
Combretaceae			
Combretum tenuipetiolatum Wickens	CR	2.3	1998
Convolvulaceae			
Ipomoea flavivillosa Schulze-Menz	EN	3.1	2013
Dipterocarpaceae			
Monotes lutambensis Verdc.	EN	2.3	1998
Ebenaceae			
Diospyros amaniensis Gürke	VU	2.3	1998
Diospyros greenwayi F.White	VU	2.3	1998
Diospyros magogoana F.White	EN	2.3	1998
Diospyros shimbaensis F.White	EN	2.3	1998
Euphorbiaceae			
Aristogeitonia monophylla Airy Shaw	VU	2.3	1998
Croton dictyophlebodes Radcl.-Sm.	VU	2.3	1998
Croton jatrophoides Pax	VU	2.3	1998
Croton longipedicellatus J.Léonard subsp. *austrotanzanicus* Radcl.-Sm.	VU	2.3	1998
Drypetes gerrardinoides Radcl.-Sm.	VU	2.3	1998
Drypetes sclerophylla Mildbr.	VU	2.3	1998
Drypetes usambarica (Pax) Hutch. var. *mrimae* Radcl.-Sm.	VU	2.3	1998
Drypetes usambarica (Pax) Hutch. var. *rugulosa* Radcl.-Sm.	CR	2.3	1998
Drypetes usambarica (Pax) Hutch. var. *stylosa* Radcl.-Sm.	EN	2.3	1998
Drypetes usambarica (Pax) Hutch. var. *trichogyna* Radcl.-Sm.	VU	2.3	1998
Drypetes usambarica (Pax) Hutch. var. *usambarica*	VU	2.3	1998
Euphorbia biselegans Bruyns	VU	2.3	1998
Euphorbia greenwayi P.R.O.Bally & S.Carter	EN	3.1	2013

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Euphorbia greenwayi P.R.O. Bally & S.Carter subsp. *breviaculeata* S.Carter	EN	3.1	2013
Euphorbia greenwayi P.R.O.Bally & S.Carter subsp. *greenwayi*	CR	3.1	2013
Euphorbia lividiflora L.C.Leach	VU	2.3	1998
Euphorbia neoarborescens Bruyns	VU	2.3	1998
Euphorbia tanaensis P.R.O.Bally & S.Carter	CR	2.3	1998
Euphorbia wakefieldii N.E.Br.	EN	2.3	1998
Julbernardia hildebrandtii Radcl.-Sm.	VU	3.1	2013
Julbernardia hildebrandtii Radcl.-Sm. var. *hildebrandtii*	EN	3.1	2013
Lingelsheimia sylvestris (Radcl.-Sm.) Radcl.-Sm.	EN	2.3	1998
Macaranga conglomerata Brenan	VU	2.3	1998
Meineckia nguruensis (Radcl.-Sm.) Radcl.-Sm.	VU	2.3	1998
Meineckia ovata (E.A.Bruce) Radcl.-Sm.	VU	2.3	1998
Meineckia paxii Brunel ex Radcl.-Sm.	VU	2.3	1998
Meineckia stipularis (Radcl.-Sm.) Brunel ex Radcl.-Sm.	VU	2.3	1998
Micrococca scariosa Prain	VU	2.3	1998
Mildbraedia carpinifolia (Pax) Hutch.	VU	2.3	1998
Necepsia castaneifolia (Baill.) Bouchot & J.Léonard subsp. *kimbozensis* (Radcl.-Sm.) Bouchot & J.Léonard	EN	2.3	1998
Paranecepsia alchorneifolia Radcl.-Sm.	VU	2.3	1998
Phyllanthus kaessneri Hutch. var. *kaessneri*	VU	3.1	2013
Pycnocoma littoralis Pax	VU	2.3	1998
Pycnocoma macrantha Pax ex Engl.	VU	2.3	1998
Shirakiopsis trilocularis (Pax & K.Hoffm.) Esser	VU	2.3	1998
Sibangea pleioneura Radcl.-Sm.	VU	2.3	1998
Suregada lithoxyla (Pax & K.Hoffm.) Croizat	VU	2.3	1998
Tannodia swynnertonii (S.Moore) Prain	VU	2.3	1998
Tetrorchidium ulugurense Verdc.	VU	2.3	1998
Gesneriaceae			
Saintpaulia goetzeana Engl.	EN	3.1	2014
Saintpaulia inconspicua B.L.Burtt	EN	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *grandifolia* (B.L.Burtt) I.Darbysh.	CR	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *grotei* (Engl.) I.Darbysh.	VU	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *ionantha*	VU	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *mafiensis* I.Darbysh. & Pócs	VU	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *nitida* (B.L.Burtt) I.Darbysh.	EN	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *occidentalis* (B.L.Burtt) I.Darbysh.	VU	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *orbicularis*	EN	3.1	2014

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(B.L.Burtt) I.Darbysh.			
Saintpaulia ionantha H.Wendl. subsp. *pendula* (B.L.Burtt) I.Darbysh.	VU	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *rupicola* (B.L.Burtt) I.Darbysh.	CR	3.1	2014
Saintpaulia ionantha H.Wendl. subsp. *velutina* (B.L.Burtt) I.Darbysh.	EN	3.1	2014
Saintpaulia pusilla Engl.	VU	3.1	2014
Saintpaulia shumensis B.L.Burtt	EN	3.1	2014
Saintpaulia teitensis B.L.Burtt	CR	3.1	2014
Saintpaulia ulugurensis Haston	CR	3.1	2014
Saintpaulia watkinsii Haston	CR	3.1	2014
Streptocarpus albus (E.A.Bruce) I.Darbysh.	EN	3.1	2014
Streptocarpus albus (E.A.Bruce) I.Darbysh. subsp. *albus*	EN	3.1	2014
Streptocarpus albus (E.A.Bruce) I.Darbysh. subsp. *edwardsii* (Weigand) I.Darbysh.	EN	3.1	2014
Streptocarpus bambuseti B.L.Burtt	EN	3.1	2014
Streptocarpus bullatus Mansf.	EN	3.1	2014
Streptocarpus burttianus Pócs	CR	3.1	2014
Streptocarpus compressus B.L.Burtt	VU	3.1	2014
Streptocarpus euanthus Mansf.	CR	3.1	2014
Streptocarpus gonjaensis Engl.	EN	3.1	2014
Streptocarpus heckmannianus (Engl.) I.Darbysh.	EN	3.1	2014
Streptocarpus heckmannianus (Engl.) I.Darbysh. subsp. *gracilis* (E.A.Bruce) I.Darbysh.	EN	3.1	2014
Streptocarpus heckmannianus (Engl.) I.Darbysh. subsp. *heckmannianus*	EN	3.1	2014
Streptocarpus holstii Engl.	VU	3.1	2014
Streptocarpus kimbozanus B.L.Burtt	CR	3.1	2014
Streptocarpus kungwensis Hilliard & B.L.Burtt	VU	3.1	2014
Streptocarpus parensis B.L.Burtt	VU	3.1	2014
Streptocarpus schliebenii Mansf.	VU	3.1	2014
Streptocarpus stomandrus B.L.Burtt	EN	3.1	2014
*Streptocarpus subscandens (*B.L.Burtt) I.Darbysh.	EN	3.1	2014
Streptocarpus thysanotus Hilliard & B.L.Burtt	CR	3.1	2014
Guttiferae			
Allanblackia ulugurensis Engl.	VU	2.3	1998
Garcinia acutifolia N.Robson	VU	2.3	1998
Garcinia bifasciculata N.Robson	EN	2.3	1998
Garcinia semseii Verdc.	VU	2.3	1998
Garcinia tanzaniensis Verdc.	CR	3.1	2013
Mammea usambarensis Verdc.	VU	2.3	1998
Vismia pauciflora Milne-Redh.	EN	2.3	1998

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Hamamelidaceae			
Trichocladus goetzei Engl.	VU	2.3	1998
Hydrostachyaceae			
Hydrostachys angustisecta Engl.	EN	3.1	2013
Icacinaceae			
Alsodeiopsis schumannii Engl.	VU	2.3	1998
Labiatae			
Plectranthus orbicularis Gürke	EN	3.1	2013
Plectranthus platyphyllus A.J.Paton	EN	3.1	2013
Plectranthus scopulicola A.J.Paton	CR	3.1	2013
Plectranthus strangulatus A.J.Paton	EN	3.1	2013
Plectranthus trullatus A.J.Paton	VU	3.1	2013
Tinnea mirabilis (Bullock) Vollesen	EN	3.1	2013
Tinnea vesiculosa Gürke	VU	3.1	2013
Lauraceae			
Beilschmiedia kweo (Mildbr.) Robyns & R.Wilczek	VU	2.3	1998
Ocotea kenyensis (Chiov.) Robyns & R.Wilczek	VU	2.3	1998
Leguminosae			
Adenopodia rotundifolia (Harms) Brenan	VU	2.3	1998
Angylocalyx braunii Harms	VU	2.3	1998
Baikiaea ghesquiereana J.Léonard	EN	2.3	1998
Baphia kirkii Baker	VU	2.3	1998
Baphia macrocalyx Harms	VU	3.1	2013
Baphia pauloi Brummitt	EN	2.3	1998
Baphia puguensis Brummitt	EN	3.1	2013
Baphia punctulata Harms subsp. *punctulata*	VU	2.3	1998
Baphia semseiana Brummitt	VU	2.3	1998
Bauhinia loeseneriana Harms	VU	2.3	1998
Bauhinia mombassae Vatke	EN	2.3	1998
Berlinia orientalis Brenan	VU	2.3	1998
Bussea eggelingii Verdc.	EN	2.3	1998
Cordyla densiflora Milne-Redh.	VU	3.1	2013
Craibia brevicaudata (Vatke) Dunn subsp. *schliebenii* (Harms) J.B.Gillett	VU	2.3	1998
Crotalaria hemsleyi Milne-Redh.	EN	3.1	2013
Crotalaria laburnoides Klotzsch var. *nudicarpa* Polhill	EN	3.1	2012
Crotalaria schliebenii Polhill	VU	3.1	2013
Cynometra brachyrrhachis Harms	VU	2.3	1998
Cynometra engleri Harms	VU	2.3	1998
Cynometra filifera Harms	CR	2.3	1998
Cynometra gillmanii J.Léonard	CR	2.3	1998
Cynometra longipedicellata Harms	VU	2.3	1998
Cynometra lukei Beentje	EN	2.3	1998

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Cynometra suaheliensis (Taub.) Baker f.	VU	2.3	1998
Cynometra ulugurensis Harms	EN	2.3	1998
Cynometra webberi Baker f.	VU	2.3	1998
Dalbergia acariiantha Harms	VU	2.3	1998
Dalbergia gloveri Q.Luke, ined.	EN	3.1	2013
Dalbergia vacciniifolia Vatke	VU	2.3	1998
Dialium holtzii Harms	VU	2.3	1998
Englerodendron usambarense Harms	VU	2.3	1998
Erythrina haerdii Verdc.	VU	3.1	2012
Erythrina schliebenii Harms	CR	3.1	2012
Gigasiphon macrosiphon (Harms) Brenan	EN	2.3	1998
Guibourtia schliebenii (Harms) J.Léonard	VU	3.1	2013
Intsia bijuga (Colebr.) Kuntze	VU	2.3	1998
Isoberlinia scheffleri (Harms) Greenway	VU	2.3	1998
Julbernardia magnistipulata (Harms) Troupin	VU	2.3	1998
Kotschya platyphylla (Brenan) Verdc.	VU	2.3	1998
Kotschya recurvifolia (Taub.) F.White subsp. *longifolia* Verdc.	VU	3.1	2012
Microcharis microcharoides (Taub.) Schrire var. *latistipulata* (J.B.Gillett) Schrire	EN	3.1	2012
Millettia bussei Harms	VU	2.3	1998
Millettia elongatistyla J.B.Gillett	VU	3.1	2012
Millettia eriocarpa Dunn	VU	2.3	1998
Millettia impressa Harms subsp. *goetzeana* (Harms) J.B.Gillett	VU	3.1	2013
Millettia micans Taub.	EN	3.1	2013
Millettia oblata Dunn subsp. *oblata*	VU	2.3	1998
Millettia oblata Dunn subsp. *teitensis* J.B.Gillett	VU	2.3	1998
Millettia sacleuxii Dunn	VU	2.3	1998
Millettia schliebenii Harms	VU	2.3	1998
Millettia semseii J.B.Gillett	VU	2.3	1998
Millettia sericantha Harms	VU	2.3	1998
Newtonia erlangeri (Harms) Brenan	EN	3.1	2012
Newtonia paucijuga (Harms) Brenan	VU	2.3	1998
Ormocarpum sennoides (Willd.) DC. subsp. *zanzibaricum* Brenan & J.B.Gillett	VU	2.3	1998
Oxystigma msoo Harms	VU	2.3	1998
Platysepalum inopinatum Harms	VU	3.1	2013
Pterocarpus mildbraedii Harms subsp. *usambarensis* (Verdc.) Polhill	VU	2.3	1998
Sesbania speciosa Taub.	VU	3.1	2012
Stuhlmannia moavi Taub.	VU	2.3	1998
Tessmannia densiflora Harms	EN	2.3	1998
Tessmannia martiniana Harms var. *martiniana*	VU	2.3	1998

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Zenkerella capparidacea (Taub.) J.Léonard subsp. *capparidacea*	VU	2.3	1998
Zenkerella capparidacea (Taub.) J.Léonard subsp. *grotei* (Harms) Temu	VU	2.3	1998
Zenkerella egregia J.Léonard	VU	2.3	1998
Zenkerella perplexa Temu	VU	2.3	1998
Loranthaceae			
Agelanthus atrocoronatus Polhill & Wiens	EN	3.1	2013
Agelanthus igneus (Danser) Polhill & Wiens	EN	3.1	2013
Agelanthus longipes (Baker & Sprague) Polhill & Wiens	VU	3.1	2013
Agelanthus microphyllus Polhill & Wiens	EN	3.1	2013
Agelanthus pennatulus (Sprague) Polhill & Wiens	VU	3.1	2013
Agelanthus rondensis (Engl.) Polhill & Wiens	CR	3.1	2013
Agelanthus uhehensis (Engl.) Polhill & Wiens	EN	3.1	2013
Agelanthus validus Polhill & Wiens	EN	3.1	2013
Englerina drummondii Balle ex Polhill & Wiens	VU	3.1	2013
Englerina heckmanniana (Engl.) Polhill & Wiens subsp. *heckmanniana*	VU	3.1	2013
Englerina longiflora Polhill & Wiens	EN	3.1	2013
Englerina macilenta Polhill & Wiens	EN	3.1	2013
Englerina ramulosa (Sprague) Polhill & Wiens	EN	3.1	2013
Englerina triplinervia (Baker & Sprague) Polhill & Wiens	VU	3.1	2013
Erianthemum alveatum (Sprague) Danser	VU	3.1	2013
Erianthemum lindense (Sprague) Danser	VU	3.1	2013
Erianthemum occultum (Sprague) Danser	VU	3.1	2013
Oncella curviramea (Engl.) Danser	VU	3.1	2013
Oncella gracilis Polhill & Wiens	VU	3.1	2013
Oncella schliebeniana Polhill & Wiens	EN	3.1	2013
Taxillus wiensii Polhill	CR	3.1	2013
Lythraceae			
Ammannia aurita (Koehne) S.A.Graham & Gandhi	EN	3.1	2013
Ammannia linearis (Hiern) S.A.Graham & Gandhi	EN	3.1	2013
Ammannia mauritiana S.A.Graham & Gandhi	EN	3.1	2013
Ammannia maxima (Koehne) S.A.Graham & Gandhi	EN	3.1	2013
Ammannia parkeri (Verdc.) S.A.Graham & Gandhi	EN	3.1	2013
Ammannia parkeri (Verdc.) S.A.Graham & Gandhi var. *longifolia* (Verdc.) S.A.Graham & Gandhi	VU	3.1	2013
Ammannia parkeri (Verdc.) S.A.Graham & Gandhi var. *parkeri*	EN	3.1	2013
Ammannia pedicellata (Hiern) S.A.Graham & Gandhi	VU	3.1	2013
Ammannia stuhlmannii (Koehne) S.A.Graham & Gandhi	EN	3.1	2013
Malpighiaceae			
Acridocarpus alopecurus Sprague var.	EN	3.1	2013

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machaeropterus Nied.			
Acridocarpus congestus Launert	EN	3.1	2013
Acridocarpus pauciglandulosus Launert	EN	3.1	2013
Acridocarpus scheffleri Engl.	EN	3.1	2013
Triaspis schliebenii A.Ernst	CR	3.1	2013
Malvaceae			
Hibiscus greenwayi Baker f.	VU	3.1	2013
Hibiscus holstii Mwachala	VU	3.1	2013
Hibiscus masasianus Mwachala	VU	3.1	2013
Melastomataceae			
Dissotis aprica Engl.	EN	3.1	2013
Dissotis arborescens A.Fern & R.Fern.	EN	3.1	2013
Gravesia hylophila (Gilg) A.Fern & R.Fern	EN	3.1	2013
Gravesia pulchra (Gilg) Jacq.-Fél. ex Wickens	VU	3.1	2013
Gravesia pulchra (Gilg) Jacq.-Fél. ex Wickens var. *glandulosa* (A.Fern & R.Fern.) Jacq.-Fél. ex Wickens	EN	3.1	2013
Gravesia pulchra (Gilg) Jacq.-Fél. ex Wickens var. *pulchra*	EN	3.1	2013
Gravesia riparia A.Fern & R.Fern.	EN	3.1	2013
Lijndenia brenanii (A.Fern & R.Fern.) Jacq.-Fél.	CR	3.1	2013
Lijndenia procteri (A Fern. & R.Fern.) Borhidi	EN	3.1	2013
Memecylon buxoides Wickens	CR	3.1	2013
Memecylon cogniauxii Gilg	VU	3.1	2013
Memecylon dryadum R.D.Stone, ined.	EN	3.1	2013
Memecylon fragrans A.Fern & R.Fern.	VU	3.1	2013
Memecylon magnifoliatum A.Fern & R.Fern.	EN	3.1	2013
Memecylon myrtilloides Markgr.	VU	3.1	2013
Memecylon semseii A.Fern & R.Fern.	EN	3.1	2013
Memecylon teitense Wickens	VU	3.1	2013
Memecylon verruculosum Brenan	VU	3.1	2013
Tristemma schliebenii Markgr.	EN	3.1	2013
Warneckea amaniensis Gilg	VU	3.1	2013
Warneckea maritima (A.Fern & R.Fern.) R.D.Stone & Luke, ined.	EN	3.1	2013
Warneckea melindiensis (A.Fern. & R.Fern.) R.D.Stone & Q.Luke	EN	3.1	2013
Warneckea mouririifolia (Brenan) Borhidi	VU	3.1	2013
Warneckea schliebenii (Markgr.) Jacq.-Fél.	EN	3.1	2013
Meliaceae			
Khaya anthotheca (Welw.) C.DC.	VU	2.3	1998
Turraea kimbozensis Cheek	EN	3.1	2013
Turraea mombassana C.DC. subsp. *schliebenii* (Harms) Styles & F.White	CR	3.1	2013

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Melianthaceae			
Bersama rosea Hoyle	VU	2.3	1998
Menispermaceae			
Anisocycla blepharosepala Diels subsp. *tanzaniensis* Vollesen	VU	3.1	2013
Cissampelos nigrescens Diels	VU	3.1	2013
Cissampelos nigrescens Diels var. *cardiophylla* Troupin	CR	3.1	2013
Cissampelos nigrescens Diels var. *nigrescens*	VU	3.1	2013
Montiniaceae			
Grevea eggelingii Milne-Redh. var. *echinocarpa* Mendes	EN	3.1	2013
Grevea eggelingii Milne-Redh. var. *keniensis* (Verdc.) Verdc.	EN	3.1	2013
Moraceae			
Dorstenia bicaudata Peter	CR	3.1	2013
Dorstenia dionga Engl.	EN	3.1	2013
Dorstenia holstii Engl.	VU	3.1	2013
Dorstenia holstii Engl. var. *holstii*	EN	3.1	2013
Dorstenia holstii Engl. var. *longestipulata* Hijman	VU	3.1	2013
Dorstenia tayloriana Rendle var. *tayloriana*	VU	3.1	2013
Dorstenia tenuiradiata Mildbr.	VU	3.1	2013
Dorstenia ulugurensis Engl.	VU	3.1	2013
Ficus faulkneriana C.C.Berg	VU	3.1	2013
Myristicaceae			
Cephalosphaera usambarensis Warb.	VU	2.3	1998
Myrtaceae			
Eugenia mufindiensis Verdc.	VU	3.1	2013
Eugenia scheffleri Engl. & Brehmer	CR	3.1	2013
Eugenia tanaensis Verdc.	EN	3.1	2013
Eugenia toxanatolica Verdc.	VU	3.1	2013
Syzygium cordatum Hochst. subsp. *shimbaense* Verdc.	EN	3.1	2013
Syzygium micklethwaitii Verdc. subsp. *micklethwaitii*	VU	3.1	2013
Syzygium micklethwaitii Verdc. subsp. *subcordatum* Verdc.	VU	3.1	2013
Syzygium parvulum Mildbr.	EN	3.1	2013
Ochnaceae			
Campylospermum scheffleri (Engl. & Gilg) Farron	VU	2.3	1998
Ouratea schusteri Engl.	VU	2.3	1998
Olacaceae			
Octoknema orientalis Mildbr.	VU	2.3	1998
Passifloraceae			
Adenia dolichosiphon Harms	EN	3.1	2013
Adenia kigogoensis Hearn	EN	3.1	2013

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Adenia racemosa W.J.de Wilde	EN	3.1	2013
Adenia schliebenii Harms	EN	3.1	2013
Basananthe zanzibarica (Mast.) W.J.de Wilde	VU	3.1	2013
Paropsia grewioides Welw. ex Mast. var. *orientalis* Sleumer	EN	3.1	2013
Pittosporaceae			
Pittosporum goetzei Engl.	VU	2.3	1998
Rhamnaceae			
Lasiodiscus pervillei Baill. subsp. *ferrugineus* (Verdc.) Figueiredo	VU	2.3	1998
Ziziphus robertsoniana Beentje	EN	2.3	1998
Rosaceae			
Prunus africana (Hook.f.) Kalkman	VU	2.3	1998
Rubiaceae			
Afrocanthium keniense (Bullock) Lantz	VU	2.3	1998
Afrocanthium kilifiense (Bridson) Lantz	VU	2.3	1998
Afrocanthium shabanii (Bridson) Lantz	VU	2.3	1998
Afrocanthium siebenlistii (K. Krause) Lantz	VU	2.3	1998
Afrocanthium vollesenii (Bridson) Lantz	VU	2.3	1998
Aoranthe penduliflora (K.Schum.) Somers	VU	2.3	1998
Bertiera pauloi Verdc.	VU	2.3	1998
Canthium impressinervium Bridson	VU	2.3	1998
Canthium oligocarpum Hiern subsp. *intermedium* Bridson	VU	2.3	1998
Canthium robynsianum Bullock	VU	2.3	1998
Canthium rondoense Bridson	EN	2.3	1998
Chassalia albiflora K.Krause	VU	2.3	1998
Coffea costatifructa Bridson	VU	2.3	1998
Coffea fadenii Bridson	VU	2.3	1998
Coffea mongensis Bridson	VU	2.3	1998
Coffea pocsii Bridson	VU	2.3	1998
Coffea pseudozanguebariae Bridson	VU	2.3	1998
Coffea schliebenii Bridson	VU	3.1	2014
Coffea zanguebariae Lour.	VU	2.3	1998
Craterispermum longipedunculatum Verdc.	VU	2.3	1998
Cuviera migeodii Verdc.	VU	2.3	1998
Cuviera schliebenii Verdc.	EN	2.3	1998
Cuviera tomentosa Verdc.	VU	2.3	1998
Didymosalpinx callianthus J.E.Burrows & S.M.Burrows	EN	3.1	2014
Empogona acidophylla (Robbr.) Tosh & Robbr.	VU	2.3	1998
Empogona ovalifolia (Hiern) Tosh & Robbr. var. *glabrata* (Oliv.) Tosh & Robbr.	VU	2.3	1998
Empogona ovalifolia (Hiern) Tosh & Robbr. var. *taylorii* (S. Moore) Tosh & Robbr.	VU	2.3	1998

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Gardenia transvenulosa Verdc.	VU	2.3	1998
Heinsenia diervilleoides K.Schum. subsp. *mufindiensis* (Verdc.) Verdc.	VU	2.3	1998
Ixora albersii K.Schum.	VU	2.3	1998
Ixora scheffleri K.Schum. & K.Krause subsp. *scheffleri*	VU	2.3	1998
Keetia koritschoneri Bridson	VU	2.3	1998
Keetia purpurascens (Bullock) Bridson	VU	2.3	1998
Kraussia speciosa Bullock	VU	2.3	1998
Lasianthus grandifolius Verdc.	VU	2.3	1998
Lasianthus laxinervis (Verdc.) Jannerup	VU	2.3	1998
Lasianthus pedunculatus E.A.Bruce	VU	2.3	1998
Lasianthus wallacei E.A. Bruce	VU	2.3	1998
Leptactina delagoensis K.Schum. subsp. *bussei* (K.Schum. & K.Krause) Verdc.	VU	2.3	1998
Leptactina papyrophloea Verdc.	EN	2.3	1998
Morinda asteroscepa K.Schum.	VU	2.3	1998
Multidentia castaneae (Robyns) Bridson & Verdc.	VU	2.3	1998
Multidentia sclerocarpa (K.Schum.) Bridson	VU	2.3	1998
Mussaenda microdonta Wernham subsp. *microdonta*	VU	2.3	1998
Mussaenda monticola K.Krause var. *glabrescens* Bridson	VU	2.3	1998
Mussaenda monticola K.Krause var. *monticola*	VU	2.3	1998
Oxyanthus biflorus J.E.Burrows & S.M.Burrows	EN	3.1	2014
Oxyanthus lepidus S.Moore subsp. *kigogoensis* Bridson	VU	2.3	1998
Oxyanthus pyriformis (Hochst.) Skeels subsp. *longitubus* Bridson	EN	2.3	1998
Oxyanthus pyriformis (Hochst.) Skeels subsp. *tanganyikensis* Bridson	VU	2.3	1998
Pavetta axillipara Bremek.	VU	2.3	1998
Pavetta holstii K.Schum.	VU	2.3	1998
Pavetta johnstonii Bremek. subsp. *breviloba* Bridson	VU	2.3	1998
Pavetta kyimbilensis Bremek. var. *iringensis* (Bremek.) Bridson	VU	2.3	1998
Pavetta lindina Bremek.	EN	3.1	2014
Pavetta linearifolia Bremek.	VU	2.3	1998
Pavetta lynesii Bridson	VU	2.3	1998
Pavetta macrosepala Hiern var. *macrosepala*	VU	2.3	1998
Pavetta macrosepala Hiern var. *puberula* K.Schum.	VU	2.3	1998
Pavetta manyanguensis Bridson	VU	2.3	1998
Pavetta nitidissima Bridson	VU	2.3	1998
Pavetta sepium K.Schum. var. *sepium*	VU	2.3	1998
Pavetta sparsipila Bremek.	VU	2.3	1998
Pavetta sphaerobotrys K.Schum. subsp. *lanceisepala* (Bremek.) Bridson	VU	2.3	1998
Pavetta sphaerobotrys K.Schum. subsp. *sphaerobotrys*	VU	2.3	1998

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Pavetta sphaerobotrys K.Schum. subsp. *tanaica* (Bremek.) Bridson	VU	2.3	1998
Pavetta subumbellata Bremek. var. *subcoriacea* Bridson	VU	2.3	1998
Pavetta tarennoides S.Moore	VU	2.3	1998
Pavetta tendagurensis Bremek. var. *glabrescens* Bridson	VU	2.3	1998
Pavetta tendagurensis Bremek. var. *tendagurensis*	VU	2.3	1998
Polysphaeria macrantha Brenan	VU	2.3	1998
Psychotria alsophila K.Schum.	VU	2.3	1998
Psychotria crassipetala E.M.A.Petit	VU	2.3	1998
Psychotria cyathicalyx E.M.A.Petit	VU	2.3	1998
Psychotria elachistantha (K.Schum.) E.M.A.Petit	VU	2.3	1998
Psychotria megalopus Verdc.	VU	2.3	1998
Psychotria megistantha E.M.A.Petit	VU	2.3	1998
Psychotria peteri E.M.A.Petit	VU	2.3	1998
Psychotria petitii Verdc.	VU	2.3	1998
Psychotria pseudoplatyphylla E.M.A.Petit	VU	2.3	1998
Psychotria taitensis Verdc.	VU	2.3	1998
Psydrax faulknerae Bridson	VU	2.3	1998
Psydrax kibuwae Bridson	VU	2.3	1998
Psydrax micans (Bullock) Bridson	VU	2.3	1998
Rhipidantha chlorantha (K.Schum.) Bremek.	VU	2.3	1998
Rothmannia macrosiphon (Engl.) Bridson	VU	2.3	1998
Rytigynia adenodonta (K.Schum.) Robyns var. *reticulata* (Robyns) Verdc.	VU	2.3	1998
Rytigynia binata (K.Schum.) Robyns	VU	2.3	1998
Rytigynia bugoyensis (K. Krause) Verdc. subsp. *glabriflora* Verdc.	VU	2.3	1998
Rytigynia caudatissima Verdc.	VU	2.3	1998
Rytigynia celastroides (Baill.) Verdc. var. *nuda* Verdc.	VU	2.3	1998
Rytigynia eickii (K.Schum. & K.Krause) Bullock	VU	2.3	1998
Rytigynia hirsutiflora Verdc.	VU	2.3	1998
Rytigynia lichenoxenos (K.Schum.) Robyns subsp. *glabrituba* Verdc.	VU	2.3	1998
Rytigynia lichenoxenos (K.Schum.) Robyns subsp. *lichenoxenos*	VU	2.3	1998
Rytigynia longipedicellata Verdc.	EN	2.3	1998
Rytigynia nodulosa (K.Schum.) Robyns	VU	2.3	1998
Rytigynia pseudolongicaudata Verdc.	VU	2.3	1998
Sericanthe odoratissima (K.Schum.) Robbr. var. *odoratissima*	VU	2.3	1998
Sericanthe odoratissima (K.Schum.) Robbr. var. *ulugurensis* Robbr.	VU	2.3	1998
Tapiphyllum schliebenii Verdc.	EN	2.3	1998
Tarenna drummondii Bridson	VU	2.3	1998

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Tarenna luhomeroensis Bridson	VU	2.3	1998
Tarenna quadrangularis Bridson	VU	2.3	1998
Tricalysia anomala E.A.Bruce var. *anomala*	VU	2.3	1998
Tricalysia anomala E.A.Bruce var. *montana* Robbr.	VU	2.3	1998
Tricalysia pedicellata Robbr.	VU	2.3	1998
Tricalysia schliebenii Robbr.	VU	2.3	1998
Vangueria bicolor K.Schum.	VU	2.3	1998
Vangueria loranthifolia K.Schum. subsp. *loranthifolia*	VU	2.3	1998
Vangueria pallidiflora (Bullock) Lantz	VU	2.3	1998
Vangueria randii S.Moore subsp. *vollesenii* Verdc.	VU	2.3	1998
Vangueria rufescens(E.A.Bruce) Lantz subsp. *angustiloba* (Verdc.) Lantz	VU	2.3	1998
Vangueriopsis longiflora Verdc.	VU	2.3	1998
Rutaceae			
Calodendrum eickii Engl.	CR	2.3	1998
Diphasiopsis fadenii Kokwaro	VU	2.3	1998
Vepris sansibarensis (Engl.) Mziray	VU	2.3	1998
Zanthoxylum deremense (Engl.) Kokwaro	VU	2.3	1998
Zanthoxylum holtzianum (Engl.) P.G.Waterman	VU	2.3	1998
Zanthoxylum lindense (Engl.) Kokwaro	VU	2.3	1998
Salicaceae			
Casearia engleri Gilg	VU	2.3	1998
Dovyalis xanthocarpa Bullock	VU	2.3	1998
Homalium gracilipes Sleumer	VU	2.3	1998
Populus ilicifolia (Engl.) Rouleau	VU	2.3	1998
Sapindaceae			
Allophylus chirindensis Baker f.	VU	2.3	1998
Camptolepis ramiflora (Taub.) Radlk.	VU	2.3	1998
Chytranthus obliquinervis Radlk.	VU	2.3	1998
Sapotaceae			
Mimusops acutifolia Mildbr.	VU	2.3	1998
Mimusops penduliflora Engl.	EN	2.3	1998
Mimusops riparia Engl.	VU	2.3	1998
Neohemsleya usambarensis T.D.Penn.	VU	2.3	1998
Pouteria alnifolia (Baker) Roberty var. *sacleuxii* (Lecomte) L.Gaut.	VU	2.3	1998
Pouteria pseudoracemosa (J.H.Hemsl.) L.Gaut.	VU	2.3	1998
Synsepalum kaessneri (Engl.) T.D.Penn.	VU	2.3	1998
Synsepalum subverticillatum (E.A.Bruce) T.D.Penn.	EN	2.3	1998
Vitellariopsis cuneata (Engl.) Aubrév.	VU	2.3	1998
Vitellariopsis kirkii (Baker) Dubard	VU	2.3	1998
Sterculiaceae			
Cola lukei Cheek	EN	3.1	2003

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Cola octoloboides Brenan	EN	2.3	1998
Cola porphyrantha Brenan	EN	2.3	1998
Cola scheffleri K.Schum.	VU	2.3	1998
Dombeya amaniensis Engl.	VU	2.3	1998
Sterculia schliebenii Mildbr.	VU	2.3	1998
Theaceae			
Ternstroemia polypetala Melchior	VU	2.3	1998
Umbelliferae			
Cryptotaenia calycina C.C.Towns.	EN	3.1	2009
Cryptotaenia polygama C.C.Towns.	EN	3.1	2009
Lefebvrea droopii C.C.Towns.	VU	3.1	2009
Verbenaceae			
Clerodendrum lutambense Verdc.	VU	3.1	2014
Karomia gigas (Faden) Verdc.	CR	2.3	1998
Premna hans-joachimii Verdc.	VU	2.3	1998
Premna schliebenii Werderm.	VU	2.3	1998
Premna tanganyikensis Moldenke	VU	2.3	1998
Vitex amaniensis W.Piep.	VU	2.3	1998
Vitex keniensis Turrill	VU	2.3	1998
Vitex zanzibarensis Vatke	VU	2.3	1998
Pinopsida			
Podocapaceae			
Afrocarpus usambarensis (Pilg.) C.N.Page	EN	3.1	2013
Polypodiopsida			
Cyatheaceae			
Cyathea fadenii Holttum	EN	3.1	2013
Cyathea schliebenii Reimers	EN	3.1	2013
Dennstaedtiaceae			
Blotiella coriacea Verdc.	CR	3.1	2013
Blotiella hieronymi (Kümmerle) Pic.Serm.	EN	3.1	2013
Microlepia fadenii Pic.Serm.	EN	3.1	2013
Grammitidaceae			
Lellingeria strangeana (Pic.Serm.) A.R.Sm. & R.C.Moran	VU	3.1	2013
Zygophlebia major (Reimers) Parris	EN	3.1	2013
Marsileaceae			
Marsilea botryocarpa F.Ballard	EN	3.1	2013
Marsilea fadeniana Launert	CR	3.1	2013
Polypodiaceae			
Pyrrosia liebuschii (Hieron.) Schelpe	EN	3.1	2013
Pteridaceae			
Cheilanthes deboeri Verdc.	EN	3.1	2013
Pteris albersii Hieron.	VU	3.1	2013

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Pteris albersii Hieron. subsp. *albersii*	EN	3.1	2013
Pteris mkomaziensis Verdc.	EN	3.1	2013
Vittaria schliebenii Reimers	EN	3.1	2013
Thelypteridaceae			
Pneumatopteris usambarensis Holttum	EN	3.1	2013
Woodsiaceae			
Athyrium rondoense Verdc.	CR	3.1	2013
Callipteris ulugurica Verdc.	EN	3.1	2013
Diplazium pseudoporrectum Hieron.	EN	3.1	2013
Diplazium ulugurense Verdc.	CR	3.1	2013

Appendix 2. Surveyed sites of the EACF with IBA and KBA status and numbers of threatened taxa.

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Arabuko-Sokoke Forest	KE	Yes	Yes	37	15	22	1	5	1	1		4		25
Bagamoyo	TZ	No	Yes	3	3	0								3
Bagamoyo (Kikoka FR)	TZ	No	Yes	1	1	0								1
Bagamoyo District coastal forests	TZ	Yes	Yes	54	23	31	1	10				5		38
Boni and Dodori	KE	Yes	Yes	16	4	12		3				7		6
Buda FR	KE	No	Yes	21	9	12	1			2				18
Cha Simba	KE	No	Yes	7	3	4								7
Chale Island	KE	No	Yes	4	3	1								4
Chuna Forest	KE	No	Yes	1	0	1								1
Dakatcha woodland	KE	Yes	Yes	7	3	4		3				1		3
Dar es Salaam coast	TZ	Yes	Yes	33	5	28		4		1		1		27
Diani Forest	KE	Yes	Yes	15	9	6		1				3		11
Dzitzoni	KE	No	Yes	1	1	0								1
Dzombo Hill Forest	KE	Yes	Yes	13	8	5		1						12
East Usambara Mountains	TZ	Yes	Yes	216	74	142	14	12		17	3	8	11	151
Gede Ruins National Monument	KE	Yes	Yes	2	0	2						2		
Gongoni FR	KE	No	Yes	29	15	14	1			1				27
Handeni District coastal forests	TZ	Yes	Yes	34	17	17		1				3		30
Jozani FR, Zanzibar	TZ	Yes	Yes	9	0	9	3			1		4		1
Kambe Rocks	KE	No	Yes	4	3	1								4
Kaya Bombo	KE	No	Yes	1	1	0								1
Kaya Bura	KE	No	No	1	0	1								1

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Kaya Chonyi	KE	No	Yes	3	3	0								3
Kaya Dzombo	KE	No	Yes	1	0	1						1		
Kaya Fungo	KE	No	Yes	4	0	4								4
Kaya Gandini	KE	Yes	Yes	7	3	4		2						5
Kaya Gonja	KE	No	Yes	1	1	0								1
Kaya Jibana	KE	No	Yes	15	8	7	1							14
Kaya Kambe	KE	No	Yes	6	5	1							1	5
Kaya Kauma	KE	No	Yes	5	3	2								5
Kaya Kinondo	KE	No	Yes	6	5	1								6
Kaya Kivara	KE	No	Yes	5	4	1								5
Kaya Lunguma	KE	No	Yes	5	3	2								5
Kaya Miungoni	KE	No	Yes	3	2	1								3
Kaya Msambweni	KE	No	Yes	1	0	1								1
Kaya Mtswakara	KE	No	Yes	9	6	3								9
Kaya Muhaka	KE	No	Yes	13	8	5				1				12
Kaya Mwarakaya	KE	No	Yes	1	0	1								1
Kaya Puma	KE	No	Yes	2	1	1								2
Kaya Rabai	KE	No	Yes	16	11	5				1				15
Kaya Ribe	KE	No	Yes	12	9	3								12
Kaya Sega	KE	No	Yes	1	1	0								1
Kaya Teleza	KE	No	Yes	2	2	0								2
Kaya Timbwa	KE	No	No	2	1	1								2
Kaya Tiwi	KE	No	Yes	3	1	2						2		1

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Kaya Ukunda	KE	No	Yes	4	1	3						2		2
Kaya Waa	KE	Yes	Yes	7	2	5		1				1		5
Kilifi District coastal forests	KE	No	No	33	6	27	1							32
Kilombero Valley	TZ	Yes	Yes	17	5	12		5				2		10
Kilwa District coastal forests	TZ	Yes	Yes	37	17	20		4				4		29
Kisarawe District coastal forests	TZ	Yes	Yes	63	31	32	1	3		2		3		54
Kisiju	TZ	No	Yes	3	2	1						1		2
Kisimani wa Ngoa	KE	No	Yes	1	1	0								1
Korogwe (Kwashemshi Sisal Estate)	TZ	No	Yes	1	1	0								1
Kwale District coastal forests	KE	No	No	32	3	27	3					1		28
Kyngani River	TZ	No	No	1	0	1			1					
Lamu District coastal forests	KE	No	No	31	7	24								31
Lindi (Kengedi)	TZ	No	Yes	1	0	1								1
Lindi (Mkindani)	TZ	No	Yes	2	1	1								2
Lindi (Ngongo)	TZ	No	Yes	1	1	0								1
Lindi (Nondora)	TZ	No	Yes	1	0	1								1
Lindi (Nyangao River)	TZ	No	Yes	1	1	0								1
Lindi (Ras Rungi)	TZ	No	Yes	3	1	2								3
Lindi (Tendaguru)	TZ	No	Yes	5	2	3								5
Lindi Creek	TZ	No	Yes	1	1	0								1
Lindi District coastal forests	TZ	Yes	Yes	93	49	44		2				4		87
Lower Tana River forests	KE	Yes	Yes	31	10	21		1				4		26
Lukoga FR	TZ	No	Yes	1	1	0								1

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Lunghi Forest	KE	No	Yes	2	1	1								2
Mafia Island	TZ	Yes	Yes	15	7	8	1					1		13
Magombera FR	TZ	No	Yes	11	5	6						1	1	9
Mahenge	TZ	No	No	23	4	19	1	3				3		16
Mahenge (Kwiro Forest)	TZ	No	Yes	4	2	2								4
Mahenge (Liondo)	TZ	No	Yes	2	1	1								2
Mahenge (Lipindi)	TZ	No	Yes	1	1	0								1
Mahenge (Nambiga FR)	TZ	No	No	5	4	1						1		4
Mahenge (Sali)	TZ	No	Yes	20	7	13	5						1	14
Mahenge Scarp FR	TZ	No	Yes	2	0	2	2							
Makongwe Island	TZ	No	Yes	1	1	0								1
Malundwe	TZ	No	No	2	1	1	1							1
Mangai	KE	No	No	1	1	0								1
Mangea Hill	KE	No	Yes	25	13	12								25
Marafa	KE	No	Yes	3	0	3								3
Marenji Forest	KE	Yes	Yes	7	4	3		1				1		5
Masasi	TZ	No	Yes	2	1	1								2
Masasi (Nyengedi)	TZ	No	Yes	1	1	0								1
Masasi District forests	TZ	No	No	12	5	7								12
Masasi East	TZ	No	Yes	1	1	0								1
Mikindani (Mtwara inland)	TZ	No	Yes	2	1	1								2
Mikindani District (Mtwara-Mikindani)	TZ	No	Yes	1	1	0								1
Mikumi NP	TZ	Yes	Yes	3	2	1								3

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Mkomazi GR/NP	TZ	Yes	Yes	9	3	6						1		8
Mnazi Bay	TZ	Yes	Yes	1	1	0								1
Mombasa coast	KE	No	No	9	3	6	1							8
Mount Kasigau	KE	No	Yes	22	4	18							1	21
Mpanga Village FR	TZ	No	Yes	4	1	3	3							1
Mrima Hill Forest	KE	Yes	Yes	14	8	6		1				2		11
Mtanza FR	TZ	No	Yes	3	2	1								3
Mtwara District coastal forests	TZ	No	No	9	4	5						1		8
Muheza District coastal forests	TZ	Yes	Yes	33	9	24		5	1	2		3		22
Mwache FR	KE	No	Yes	11	7	4								11
Nachingwea District	TZ	No	No	5	1	4								5
Newala (Kitama)	TZ	No	Yes	1	1	0								1
Newala (Kitangari)	TZ	No	Yes	3	2	1								3
Newala (Mahuta)	TZ	No	Yes	1	0	1								1
Newala District coastal forests	TZ	Yes	Yes	9	6	3						1		8
Nguru Mountains	TZ	Yes	Yes	141	47	94	18	7		3		5	5	103
Nguu Mountains	TZ	Yes	Yes	23	1	22	9	5				3	1	5
North Pare Mountains	TZ	Yes	Yes	28	6	22	4	8				2	2	12
Nyumburuni FR	TZ	No	Yes	4	2	2				1		1		2
Nzovuni River	KE	No	Yes	1	1	0								1
Pande and Dodwe coastal forests	TZ	Yes	Yes	17	12	5		2						15
Pangani	KE	No	Yes	12	10	2								12
Pangani (Bushiri)	TZ	No	Yes	6	2	4								6

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Pangani (Hale-Makinjumbe)	TZ	No	Yes	2	1	1								2
Pangani (Mauri)	TZ	No	Yes	1	1	0								1
Pangani (Mwera)	TZ	No	Yes	7	1	6								7
Pangani Dam	TZ	No	Yes	1	1	0								1
Pangani District coastal forests	TZ	Yes	Yes	21	5	16	1	2	1	1		3		13
Panza Island	TZ	No	Yes	1	1	0								1
Pemba Island	TZ	Yes	Yes	16	2	14	3	2		2		1		8
Ras Kituani	TZ	No	Yes	1	1	0								1
River Wami	TZ	No	Yes	4	3	1			2					2
Ruangwa District coastal forests	TZ	No	No	1	0	1								1
Rubeho Mountains	TZ	Yes	Yes	73	25	48	5	10		1		7		50
Rufiji Delta	TZ	Yes	Yes	1	0	1				1				
Rufiji District coastal forests	TZ	Yes	Yes	58	28	30		7		1		4		46
Sabaki River Mouth	KE	Yes	Yes	2	0	2		1						1
Sangerawe	TZ	No	Yes	5	3	2								5
Selous GR	TZ	Yes	Yes	75	31	44		9				5		61
Semdoe	TZ	No	Yes	2	0	2	1	1						
Shikurufumi FR	TZ	No	Yes	9	2	7	2							7
Shimba Hills	KE	Yes	Yes	90	41	49	5	2	1	2	1	4	2	73
Shimoni forests	KE	No	Yes	5	1	4						1		4
Sinza River - near UDSM	TZ	No	Yes	1	1	0								1
South Pare Mountains	TZ	Yes	Yes	76	27	49	4	10		1		4	2	55
Southeast coastal Kenya	KE	No	No	1	0	1			1					

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Taita District coastal forests	KE	No	No	7	0	7	1							6
Taita Hills forests	KE	Yes	Yes	63	22	41	3	9	4			1		46
Tana River Delta	KE	Yes	Yes	3	0	3		1				2		
Tanga (Duga)	TZ	No	Yes	1	1	0								1
Tanga (Gombero FR)	TZ	No	Yes	1	1	0								1
Tanga (Morongo)	TZ	No	Yes	1	1	0								1
Tanga (Nyamaku)	TZ	No	Yes	1	1	0								1
Tanga (Pangani)	TZ	No	Yes	1	1	0								1
Tanga (Sigi River)	TZ	No	Yes	1	1	0								1
Tanga District coast	TZ	No	No	13	2	11								13
Udzungwa Mountains	TZ	Yes	Yes	184	46	138	21	16		1		13	4	129
Udzungwa Mountains National Park	TZ	Yes	Yes	157	65	92	7	14		3		6	2	125
Ukaguru Mountains	TZ	Yes	Yes	68	18	50	8	4		5		4		47
Ukwama FR	TZ	No	Yes	1	1	0								1
Uluguru Mountains	TZ	Yes	Yes	250	76	174	17	14		14	1	7	8	189
Utete (Kibiti)	TZ	No	Yes	3	3	0								3
Uvidunda Mountains	TZ	Yes	Yes	3	1	2		1						2
Uzaramo (Dar to Morogoro)	TZ	No	Yes	2	0	2								2
Uzaramo (Msua)	TZ	No	Yes	2	2	0								2
Verani South West	TZ	No	Yes	1	1	0								1
Vigola	TZ	No	Yes	1	1	0								1
West Usambara Mountains	TZ	Yes	Yes	187	56	131	14	10		5	2	7	7	142
Witu FR	KE	No	Yes	21	12	9						3		18

Site name	Country	IBA	KBA	# threatened taxa 2015	RL vers. 2.3	RL vers. 3.1	Amphibia	Aves	Gastropoda	Insecta	Malacostraca	Mammalia	Reptilia	Plantae
Zanzibar (Kituani)	TZ	No	Yes	1	1	0								1
Zanzibar (Muyuni)	TZ	No	Yes	2	2	0								2
Zanzibar coast	TZ	Yes	Yes	21	3	18	1		1	4		1		14

Appendix 3. Potential KBA sites with distribution of Endangered and Critically Endangered taxa.

Site Name, Taxon name	IUCN status	Localities
Kaya Timbwa		
Plantae		
Magnoliopsida		
Montiniaceae		
Grevea eggelingii var. *keniensis*	EN	
Kilifi District coastal forests		
Animalia		
Amphibia		
Herpelidae		
Boulengerula changamwensis	EN	Bonje Village
Plantae		
Liliopsida		
Aloaceae		
Aloe kilifiensis	EN	Kilifi Creek
Araceae		
Stylochaeton bogneri	EN	Dzitsoni to Jaribuni
Cyperaceae		
Cyperus afrodunensis	EN	Malindi
Orchidaceae		
Polystachya fischeri	EN	Rabai Hills
Magnoliopsida		
Acanthaceae		
Blepharis kenyensis	EN	Kilifi; Magarini; Malindi
Justicia breviracemosa	EN	Vipingo
Gesneriaceae		
Saintpaulia ionantha subsp. *rupicola*	CR	Kachararoni Gorge; Kaloleni; Mwarakaya
Loranthaceae		
Englerina ramulosa	EN	Malindi
Lythraceae		
Ammannia stuhlmannii	EN	NE of Malindi
Myrtaceae		
Eugenia tanaensis	EN	Kaya Fimboni; Kombeni River
Rubiaceae		
Oxyanthus pyriformis subsp. *longitubus*	EN	Upriver from Pangani
Kwale District coastal forests		
Animalia		
Amphibia		
Herpelidae		
Boulengerula changamwensis	EN	Mukurumudzi River

Site Name, Taxon name	IUCN status	Localities
Hyperoliidae		
Afrixalus sylvaticus	EN	Mukurumudzi River
Hyperolius rubrovermiculatus	En	Mukurumudzi River
Plantae		
Liliopsida		
Aloaceae		i
Aloe classenii	CR	Kilibas
Aloe penduliflora	EN	Kilibasi
Araceae		
Stylochaeton bogneri	EN	Between Umba and Mwena River
Orchidaceae		
Habenaria stylites subsp. *stylites*	EN	Duruma, W of Mombasa
Polystachya fischeri	EN	Near Vigurugani
Magnoliopsida		
Acanthaceae		
Barleria maculata	EN	Mackinnon Road
Barleria whytei	EN	Kaya Bogowa
Justicia drummondii	CR	Lungalunga-Msambweni road; Maluganji FR
Gesneriaceae		
Saintpaulia ionantha subsp. *rupicola*	CR	Maweni Rocks
Leguminosae		
Microcharis microcharoides var. *latistipulata*	EN	Lungalunga-Msambweni road
Loranthaceae		
Agelanthus microphyllus	EN	Vigurangani Scheme
Polypodiopsida		
Marsileaceae		
Marsilea botryocarpa	EN	Taru
Marsilea fadeniana	CR	5.7 km from Samburu towards Nairobi
Lamu District coastal forests		
Plantae		
Magnoliopsida		
Acanthaceae		
Blepharis kenyensis	EN	Witu Mudirate
Euphorbiaceae		
Jatropha hildebrandtii var. *hildebrandtii*	EN	Kiunga; Kiwayu; Lamu Island; Nairobi Ranch
Leguminosae		
Newtonia erlangeri	EN	Mokowe to Bodhei
Oxystigma msoo	VU (proposed EN by EAPRLA)	Haiwani Forest
Loranthaceae		

Site Name, Taxon name	IUCN status	Localities
Englerina ramulosa	EN	Near Mangai
Lythraceae		
Ammannia mauritiana	EN	Shamba Ziwa; Badar water pan
Ammannia parkeri var. *parkeri*	EN	Near Milimani
Ammannia stuhlmannii	EN	Mokowe to Bodhei
Mahenge (areas not otherwise specified)		
Animalia		
Amphibia		
Brevicipitidae		
Probreviceps rungwensis	EN	
Mammalia		
Bovidae		
Cephalophus spadix	EN	
Plantae		
Liliopsida		
Orchidaceae		
Angraecopsis parva	EN	Muhulu Mts.
Habenaria isoantha	EN	
Magnoliopsida		
Acanthaceae		
Barleria amanensis	EN	
Annonaceae		
Artabotrys rupestris	EN	Issongo
Isolona heinsenii	EN	
Lythraceae		
Ammannia aurita	EN	Madi
Melastomataceae		
Warneckea schliebenii	EN	Muhulu Mts.
Polypodiopsida		
Woodsiaceae		
Callipteris ulugurica	EN	Muhulu Mts.
Malundwe		
Animalia		
Amphibia		
Brevicipitidae		
Probreviceps loveridgei	EN	
Masasi District forests		
Plantae		
Magnoliopsida		
Acanthaceae		
Barleria vollesenii	EN	Chivirikiti Village
Crabbea longipes	EN	Masasi Hill

Site Name, Taxon name	IUCN status	Localities
Lepidagathis plantaginea	EN	Chiwale Village
Leguminosae		
Bauhinia loeseneriana	VU (proposed EN by EAPRLA)	Kwa-Mkopo
Passifloraceae		
Adenia dolichosiphon	EN	Chiwale-Masasi track
Mombasa coast		
Animalia		
Amphibia		
Herpelidae		
Boulengerula changamwensis	EN	Changamwe
Plantae		
Magnoliopsida		
Leguminosae		
Crotalaria laburnoides var. *nudicarpa*	EN	Nyali; Shanzu Beach
Mtwara District coastal forests		
Plantae		
Magnoliopsida		
Leguminosae		
Cynometra gillmanii	CR (proposed EN by EAPRLA)	Mkunya River proposed FR
Montiniaceae		
Grevea eggelingii var. *echinocarpa*	EN	Mahurunga
Rubiaceae		
Pavetta macrosepala var. *macrosepala*	VU (proposed EN by EAPRLA)	Ruvuma Bay; Mnazi Mmoja-Mtwara road
Nachingwea District		
Plantae		
Magnoliopsida		
Acanthaceae		
Crabbea longipes	EN	
Lepidagathis plantaginea	EN	Lukeledi
Lythraceae		
Ammannia aurita	EN	
Ruangwa District coastal forests		
Plantae		
Magnoliopsida		
Loranthaceae		
Englerina macilenta	EN	Kiwetu
Taita District coastal forests		
Animalia		
Amphibia		

Site Name, Taxon name	IUCN status	Localities
Hyperoliidae		
Hyperolius puncticulatus	EN	Kitobo Forest
Plantae		
Liliopsida		
Aloaceae		
Aloe classenii	CR	Kizima [Kirima] Hill
Gramineae		
Panicum nudiflorum	EN	Lake Kandere [Kandiri]
Magnoliopsida		
Leguminosae		
Microcharis microcharoides var. latistipulata	EN	W of Mackinnon Road; Buchuma Range Research Station
Tanga District coast		
Plantae		
Liliopsida		
Araceae		
Stylochaeton bogneri	EN	Kange Gorge
Magnoliopsida		
Acanthaceae		
Isoglossa anisophylla	EN	Kange Gorge; Steinbruch Gorge
Isoglossa faulknerae	EN	Kange Gorge; Steinbruch Gorge
Annonaceae		
Uvaria faulknerae	EN	Tanga
Lythraceae		
Ammannia mauritiana	EN	Tanga-Pangani road
Rubiaceae		
Pavetta sphaerobotrys subsp. *lanceisepala*	VU (proposed EN by EAPRLA)	Amboni to Pande