

Threatened birds of the Angolan Central Escarpment: distribution and response to habitat change at Kumbira Forest

AIMY CÁCERES, MARTIM MELO, JOS BARLOW, PAULO CARDOSO
FRANCISCO MAIATO and MICHAEL S. L. MILLS

TABLE S1 Landsat scenes (1989–2010) used to assess changes in land-use and land cover in Kumbira Forest, on the Angolan Central Escarpment, with satellite, date, sun elevation, cloud cover, and root mean square error (RMSE).

Scene ID	Satellite	Date	Sun elevation (°)	Cloud cover (%)	RMSE (m)
LT51810681989152JSA00	Landsat 5	1 June 1989	41.2	14.0	7.04
LT51810681990139JSA01	Landsat 5	19 May 1990	41.5	0.0	5.40
LT51810681993131JSA00	Landsat 5	11 May 1993	43.0	0.0	4.72
LT51810681995249JSA00	Landsat 5	6 Sep. 1995	43.9	1.0	4.56
LT51810681997158JSA00	Landsat 5	7 June 1997	40.8	1.0	6.21
LT51810681998145JSA00	Landsat 5	25 May 1998	43.8	0.0	4.67
LE71810682001161EDC00	Landsat 5	10 June 2001	43.9	4.0	4.82
LE71810682006159ASN00	Landsat 7	8 June 2006	44.1	0.0	6.74
LT51810682009143JSA01	Landsat 5	23 May 2009	45.8	7.3	5.27
LE71810682010138ASN00	Landsat 7	18 May 2010	47.3	3.5	6.20

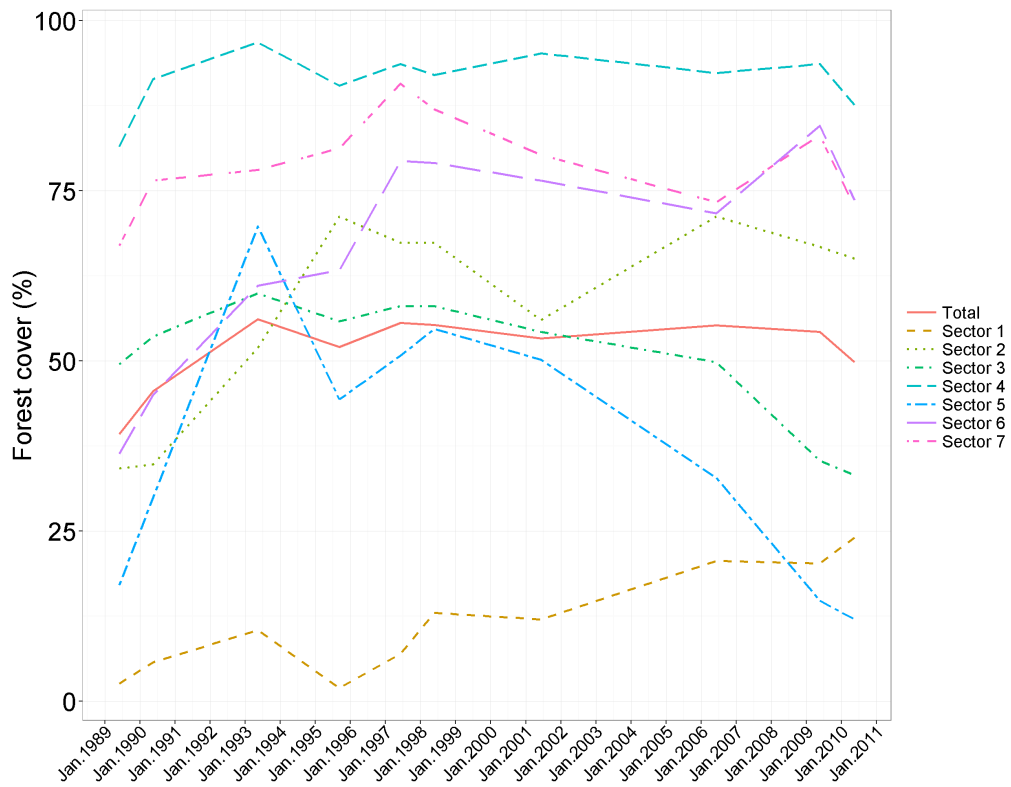


FIG. S1 Changes in percentage forest cover in the study area in Kumbira Forest, Angola (Fig. 1) during 1989–2010.

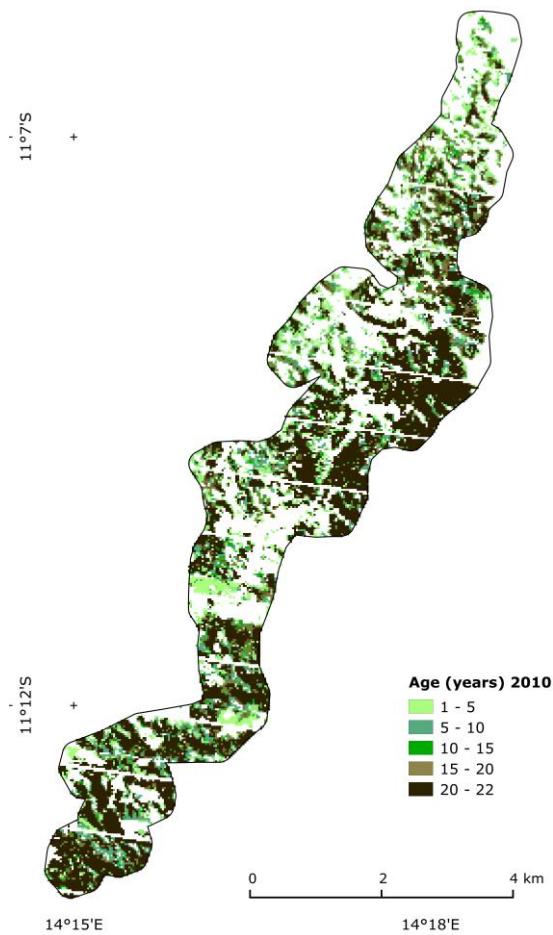


FIG. S2 Age of forest stands in Kumbira Forest, on the Angolan Central Escarpment (Fig. 1), in 2010. Forests occupied 65.2% of the study area at that time but only 30.8% of the area was covered by forest stands ≥ 22 years old.

TABLE S2 The 100 bird species recorded during surveys in Kumbira Forest (Fig. 1) in 2010.

Family	Scientific name	Common name
Numididae	<i>Guttera pucherani</i>	Crested guineafowl
Phasianidae	<i>Pternistis griseostriatus</i>	Grey-striped francolin
Accipitridae	<i>Accipiter melanoleucus</i>	Black sparrowhawk
	<i>Accipiter tachiro</i>	African goshawk
	<i>Kaupifalco monogrammicus</i>	Lizard buzzard
Columbidae	<i>Treron calvus</i>	African green pigeon
	<i>Turtur afer</i>	Blue-spotted wood dove
	<i>Turtur tympanistria</i>	Tambourine dove
Musophagidae	<i>Tauraco erythrolophus</i>	Red-crested turaco
Cuculidae	<i>Centropus anselli</i>	Gabon coucal
	<i>Ceuthmochares australis</i>	Green malkoha
	<i>Chrysococcyx klaas</i>	Klaas's cuckoo
Trogonidae	<i>Apaloderma narina</i>	Narina trogon
Alcedinidae	<i>Ceys pictus</i>	African pygmy kingfisher
Bucerotidae	<i>Tockus alboterminatus</i>	Crowned hornbill
Lybiidae	<i>Pogoniulus bilineatus</i>	Yellow-rumped tinkerbird
	<i>Pogoniulus subsulphureus</i>	Yellow-throated tinkerbird
	<i>Trachyphonus purpuratus</i>	Yellow-billed barbet
	<i>Tricholaema hirsuta</i>	Hairy-breasted barbet
Indicatoridae	<i>Indicator minor</i>	Lesser honeyguide
Picidae	<i>Campethera caroli</i>	Brown-eared woodpecker
	<i>Campethera nivosa</i>	Buff-spotted woodpecker
	<i>Dendropicos fuscescens</i>	Cardinal woodpecker
Eurylaimidae	<i>Smithornis capensis</i>	African broadbill
Platysteiridae	<i>Batis minulla</i>	Angolan batis
	<i>Dyaphorophyia castanea</i>	Chestnut wattle-eye
	<i>Dyaphorophyia concreta</i>	Yellow-bellied wattle-eye
	<i>Platysteira peltata</i>	Black-throated wattle-eye
Malaconotidae	<i>Chlorophoneus</i>	Orange-breasted bushshrike
	<i>sulfureopectus</i>	
	<i>Chlorophoneus viridis</i>	Gorgeous bushshrike

Family	Scientific name	Common name
	<i>Dryoscopus angolensis</i>	Pink-footed puffback
	<i>Dryoscopus cubla</i>	Black-backed puffback
	<i>Laniarius amboimensis</i>	Gabela bushshrike
	<i>Malaconotus monteiri</i>	Monteiro's bushshrike
Campephagidae	<i>Campephaga petiti</i>	Petit's cuckooshrike
Oriolidae	<i>Oriolus larvatus</i>	Black-headed oriole
Monarchidae	<i>Elminia longicauda</i>	African blue flycatcher
	<i>Terpsiphone rufocinerea</i>	Rufous-vented paradise flycatcher
	<i>Terpsiphone viridis</i>	African paradise flycatcher
	<i>Trochocercus nitens</i>	Blue-headed crested flycatcher
Paridae	<i>Parus funereus</i>	Dusky tit
Pycnonotidae	<i>Andropadus latirostris</i>	Yellow-whiskered greenbul
	<i>Bleda syndactylus</i>	Red-tailed bristlebill
	<i>Chlorocichla falkensteini</i>	Falkenstein's greenbul
	<i>Chlorocichla flaviventris</i>	Yellow-bellied greenbul
	<i>Nicator vireo</i>	Yellow-throated nicator
	<i>Phyllastrephus fulviventris</i>	Pale-olive greenbul
	<i>Pycnonotus tricolor</i>	Dark-capped bulbul
Hirundinidae	<i>Cecropis abyssinica</i>	Lesser striped swallow
	<i>Psaldiprocne pristoptera</i>	Black saw-wing
Cisticolidae	<i>Apalis binotata</i>	Lowland masked apalis
	<i>Apalis jacksoni</i>	Black-throated apalis
	<i>Apalis rufogularis</i>	Buff-throated apalis
	<i>Camaroptera harterti</i>	Hartert's camaroptera
	<i>Cisticola bulliens</i>	Bubbling cisticola
	<i>Prinia subflava</i>	Tawny-flanked prinia
Timaliidae	<i>Illadopsis fulvescens</i>	Brown illadopsis
Sylviidae	<i>Hylia prasina</i>	Green hylia
	<i>Hyliota australis</i>	Southern hyliota
	<i>Macrosphenus pulitzeri</i>	Pulitzer's longbill
	<i>Sylvietta virens</i>	Green crombec

Family	Scientific name	Common name
Zosteropidae	<i>Zosterops senegalensis</i>	African yellow white-eye
Sturnidae	<i>Cinnyricinclus leucogaster</i>	Violet-backed starling
Turdidae	<i>Pseudaethe poliocephala</i>	Brown-chested alethe
	<i>Stizorhina fraseri</i>	Fraser's rufous thrush
	<i>Turdus pelios</i>	African thrush
Muscicapidae	<i>Cossypha heuglini</i>	White-browed robin-chat
	<i>Cossypha natalensis</i>	Red-capped robin-chat
	<i>Erythropygia leucosticta</i>	Forest scrub robin
	<i>Muscicapa caerulescens</i>	Ashy flycatcher
	<i>Sheppardia gabela</i>	Gabela akalat
Nectariniidae	<i>Anthreptes seimundi</i>	Little green sunbird
	<i>Chalcomitra fuliginosa</i>	Carmelite sunbird
	<i>Cinnyris bifasciatus</i>	Purple-banded sunbird
	<i>Cinnyris chloropygius</i>	Olive-bellied sunbird
	<i>Cinnyris ludovicensis</i>	Ludwig's double-collared sunbird
	<i>Cinnyris superbus</i>	Superb sunbird
	<i>Cinnyris venustus</i>	Variable sunbird
	<i>Cyanomitra olivacea</i>	Olive sunbird
	<i>Cyanomitra verticalis</i>	Green-headed sunbird
	<i>Hedydipna collaris</i>	Collared sunbird
Passeridae	<i>Passer griseus</i>	Northern grey-headed sparrow
Ploceidae	<i>Amblyospiza albifrons</i>	Thick-billed weaver
	<i>Euplectes albonotatus</i>	White-winged widowbird
	<i>Ploceus bicolor</i>	Dark-backed weaver
	<i>Ploceus cucullatus</i>	Village weaver
	<i>Ploceus nigerrimus</i>	Vieillot's black weaver
	<i>Ploceus nigricollis</i>	Black-necked weaver
	<i>Ploceus xanthops</i>	African golden weaver
Estrildidae	<i>Cryptospiza reichenovii</i>	Red-faced crimsonwing
	<i>Estrilda astrild</i>	Common waxbill
	<i>Estrilda melpoda</i>	Orange-cheeked waxbill

Family	Scientific name	Common name
	<i>Lagonosticta landanae</i>	Landana firefinch
	<i>Lonchura bicolor</i>	Black-and-white mannikin
	<i>Lonchura cucullata</i>	Bronze mannikin
	<i>Mandingoa nitidula</i>	Green twinspace
	<i>Nigrita canicapillus</i>	Grey-headed nigrita
	<i>Spermophaga ruficapilla</i>	Red-headed bluebill
	<i>Uraeginthus angolensis</i>	Blue waxbill
Fringillidae	<i>Serinus capistratus</i>	Black-faced canary

Table S3 The 73 bird species recorded during surveys in Kumbira Forest (Fig. 1) in 2012.

Family	Scientific name	Common name
Phasianidae	<i>Pternistis afer</i>	Red-necked spurfowl
Accipitridae	<i>Accipiter melanoleucus</i>	Black sparrowhawk
	<i>Accipiter tachiro</i>	African goshawk
Columbidae	<i>Columba larvata</i>	Lemon dove
	<i>Treron calvus</i>	African green pigeon
	<i>Turtur afer</i>	Blue-spotted wood dove
	<i>Turtur tympanistria</i>	Tambourine dove
Musophagidae	<i>Tauraco erythrolophus</i>	Red-crested turaco
Cuculidae	<i>Centropus anelli</i>	Gabon coucal
	<i>Ceuthmochares australis</i>	Green malkoha
	<i>Chrysococcyx cupreus</i>	African emerald cuckoo
	<i>Chrysococcyx klaas</i>	Klaas's cuckoo
Trogonidae	<i>Apaloderma narina</i>	Narina trogon
Bucerotidae	<i>Bycanistes bucinator</i>	Trumpeter hornbill
	<i>Tockus alboterminatus</i>	Crowned hornbill
Lybiidae	<i>Pogoniulus bilineatus</i>	Yellow-rumped tinkerbird
	<i>Trachyphonus purpuratus</i>	Yellow-billed barbet
	<i>Tricholaema hirsuta</i>	Hairy-breasted barbet
	<i>Gymnobucco calvus</i>	Naked-faced barbet
Indicatoridae	<i>Indicator minor</i>	Lesser honeyguide
Eurylaimidae	<i>Smithornis capensis</i>	African broadbill
Platysteiridae	<i>Batis minulla</i>	Angola batis
	<i>Dyaphorophya castanea</i>	Chestnut wattle-eye
	<i>Dyaphorophya concreta</i>	Yellow-bellied wattle-eye
Malaconotidae	<i>Chlorophoneus viridis</i>	Gorgeous bushshrike
	<i>Dryoscopus angolensis</i>	Pink-footed puffback
	<i>Laniarius amboimensis</i>	Gabela bushshrike
Campephagidae	<i>Campephaga petiti</i>	Petit's cuckooshrike
Oriolidae	<i>Oriolus larvatus</i>	Black-headed oriole
Monarchidae	<i>Elminia longicauda</i>	African blue flycatcher

Family	Scientific name	Common name
	<i>Terpsiphone</i> sp.	Paradise flycatcher
Paridae	<i>Parus funereus</i>	Dusky tit
Pycnonotidae	<i>Andropadus latirostris</i>	Yellow-whiskered greenbul
	<i>Bleda syndactylus</i>	Red-tailed bristlebill
	<i>Chlorocichla falkensteini</i>	Falkenstein greenbul
	<i>Phyllastrephus fulviventris</i>	Pale-olive greenbul
	<i>Pycnonotus tricolor</i>	Dark-capped bulbul
Nicatoridae	<i>Nicator vireo</i>	Yellow-throated nicator
Hirundinidae	<i>Psalidoprocne pristoptera</i>	Black saw-wing
Acrocephalidae	<i>Iduna natalensis</i>	Dark-capped yellow warbler
Cisticolidae	<i>Apalis binotata</i>	Lowland masked apalis
	<i>Apalis jacksoni</i>	Black-throated apalis
	<i>Apalis rufogularis</i>	Buff-throated apalis
	<i>Camaroptera harterti</i>	Hartert's camaroptera
	<i>Cisticola bulliens</i>	Bubbling cisticola
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Timaliidae	<i>Illadopsis fulvescens</i>	Brown illadopsis
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	<i>Cinnyris chloropygius</i>	Olive-bellied sunbird
	<i>Cinnyris superbus</i>	Superb sunbird
	<i>Cinnyris venustus</i>	Variable sunbird
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	<i>Cyanomitra verticalis</i>	Green-headed sunbird
	<i>Hedydipna collaris</i>	Collared sunbird
Ploceidae	<i>Ploceus bicolor</i>	Dark-backed weaver
	<i>Ploceus cucullatus</i>	Village weaver
	<i>Ploceus nigricollis</i>	Black-necked weaver
Estrildidae	<i>Lonchura bicolor</i>	Black-and-white mannikin
Fringillidae	<i>Serinus capistratus</i>	Black-faced canary
	<i>Serinus mozambicus</i>	Yellow-fronted canary

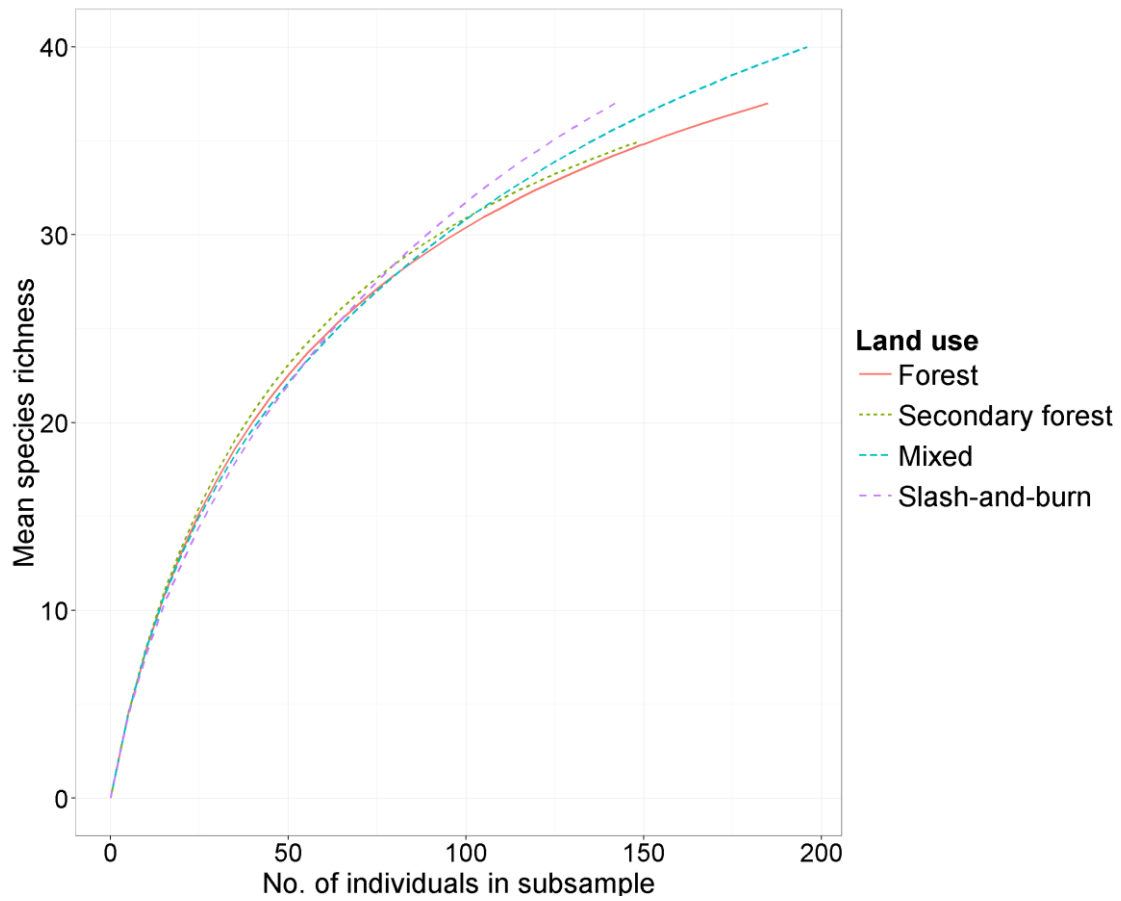


FIG. S3 Individual-based species accumulation curves. No asymptotes were reached and no differences in species richness among land-use types were observed (mixed: 40 species; slash-and-burn: 35 species; secondary forest: 35 species; forest: 37 species).