

# Ornithological Observations



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Ornithological Observations accepts papers containing faunistic information about birds. This includes descriptions of distribution, behaviour, breeding, foraging, food, movement, measurements, habitat and plumage. It will also consider for publication a variety of other interesting or relevant ornithological material: reports of projects and conferences, annotated checklists for a site or region, specialist bibliographies, and any other interesting or relevant material.

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## REPORTING RATE COMPARISONS FOR BIRDS IN THE NELSPRUIT AREA – SABAP1 VS SABAP2

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## REPORTING RATE COMPARISONS FOR BIRDS IN THE NELSPRUIT AREA – SABAP1 VS SABAP2

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### INTRODUCTION

The second **Southern African Bird Atlas Project (SABAP2)** is now in its fourth year. It started approximately 15 years after the first bird atlas project (SABAP1) has ended. Although the methodology of data collection differs significantly between these two projects, the data can still be compared with some degree of accuracy. In this paper data from the two projects will be compared for the Nelspruit area in Mpumalanga. At the time of writing the same number of data cards had been submitted for the Nelspruit quarter degree grid cell (QDGC) 2530BD for both projects, viz 215.

### METHODOLOGY

SABAP1 used basic rules to record birds whereas SABAP2 is using a more complicated protocol. A comparison between the methodology of the two projects is made in Table 1.

The scientific value of data gathered for SABAP2 lies in the repeatability and standardization of the field surveys. To date, 800 observers all over South Africa have collected data for 7 700 pentads<sup>1</sup> (44% coverage) comprising over 41 000 cards containing over 2 million records. Biodiversity monitoring, conservation planning and effects of climate change are but three examples of what the data will be used for.

**Table 1** - Comparison between SABAP1 and SABAP2

METHODOLOGY ASPECT	SABAP1 (1987-1991)	SABAP2 (2007-present)
Spatial scale	Quarter degree grid cell (25.2km x 27.6km)*	Pentad = 5min x 5min (8.4km x 9.2km)*
Maximum time scale/card	1 month	5 days
Data capture	random	standardised
Effort	not recorded	effort (time in field) recorded

\*Nelspruit area, the sizes differ further away from the equator

The pentad code is a unique reference number given to each 8.4km x 9.2km square. The code is derived from the coordinates of longitude and latitude at the top left-hand corner of the square. There are 9 of these in a quarter degree grid cell (QDGC) (ref Table 2). The numbers under each month reflect the total number of cards submitted per pentad, and the last two columns reflect the total cards for each pentad and the total number of species recorded to date. The last row reflecting 118 cards submitted and 264 species recorded is the pentad in which Nelspruit city is situated. It is situated in the bottom right-hand corner of the QDGC (ref Table 3). Rosehaugh is at the top left-hand corner of the grid (top pentad in the table above), Heidelberg is at the top right (third pentad shown above) and Schagen is at the bottom-left corner of the grid (third pentad from the bottom). The names in parentheses given to the pentads are names used by the observer to identify the pentads more easily. The database works strictly with the pentad codes.

SABAP1 used the whole QDGC as the area to collect data, while SABAP2 uses the 9 different pentads as grid for collecting data. SABAP2 is therefore collecting data at a finer scale and bird distribution is mapped at a finer scale.

<sup>1</sup> SABAP2 is work in progress – the data reflected here were at the time of writing this paper - Ed



**Table 2** - Summary of the pentad coverage for SABAP2 for the Nelspruit QDGC – 2530BD:

Pentad Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cards per month	Species
2515_3045	0	0	1	1	1	1	1	1	1	0	0	1	8	134
2515_3050	0	0	0	0	0	2	1	1	2	1	0	0	7	102
2515_3055	1	1	1	1	1	1	1	1	1	1	1	1	12	165
2520_3045	0	0	0	0	1	1	1	1	2	1	0	1	8	159
2520_3050	1	1	1	1	1	1	1	1	1	1	1	1	12	195
2520_3055	1	1	1	2	1	1	1	1	1	1	1	4	16	190
2525_3045	1	2	1	1	1	1	1	2	2	1	1	1	15	200
2525_3050	2	1	1	1	1	2	1	3	2	1	1	3	19	200
2525_3055	7	7	7	10	9	9	15	12	13	9	8	12	118	264

SABAP1 Cards: 215 SABAP1 Species: 314

SABAP2 Cards: 215 SABAP2 Species: 300

**Table 3** - Pentads in the Nelspruit QDGC - 2530BD

2515_3045 (Rosehaugh)	2515_3050 (Brooklands)	2515_3055 (Heidelberg)
2520_3045 (Mount Carmel)	2520_3050 (Brondal)	2520_3055 (Rocky Drift)
2525_3045 (Schagen)	2525_3050 (Cairn)	2525_3055 (Nelspruit)

**RESULTS AND DISCUSSION**

This paper aims to compare SABAP1 data with SABAP2 data and therefore the data of the 9 pentads should be collated to be able to draw a comparison. When reporting rates for specific species from the two atlas projects are compared, the species which are more common, which are less common, which are no longer recorded and which are new to the area can be identified. The total, combined species list for the Nelspruit grid for both atlas projects come to 346.

Firstly, the total number of species has dropped, SABAP1 produced 314 species from 215 cards and SABAP2 has produced 300 species from 215 cards. The “missing” species per project are listed in Table 4 below:

**Table 4** - Comparison of species not recorded during the two atlas projects

SABAP1 only	SABAP2 only
African Cuckoo	African Marsh-Harrier
African Hawk Eagle	Bearded Scrub-Robin
African Quailfinch	Black-bellied Starling
African Rail	Black-throated Canary
African Scops-Owl	Broad-tailed Warbler
Banded Martin	Chestnut-vented Tit-Babbler
Black Stork	Common Greenshank
Black-crowned Night-Heron	Common Myna
Blue Crane	Cut-throat Finch



Booted Eagle	Drakensberg Prinia
Cape Rock-Thrush	Eastern Nicator
Common Cuckoo	European Roller
Common Swift	Goliath Heron
Coqui Francolin	Grey Go-away-bird
Dwarf Bittern	Karoo Thrush
European Nightjar	Mallard
Forest Buzzard	Marico Sunbird
Gabar Goshawk	Olive Sunbird
Garden Warbler	Purple-banded Sunbird
Greater Blue-eared Starling	Rattling Cisticola
Greater Flamingo	Rock Kestrel
Green Sandpiper	Sand Martin
Grey-headed Gull	Southern Bald Ibis
Harlequin Quail	Southern Tchagra
Jameson's Firefinch	Square-tailed Drongo
Little Stint	Temminck's Courser
Marsh Owl	Wailing Cisticola
Red-billed Teal	White-necked Raven
Red-necked Spurfowl	Yellow Wagtail
Secretarybird	Yellow-streaked Greenbul
Shikra	
Southern Pochard	
Southern White-faced Scops-Owl	
Square-tailed Nightjar	
Tawny Eagle	
Verreaux's Eagle	
Violet-eared Waxbill	
Wattled Starling	
White-bellied Korhaan	
Wing-snapping Cisticola	
Yellow Bishop	
Yellow-billed Stork	
Yellow-crowned Bishop	

Most of the species listed in Table 4 had/have very low reporting rates, indicating a high level of vagrancy. Some however are now common (eg Cut-throat Finch now has a reporting rate of 20% - SABAP2) and some may be misidentifications.

Table 5 lists the species showing a significantly lower reporting rate in SABAP2. Of these birds 15 are wetland species, 11 grassland species, 8 birds of prey, 4 nocturnal species and 3 are Red Data species. Only 1 species in Table 5 is a woodland species: Jameson's Firefinch.

The Nelspruit QDGC is losing wetlands and grasslands – the available data prove what had been suspected over time. The main known causes may be rapid urban and agricultural development. A third reason may be bush encroachment.

**Table 5 - Bird species reflecting significantly lower reporting rates**

African Crowned Eagle	Little Bittern
Barn Owl	Little Grebe
Black-bellied Bustard	Malachite Kingfisher
Blue Crane	Mountain Wagtail
Blue Waxbill	Pied Kingfisher
Brown Snake-Eagle	Purple Heron
Cape Turtle Dove	Red-knobbed Coot
Common Moorhen	Secretarybird
Common Sandpiper	Shelley's Francolin
Coqui Francolin	Spotted Eagle-Owl
Fiery-necked Nightjar	Spotted Thick-knee
Forest Buzzard	Verreaux's Eagle
Giant Kingfisher	Wahlberg's Eagle
Great Egret	White Stork
Green-backed Heron	Wood Sandpiper
Hamerkop	Yellow-billed Duck
Jameson's Firefinch	



Five of the species in Table 5 have not been recorded during SABAP2: Secretarybird, Blue Crane, Verreaux's Eagle, Coqui Francolin and Jameson's Firefinch.

Table 6 displays the species that are increasing in the Nelspruit QDGC

**Table 6** - Bird species reflecting significantly higher reporting rates

African Firefinch	Long-billed Crombec
African Goshawk	Marico Sunbird
African Wood-Owl	Neddicky
Ashy Flycatcher	Olive Sunbird
Bearded Scrub-Robin	Olive Woodpecker
Blacksmith Lapwing	Purple-banded Sunbird
Brimstone Canary	Red-billed Quelea
Brown-backed Honeybird	Red-eyed Dove
Cape Batis	Red-faced Cisticola
Cape Glossy Starling	Red-throated Wryneck
Cape Grassbird	Rock Martin
Cape Robin-Chat	Rufous-naped Lark
Cape Weaver	Scarlet-chested Sunbird
Common Myna	Sombre Greenbul
Cut-throat Finch	Southern Black Flycatcher
Eastern Nicator	Southern Grey-headed Sparrow
Egyptian Goose	Southern Masked-Weaver
Golden Weaver	Spectacled Weaver
Greater Double-collared Sunbird	Streaky-headed Seedeater
Green Twinspot	Tambourine Dove
Green-backed Camaroptera	Tawny-flanked Prinia
Lazy Cisticola	Terrestrial Brownbul

Lesser Masked-Weaver	Thick-billed Weaver
Lesser Swamp-Warbler	Village Weaver
Levaillant's Cisticola	White-fronted Bee-eater
Little Rush-Warbler	Wire-tailed Swallow
Little Sparrowhawk	Yellow-breasted Apalis
Little Swift	Yellow-rumped Tinkerbird

Of the species which have shown an increase in reporting rate, 24 species are forest/thicket species, including Cape Batis, Little Sparrowhawk, Yellow-rumped Tinkerbird, Green Twinspot and Olive Woodpecker.

The Nelspruit area has been classified as Sour Bushveld and not Forest. Why are so many forest species increasing? Drainage lines and valleys are being encroached by the Category 1 invader *Lantana camara*, the pioneer Flamethorn *Acacia ataxacantha* and others, creating a more suitable environment for the establishment of indigenous and alien forest trees. Gardens in town are also getting woodier, and so is the Lowveld Botanical Garden. Forest/thicket birds unrecorded 15 years ago are now fairly common and include Olive Sunbird, Bearded Scrub-Robin and Eastern Nicator.

Eighteen species listed in Table 6 are woodland birds. Some may be due to observer bias. Almost all of the woodland birds in the table above have increased reporting rates of 100% or more. These include Cape Glossy Starling, Lesser Masked Weaver, Red-throated Wryneck and Long-billed Crombec.

Seven species listed above occur in tall grass/reeds and this may indicate dramatic eutrophication of our remaining wetlands, causing an increase in vegetation height and favouring more competitive, robust grass species. These species include Red-faced Cisticola, Cape Grassbird, Cape Weaver, Lesser Swamp Warbler and Little Rush Warbler.



On the other hand 3 wetland species have increased – all are common species which have adapted well to urban environments: Blacksmith Lapwing, Egyptian Goose and Wire-tailed Swallow. These species have actually benefitted from urbanisation.

Three other species have drastically increased in reporting rate as a direct result of urban expansion – Common Myna, Rock Martin and Little Swift. The myna was unrecorded during SABAP1, and now has a reporting rate of 53%! One grassland species has increased in reporting rate: Rufous-naped Lark. This may be due to an increase in observer knowledge of birdcalls as this species is actually losing ground and not increasing in range!

### CONCLUSION

To summarise, the Nelspruit area is undergoing a rapid change in vegetation resulting in both an increase and decrease of bird species. Wetland and grassland species show significantly lower reporting rates now, and forest and woodland birds are reflecting dramatic increases in reporting rates. The priority would be to preserve what little wetland and grassland habitat remains. Observers can also keep a look out for more forest and woodland species in the Nelspruit QDGC – they are on the increase albeit slowly.

## APPENDICES

### Appendix 1. Reporting rate comparisons

SABAP1	%	SABAP2	%
Abdim's Stork	5	Abdim's Stork	2
Acacia Pied Barbet	1	Acacia Pied Barbet	1
African Black Duck	32	African Black Duck	20
African Black Swift	7	African Black Swift	4
African Crowned Eagle	12	African Crowned Eagle	1
African Cuckoo	1		
African Cuckoo Hawk	7	African Cuckoo Hawk	1
African Darter	19	African Darter	10
African Dusky Flycatcher	11	African Dusky Flycatcher	15
African Emerald Cuckoo	1	African Emerald Cuckoo	1
African Finfoot	4	African Finfoot	6
African Firefinch	50	African Firefinch	71
African Fish-Eagle	13	African Fish-Eagle	12
African Goshawk	31	African Goshawk	52
African Green-Pigeon	58	African Green-Pigeon	41
African Grey Hornbill	3	African Grey Hornbill	4
African Harrier-Hawk	24	African Harrier-Hawk	20
African Hawk Eagle	1		
African Hoopoe	57	African Hoopoe	49
African Jacana	5	African Jacana	14
		African Marsh-Harrier	1
African Olive-Pigeon	16	African Olive-Pigeon	5
African Palm-Swift	54	African Palm-Swift	77
African Paradise-Flycatcher	51	African Paradise-Flycatcher	50
African Pied Wagtail	41	African Pied Wagtail	58
African Pipit	4	African Pipit	15
African Pygmy-Kingfisher	10	African Pygmy-Kingfisher	6
African Quailfinch	1		
African Rail	2		
African Reed-Warbler	7	African Reed-Warbler	17
African Sacred Ibis	1	African Sacred Ibis	1



African Scops-Owl	1		
African Stonechat	46	African Stonechat	42
African Wattled Lapwing	26	African Wattled Lapwing	33
African Wood-Owl	3	African Wood-Owl	10
Alpine Swift	7	Alpine Swift	6
Amethyst Sunbird	74	Amethyst Sunbird	97
Amur Falcon	2	Amur Falcon	4
Arrow-marked Babbler	27	Arrow-marked Babbler	56
Ashy Flycatcher	23	Ashy Flycatcher	38
Ayres Hawk-Eagle	7	Ayres's Hawk-Eagle	3
Banded Martin	1		
Barn Owl	25	Barn Owl	15
Barn Swallow	35	Barn Swallow	39
Bar-throated Apalis	48	Bar-throated Apalis	87
		Bearded Scrub-Robin	8
Bearded Woodpecker	3	Bearded Woodpecker	7
Black Crake	34	Black Crake	35
Black Cuckoo	16	Black Cuckoo	15
Black Cuckooshrike	14	Black Cuckooshrike	23
Black Saw-wing	20	Black Saw-wing	21
Black Sparrowhawk	11	Black Sparrowhawk	8
Black Stork	1		
Black-backed Puffback	69	Black-backed Puffback	81
Black-bellied Bustard	3	Black-bellied Bustard	1
		Black-bellied Starling	1
Black-collared Barbet	84	Black-collared Barbet	91
Black-crowned Night-Heron	1		
Black-crowned Tchagra	33	Black-crowned Tchagra	40
Black-headed Heron	16	Black-headed Heron	17
Black-headed Oriole	55	Black-headed Oriole	65
Black-shouldered Kite	52	Black-shouldered Kite	41
Blacksmith Lapwing	4	Blacksmith Lapwing	38
		Black-throated Canary	1
Black-winged Lapwing	3	Black-winged Lapwing	1

Blue Crane	5		
Blue Waxbill	40	Blue Waxbill	23
Blue-mantled Crested-Flycatcher	1	Blue-mantled Crested-Flycatcher	1
Booted Eagle	1		
Brimstone Canary	24	Brimstone Canary	63
		Broad-tailed Warbler	2
Bronze Mannikin	79	Bronze Mannikin	94
Brown Snake-Eagle	9	Brown Snake-Eagle	4
Brown-backed Honeybird	5	Brown-backed Honeybird	21
Brown-crowned Tchagra	11	Brown-crowned Tchagra	3
Brown-hooded Kingfisher	78	Brown-hooded Kingfisher	83
Brown-throated Martin	6	Brown-throated Martin	5
Brubru	15	Brubru	20
Buff-spotted Flufftail	3	Buff-spotted Flufftail	2
Buff-streaked Chat	8	Buff-streaked Chat	1
Burchell's Coucal	52	Burchell's Coucal	53
Cape Batis	5	Cape Batis	17
Cape Canary	10	Cape Canary	16
Cape Glossy Starling	7	Cape Glossy Starling	40
Cape Grassbird	27	Cape Grassbird	53
Cape Robin-Chat	34	Cape Robin-Chat	65
Cape Rock-Thrush	1		
Cape Turtle Dove	70	Cape Turtle-Dove	45
Cape Wagtail	42	Cape Wagtail	47
Cape Weaver	11	Cape Weaver	41
Cape White-eye	90	Cape White-eye	96
Cardinal Woodpecker	35	Cardinal Woodpecker	53
Cattle Egret	77	Cattle Egret	74
		Chestnut-vented Tit-Babbler	1
Chinspot Batis	6	Chinspot Batis	5
Chorister Robin-Chat	2	Chorister Robin-Chat	1
Cinnamon-breasted Bunting	7	Cinnamon-breasted Bunting	8
Collared Sunbird	41	Collared Sunbird	62
Comb Duck	1	Comb Duck	3





Common Cuckoo	1		
Common Fiscal	82	Common Fiscal	90
		Common Greenshank	1
Common House-Martin	4	Common House-Martin	3
Common Moorhen	24	Common Moorhen	11
		Common Myna	53
Common Quail	2		
Common Sandpiper	23	Common Sandpiper	8
Common Scimitarbill	25	Common Scimitarbill	10
Common Swift	1		
Common Waxbill	61	Common Waxbill	71
Coqui Francolin	3		
Crested Barbet	34	Crested Barbet	64
Croaking Cisticola	12	Croaking Cisticola	26
Crowned Lapwing	8	Crowned Lapwing	22
Cuckoo Finch	1	Cuckoo Finch	1
		Cut-throat Finch	20
Dark-capped Bulbul	97	Dark-capped Bulbul	99
Dark-capped Yellow Warbler	13	Dark-capped Yellow Warbler	33
Dideric Cuckoo	27	Diderick Cuckoo	27
		Drakensberg Prinia	5
Dusky Indigobird	19	Dusky Indigobird	23
Dwarf Bittern	1		
		Eastern Nicator	1
Egyptian Goose	7	Egyptian Goose	36
Emerald-spotted Wood-Dove	65	Emerald-spotted Wood-Dove	63
Eurasian Hobby	4	Eurasian Hobby	3
European Bee-eater	40	European Bee-eater	29
European Nightjar	1		
		European Roller	1
Familiar Chat	1	Familiar Chat	6
Fan-tailed Widowbird	35	Fan-tailed Widowbird	52
Fiery-necked Nightjar	37	Fiery-necked Nightjar	11
Fiscal Flycatcher	3	Fiscal Flycatcher	1

Flappet Lark	1	Flappet Lark	1
Forest Buzzard	8		
Forest Canary	3	Forest Canary	1
Fork-tailed Drongo	74	Fork-tailed Drongo	79
Freckled Nightjar	11	Freckled Nightjar	15
Gabar Goshawk	1		
Garden Warbler	3		
Giant Kingfisher	40	Giant Kingfisher	22
Glossy Ibis	1	Glossy Ibis	1
Golden-Weaver	44	Golden Weaver	84
Golden-breasted Bunting	14	Golden-breasted Bunting	12
Golden-tailed Woodpecker	41	Golden-tailed Woodpecker	61
		Goliath Heron	1
Gorgeous Bush-Shrike	45	Gorgeous Bush-Shrike	40
Great Egret	4	Great Egret	1
Great Reed-Warbler	6	Great Reed-Warbler	4
Greater Blue-eared Starling	1		
Greater Double-collared Sunbird	10	Greater Double-collared Sunbird	28
Greater Flamingo	1		
Greater Honeyguide	6	Greater Honeyguide	5
Greater Striped-Swallow	3	Greater Striped Swallow	6
Green Sandpiper	1		
Green Twinspot	2	Green Twinspot	10
Green Wood-hoopoe	21	Green Wood-Hoopoe	30
Green-backed Camaroptera	53	Green-backed Camaroptera	72
Green-backed Heron	24	Green-backed Heron	12
Grey Cuckooshrike	2	Grey Cuckooshrike	1
		Grey Go-away-bird	1
Grey Heron	3	Grey Heron	3
Grey Penduline-Tit	8	Grey Penduline-Tit	6
Grey Tit-Flycatcher	6	Grey Tit-Flycatcher	6
Grey-headed Bush-Shrike	33	Grey-headed Bush-Shrike	20
Grey-headed Gull	1		
Grey-rumped Swallow	29	Grey-rumped Swallow	29





Groundscraper Thrush	10	Groundscraper Thrush	14
Hadedea Ibis	92	Hadedea Ibis	88
Half-collared Kingfisher	10	Half-collared Kingfisher	8
Hamerkop	67	Hamerkop	44
Harlequin Quail	1		
Helmeted Guineafowl	47	Helmeted Guineafowl	65
Horus Swift	1	Horus Swift	1
House Sparrow	64	House Sparrow	70
Jackal Buzzard	13	Jackal Buzzard	5
Jacobin Cuckoo	1	Jacobin Cuckoo	1
Jameson's Firefinch	5		
		Karoo Thrush	3
Klaas's Cuckoo	40	Klaas's Cuckoo	27
Knysna Turaco	14	Knysna Turaco	3
Kurrichane Buttonquail	2	Kurrichane Buttonquail	1
Kurrichane Thrush	84	Kurrichane Thrush	86
Lanner Falcon	1	Lanner Falcon	3
Laughing Dove	78	Laughing Dove	75
Lazy Cisticola	20	Lazy Cisticola	41
Lemon Dove	1	Lemon Dove	1
Lesser Honeyguide	18	Lesser Honeyguide	16
Lesser Masked Weaver	11	Lesser Masked-Weaver	27
Lesser Moorhen	1	Lesser Moorhen	1
Lesser Striped-Swallow	54	Lesser Striped Swallow	64
Lesser Swamp-Warbler	13	Lesser Swamp-Warbler	28
Le Vaillant's Cisticola	15	Levaillant's Cisticola	36
Levaillant's Cuckoo	2	Levaillant's Cuckoo	1
Little Bee-eater	40	Little Bee-eater	28
Little Bittern	10	Little Bittern	1
Little Egret	1	Little Egret	1
Little Grebe	33	Little Grebe	15
Little Rush- Warbler	21	Little Rush-Warbler	48
Little Sparrowhawk	4	Little Sparrowhawk	14
Little Stint	1		

Little Swift	22	Little Swift	53
Lizard Buzzard	6	Lizard Buzzard	2
Long-billed Crombec	29	Long-billed Crombec	56
Long-billed Pipit	1	Long-billed Pipit	1
Long-crested Eagle	38	Long-crested Eagle	28
Malachite Kingfisher	26	Malachite Kingfisher	14
		Mallard	1
		Marico Sunbird	2
Marsh Owl	1		
Marsh Warbler	10	Marsh Warbler	16
Martial Eagle	3	Martial Eagle	1
Mocking Cliff-Chat	7	Mocking Cliff-Chat	12
Mountain Wagtail	16	Mountain Wagtail	11
Mountain Wheatear	5	Mountain Wheatear	1
Namaqua Dove	1	Namaqua Dove	1
Narina Trogon	6	Narina Trogon	3
Natal Spurfowl	67	Natal Spurfowl	84
Neddicky	24	Neddicky	58
Olive Bush-Shrike	20	Olive Bush-Shrike	23
		Olive Sunbird	11
Olive Thrush	1	Olive Thrush	1
Olive Woodpecker	9	Olive Woodpecker	17
Orange-breasted Bush-Shrike	65	Orange-breasted Bush-Shrike	58
Orange-breasted Waxbill	9	Orange-breasted Waxbill	11
Peregrine Falcon	2	Peregrine Falcon	5
Pied Crow	41	Pied Crow	20
Pied Kingfisher	26	Pied Kingfisher	21
Pin-tailed Whydah	48	Pin-tailed Whydah	56
Plain-backed Pipit	1	Plain-backed Pipit	1
Purple Heron	15	Purple Heron	5
		Purple-banded Sunbird	1
Purple-crested Turaco	89	Purple-crested Turaco	91
		Rattling Cisticola	15
Red-backed Mannikin	13	Red-backed Mannikin	11



Red-backed Shrike	4	Red-backed Shrike	2
Red-billed Firefinch	12	Red-billed Firefinch	5
Red-billed Quelea	1	Red-billed Quelea	16
Red-billed Teal	1		
Red-capped Robin-Chat	40	Red-capped Robin-Chat	34
Red-chested Cuckoo	33	Red-chested Cuckoo	29
Red-chested Flufftail	3	Red-chested Flufftail	3
Red-collared Widowbird	41	Red-collared Widowbird	61
Red-eyed Dove	68	Red-eyed Dove	93
Red-faced Cisticola	33	Red-faced Cisticola	83
Red-faced Mousebird	33	Red-faced Mousebird	22
Red-headed Weaver	7	Red-headed Weaver	2
Red-knobbed Coot	12	Red-knobbed Coot	1
Red-necked Spurfowl	1		
Red-throated Wryneck	15	Red-throated Wryneck	45
Red-winged Starling	55	Red-winged Starling	50
Reed Cormorant	42	Reed Cormorant	52
Rock Dove	40	Rock Dove	29
		Rock Kestrel	1
Rock Martin	7	Rock Martin	36
Ruff	1	Ruff	1
Rufous-naped Lark	13	Rufous-naped Lark	26
		Sand Martin	1
Scaly-throated Honeyguide	7	Scaly-throated Honeyguide	10
Scarlet-chested Sunbird	28	Scarlet-chested Sunbird	58
Secretarybird	8		
Sedge Warbler	2	Sedge Warbler	2
Shelley's Francolin	5	Shelley's Francolin	1
Shikra	2		
Sombre Greenbul	63	Sombre Greenbul	93
		Southern Bald Ibis	1
Southern Black-Flycatcher	39	Southern Black Flycatcher	68
Southern Black Tit	60	Southern Black Tit	58
Southern Boubou	60	Southern Boubou	84

Southern Double-collared Sunbird	13	Southern Double-collared Sunbird	10
Southern Greyheaded Sparrow	20	Southern Grey-headed Sparrow	81
Southern Masked-Weaver	9	Southern Masked-Weaver	26
Southern Pochard	1		
Southern Red Bishop	40	Southern Red Bishop	66
		Southern Tchagra	1
Southern White-faced Scops-Owl	1		
Southern Yellow-billed Hornbill	5	Southern Yellow-billed Hornbill	7
Speckled Mousebird	93	Speckled Mousebird	94
Speckled Pigeon	5	Speckled Pigeon	1
Spectacled Weaver	56	Spectacled Weaver	93
Spotted Eagle-Owl	35	Spotted Eagle-Owl	15
Spotted Flycatcher	18	Spotted Flycatcher	14
Spotted Thick-knee	15	Spotted Thick-knee	4
Spur-winged Goose	13	Spur-winged Goose	9
		Square-tailed Drongo	1
Square-tailed Nightjar	1		
Steppe Buzzard	13	Steppe Buzzard	14
Streaky-headed Seedeater	48	Streaky-headed Seedeater	80
Striped Kingfisher	1	Striped Kingfisher	3
Striped Pipit	15	Striped Pipit	14
Swainson's Spurfowl	1	Swainson's Spurfowl	1
Swee Waxbill	5	Swee Waxbill	4
Tambourine Dove	38	Tambourine Dove	57
Tawny Eagle	1		
Tawny-flanked Prinia	53	Tawny-flanked Prinia	94
		Temminck's Courser	1
Terrestrial Brownbul	17	Terrestrial Brownbul	31
Thick-billed Weaver	46	Thick-billed Weaver	76
Three-banded Plover	20	Three-banded Plover	26
Trumpeter Hornbill	3	Trumpeter Hornbill	1
Verreaux's Eagle	4		
Village Indigobird	2	Village Indigobird	1
Village Weaver	38	Village Weaver	75



Violet-backed Starling	31	Violet-backed Starling	28
Violet-eared Waxbill	1		
Wahlberg's Eagle	13	Wahlberg's Eagle	3
		Wailing Cisticola	2
Water Thick-knee	2	Water Thick-knee	1
Wattled Starling	1		
White Stork	11	White Stork	1
White-backed Duck	2	White-backed Duck	2
White-bellied Korhaan	1		
White-bellied Sunbird	76	White-bellied Sunbird	92
White-breasted Cormorant	3	White-breasted Cormorant	13
White-browed Robin-Chat	70	White-browed Robin-Chat	87
White-browed Scrub-Robin	43	White-browed Scrub-Robin	70
White-crested Helmet-Shrike	3	White-crested Helmet-Shrike	1
White-faced Duck	15	White-faced Duck	16
White-fronted Bee-eater	20	White-fronted Bee-eater	74
		White-necked Raven	1
White-rumped Swift	22	White-rumped Swift	32
White-throated Robin-Chat	33	White-throated Robin-Chat	47
White-throated Swallow	21	White-throated Swallow	24
White-winged Widowbird	7	White-winged Widowbird	19

Willow Warbler	17	Willow Warbler	29
Wing-snapping Cisticola	1		
Wire-tailed Swallow	29	Wire-tailed Swallow	53
Wood Sandpiper	7	Wood Sandpiper	2
Woodland Kingfisher	18	Woodland Kingfisher	17
Yellow Bishop	1		
		Yellow Wagtail	1
Yellow-billed Duck	15	Yellow-billed Duck	4
Yellow-billed Egret	2	Yellow-billed Egret	1
Yellow-billed Kite	11	Yellow-billed Kite	3
Yellow-billed Stork	1		
Yellow-breasted Apalis	34	Yellow-breasted Apalis	66
Yellow-crowned Bishop	1		
Yellow-fronted Canary	78	Yellow-fronted Canary	97
Yellow-fronted Tinkerbird	58	Yellow-fronted Tinkerbird	71
Yellow-rumped Tinkerbird	19	Yellow-rumped Tinkerbird	36
		Yellow-streaked Greenbul	1
Yellow-throated Longclaw	34	Yellow-throated Longclaw	54
Yellow-throated Petronia	4	Yellow-throated Petronia	3
Zitting Cisticola	17	Zitting Cisticola	20