



Bird Population Monitoring Report November 2010 Count

Project title: Bird Population Monitoring in Botswana: Involving citizens in biodiversity monitoring



Lilac-breasted Roller

Implemented by: BirdLife Botswana in Partnership with the Department of Wildlife and National Parks (DWNP)



Sponsored by:



Introduction

Birds have many useful characteristics that make them good potential indicators, including their public appeal, ease of identification and survey, their relative abundance, moderate diversity, and our level of knowledge about their ecology, numbers and ranges (Sheehan, Gregory, Eaton, Bubb & Chenery, 2010). At the same time, birds use the environment in a fashion and at a spatial scale quite unlike most other taxa (Sheehan *et al*, 2010). They are highly mobile and many species are migratory thus integrating environmental changes over huge areas.

In November 2010 volunteers throughout Botswana counted birds near their area through a Bird Population Monitoring Programme (BPM) run by BirdLife Botswana in conjunction with the Department of Wildlife and National Parks (DWNP). The programme is part of the global effort to monitor birds around the world. The objectives of the project are:

1. To develop a Wild Bird Index for Botswana showing bird population trends over time and to use these trends to set conservation priorities, report on biodiversity changes/state of the environment in Botswana (and to contribute to African/global efforts – Convention on Biological Diversity (CBD), Department of Environmental Affairs Environment Information System (DEA EIS)
2. To show that changes in the overall condition of ecosystems can be used by decision-makers to influence politicians to find suitable biodiversity management solutions
3. To increase levels of community participation through building the appropriate capacity in bird identification and awareness

The programme runs twice annually in February and November and offers exciting birding opportunities in both highly populated and remote areas. The method for BPM in Botswana is a point count technique and participants counted birds on a 2 km route. The results from the November 2010 count were encouraging with a total of 122 transects undertaken by 152 participants. A total of 14056 birds and 298 species were counted by participants. BirdLife Botswana was greatly encouraged by the enthusiasm of volunteers and the coverage of areas in Botswana. Especially noteworthy was the participation by the DWNP staff.

Study area

Botswana lies between approximately 20° to 29.15°E and 18° to 27°S. The country covers approximately 582,000 square kilometres. Mean altitude above sea level is approximately 1000 m. There are three main land tenure categories in Botswana and these are tribal or communal land which is 70%, state land which is 25% and freehold which is 5%. A large part of the country at 17% (104,460 km²), is national parks, game, forest and private reserves. The population is concentrated in the eastern part of the country where arable farming is possible on account of better and more favourable climatic and soil conditions. Much of the country is flat, with gentle undulations and occasional rocky outcrops.

Botswana's climate is semi-arid. Rainfall is low, unreliable, unevenly distributed and highly variable from year to year. Drought is a recurrent phenomenon. Mean rainfall ranges from 650 mm in the extreme north-east to 250 mm in the extreme south-west. A secondary maximum mean of 550 mm occurs in the higher areas in the south-east and a secondary minimum of 350 mm occurs on the lowest areas of the Limpopo valley.

About two thirds of the country is covered by sandy soils which are infertile. These are the red and grey desert soils on the Kalahari sands. Various types of vegetation covering much of the

country include grassland, natural woodland, forestland, savannah types, bush land, aquatic (wetlands) and man-made plantations. The vegetation of Botswana changes from the south-west to the north-east from (low) shrub savanna to tree savanna and woodland due to the increasing precipitation towards the north-east. Botswana has a total of 12 biomes and there are just over 800 quarter-degree squares (QDS) covering the whole country. In order to sample 10% of the squares, every eighth QDS was chosen as the location for each sampling unit on each biome. This resulted in a total of 105 grids chosen to be sampled throughout Botswana for Bird Population Monitoring Programme by volunteers.

Methods

Point count is the methodology used for Bird Population Monitoring Programme in Botswana. The participants counted birds from a 2 km transect stopping every 200 m for five minutes to record birds that they see or hear. Participants were allocated transects by the project coordinator and local representatives in different branches using the 105 designated grid squares chosen throughout Botswana. Transect allocations were done randomly where there was no designated grid square present near the participants to allow flexibility within the programme. Participants covered the transects by foot or vehicle throughout November during early mornings.

Results

The results obtained from all participants are summarised in table one below.

Table 1: Summary of results for November 2010 count

Location/BirdLife branch	No. of participants	No. of transects	No. of transects in the chosen grid	No. of transects not in chosen grid	No. of chosen grids not covered per location	No. of birds	No. of species
Gaborone	45	35	12	23	0	3553	174
Jwaneng	5	3	2	1	1	116	26
Gantsi	5	2	0	2	3	122	41
Francistown	24	18	0	18	4	1926	122
Maun	18	13	8	5	0	1287	100
Kasane	12	13	0	13	6	2512	164
Serowe/Palapye	3	3	1	2	0	384	50
Southern (GGR, Mannyelanong)	11	3	0	3	0	231	39
Ngamiland (Maun)	4	7	7	0	10	1222	52
Central (Serowe)	4	9	9	0	4	968	61
Kgalagadi (Gantsi, CKGR)	7	6	6	0	12	614	45
Kgalagadi (Tsabong)	7	6	6	0	10	839	47
Kgalagadi (Mabutsane)	7	4	4	0	0	282	35
Grand total	152	122	55	67	50	14056	289

Discussion

The BPM programme was aimed to cover the whole country, and BirdLife Botswana successfully managed to facilitate participation of volunteers for the November 2010 count from Gaborone, Kasane, Maun, Francistown, Serowe and the Department of Wildlife and National Park offices in different district as shown in table 1 above. The results from the count show a total number of 152 volunteers who participated in a total of 122 transects undertaken altogether. Of the 105 chosen grids around Botswana 55 transects were undertaken in those grids and 67 transects undertaken outside the selected grids. The total number of birds seen in all the transects was 14056 with a total number of 289 species recorded by participants. Refer to tables appended in this report for more details (Appendix 1).

The average number of birds recorded per transect was 127 and the average number of species recorded was 23 per transect. The highest total number of birds recorded was 776 birds at Savuti by Gavin and Marjorie Blair from Kasane and the highest total number of species recorded was 54 at Mogonye by Chris Brewster from Gaborone.

The species with the highest number counted for all transects were Cape-turtle Dove 1171, Red-billed Quelea 651, Scaly-feathered Finch 568, White-browed Sparrow-Weaver 524, Wattled Starling 496, Laughing Dove 470 and Barn Swallow 450. The most common species recorded by participants was Cape-turtle Dove 92, Laughing Dove 66, Cape Glossy Starling 58, Black-chested Prinia 54, White-browed Sparrow-Weaver 54 and Fork-tailed Drongo 52. Interestingly there were 10 records of the Bateleur in Kgalagadi and Chobe area, the raptor species that is declining. There were 17 recorded sightings of White-backed Vultures-the globally threatened species, at Kgalagadi, Chobe and Central areas, two records of the globally threatened Lappet-faced Vulture at Kgalagadi, one White-headed Vulture record at Kasane and five Cape Vultures at Mannyelanong and Sefhare. The Common Myna was also spotted at Mahalapye, Lobatse, Mannyelanong and Molepolole from Gaborone counts.

Participants enjoyed the exercise and realised it was not as daunting as they had imagined. It took 2 hours to complete the transect by foot and one hour by vehicle. Most of the participants called it an enjoyable little exercise and have indicated an interest to do more transects for the 2011 February count. Gavin and Marjorie Blair from Kasane were the most outstanding participants with five transects completed. It will be good if other participants were as enthusiastic as this couple. Despite the energy shown by all the participants and the valuable data submitted from the November 2010 count it is obviously too early to pick the trends and to use it to reflect the status of common birds in Botswana. However the information obtained is valuable.

Challenges/Acknowledgement of Bias

BirdLife Botswana acknowledges that birds recorded in all the transects do not truly represent the birds that were present during the individual transect visits. This is because the main challenge has been that most birds needed to be identified through calls, whereas the majority of the BPM participants were not well versed in identifying all the calls. However it is believed that as participants become more experienced their bird call identification skills will improve hence the quality of the data. The other challenge for the scheme is there is a bias of counters near the cities and towns, so this means that remote areas are not as well covered.

Recommendations

It is recommended that a bird call identification course be offered to the participants after the February 2011 count. An evaluation workshop will be part of this course. As part of the

recommendations participants are encouraged to attend BirdLife Botswana's monthly bird walks organised at each branch. To attend those walks they must contact the branch manager in their area for more information about when and where the walk will be. Lastly we appeal to the participants to help grow the scheme by inviting potential volunteers in and around their areas to take part or to join them when they count their transects.

Acknowledgements

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Reference

Sheehan, D. K., Gregory, R. D., Eaton, M. A., Bubb, P. J., & Chenery, A. M. (2010). *The Wild Bird Index-Guidance for National and Regional Use*. UNEP-WCMC, Cambridge, UK

Appendix 1: Summary table showing species seen in all counts and their total number

Species national common name	Central DWNP Serowe	Francistown	Gaborone	Gantsi	Jwaneng	Kasane	Kgalagadi DWNP Ghanzi	Kgalagadi DWNP Mabutsane	Kgalagadi DWNP Tsabong	Maun	Ngamil and DWNP Maun	Serowe/Palalaye	Southern DWNP Gaborone	Grand Total
Acacia Pied Barbet		1	36	1		3		1	1			4		47
African (Eurasian) Hoopoe	1	2	16			8			23	12			1	63
African (Richard's) Pipit			1	5										6
African Barred Owlet						1								1
African Cuckoo		1	1											2
African Darter			1			1								2
African Fish-Eagle		1	1			3				6				11
African Golden Oriole						1								1
African Grey Hornbill		14	8			13				38				73
African Hawk-Eagle			2											2
African Jacana										2				2
African Mourning Dove			2							4				6
African Openbill						3				67				70
African Palm-Swift		53		4		20				6				83
African Paradise-Flycatcher		4	4							6				14
African Pied Wagtail						4								4
African Red-eyed Bulbul	6	9	90	4		2	28	17	29		46	8	11	250
Alpine Swift	14													14
Amethyst Sunbird						3								3
Ant-eating Chat		4	11	3		1	1					3		23
Arnot's Chat		1												1
Arrow-marked Babbler		24	88			18						3		133
Ashy Flycatcher			2			1								3
Ashy Tit				2	3	1								6
Barred Wren-Warbler (Southern Barred Warbler)			11	1										12
Bar-throated Apalis			21											21
Bateleur				1		19			1	2				23

Bushveld Pipit							1							1
Cape (Pale) White-eye			1											1
Cape Glossy Starling	72	46	68	2	2	30	9	13	27	6	28	2	8	313
Cape Sparrow	1		7				4							12
Cape Turtle-Dove	55	300	162	10	8	269	27	26	125	88	56	35	10	1171
Cape Vulture	37		3										16	56
Cape Wagtail			1											1
Capped Wheatear			1									1		2
Cardinal Woodpecker		4	2							8		1		15
Cattle Egret		8	49	1		23					6	8		95
Chat Flycatcher		2	1											3
Chestnut-vented Tit-Babbler (Rufous-vented Warbler)			73	2				6	26			14	5	126
Chinspot Batis		5	27						1	3		11		47
Chirping Cisticola										41				41
Collared Palm-Thrush						2								2
Collared Pratincole										13				13
Comb Duck	4					6								10
Common / Greater Scimitarbill			9	1									2	12
Common Cuckoo						2								2
Common Fiscal / Fiscal Shrike			9										1	10
Common Greenshank						18								18
Common Moorhen				6										6
Common Myna			5										3	8
Common Ostrich		1	3		2				1			3	8	18
Common Sandpiper						18								18
Common Swift							31							31
Common Waxbill		6							3			3	7	19
Coppery-tailed Coucal										1				1
Crested Barbet		7	40										2	49
Crested Francolin	5	55	64			13	1	5				12	4	159
Crimson-breasted Shrike		13	78	2	1		6	2	25	21	8	9	7	172
Crowned Lapwing	10	4	19			17		9	5	4	6	3	1	78
Dark Chanting Goshawk						2								2

Dark-capped Bulbul					26									26
Desert Cisticola		2	9		9									20
Dickinson's Kestrel									1					1
Didric Cuckoo	1		47	2	1	1	2	2	1				1	58
Double-banded Courser							1							1
Double-banded Sandgrouse		2												2
Eastern Clapper Lark		2		1	13									16
Egyptian Goose		1			41									42
Emerald-spotted Wood-Dove		21	10		5				5					41
Eurasian Hobby					2									2
European / Barn Swallow	86		105	7	4	104		9		10	91	30	4	450
European Bee-eater		2	21	1		80				16				120
Fairy Flycatcher									1					1
Familiar Chat	4	6	2						3					15
Fawn-coloured Lark			1			1				1	3			6
Feral Pigeon			2											2
Fiscal Flycatcher			1											1
Flappet Lark		1				1				1				3
Fork-tailed Drongo	7	47	19		2	21	7	10	14	19	8	3	1	158
Gabar Goshawk		2	1			4	1			1				9
Giant Kingfisher						1								1
Golden Weaver						15								15
Golden-breasted Bunting		1	21											22
Golden-tailed Woodpecker			5			1								6
Great Egret						1				1				2
Great Sparrow			3											3
Great Spotted Cuckoo		1	2											3
Greater Blue-eared Starling						3				1				4
Greater Flamingo										1				1
Greater Honeyguide			2						1	1				4
Green Wood-Hoopoe		2	10			4			1	1		1		19
Green-backed Heron						1								1
Green-capped Eremomela			5											5
Grey Go-away-bird	24	24	73			8				55	25	9	6	224

Grey Heron			2	1		1				2				6
Grey Tit-Flycatcher							1							1
Grey-backed Bleating Warbler		2	36			35				31				104
Grey-backed Sparrowlark		4												4
Grey-headed (Brown-necked) Parrot		2												2
Grey-headed Bush-Shrike		4	2			2								8
Grey-headed Kingfisher										2				2
Groundscraper Thrush		1	6											7
Hadeda Ibis			21							1				22
Hamerkop			1			3				3				7
Helmeted Guineafowl		29	24	1	6	5	2	2	1	83	75	4	16	248
House Sparrow	13	14	89		5					10	8		6	145
Icterine Warbler			1											1
Jacobin Cuckoo			20			5				1				26
Jameson's Firefinch			3			2								5
Kalahari Scrub-Robin		6	44	5	5	5	12	17	41	4	22	16	1	178
Klaas's Cuckoo			9											9
Kori Bustard		1			1	1			1			2		6
Kurrichane Thrush			8											8
Lanner Falcon						1								1
Lappet-faced Vulture	1					3								4
Lark-like Bunting		2												2
Laughing Dove	100	20	128	8	3	13	16	2	11	8	117		44	470
Lesser Grey Shrike		2	21	2		24	15			7				71
Lesser Honeyguide			1				1							2
Lesser Kestrel			1			22		1	1					25
Lesser Masked-Weaver		28	3		7			1			2			41
Lesser Striped Swallow			7											7
Levaillant's Cuckoo/Striped Cuckoo			4			4		1					2	11
Lilac-breasted Roller	12	22	5		1	55		2		30	1			128
Little Bee-eater	3	2	10	1		16				5	30	2		69
Little Egret			56							5				61

Little Grebe						4								4
Little Sparrowhawk		1	1											2
Little Stint						2								2
Long-billed Crombec		13	23		2	3			1	6			2	50
Long-tailed Paradise-Whydah	2	1	3											6
Luapula Cisticola						1								1
Magpie / Long-tailed Shrike		3				11				18		9		41
Malachite Kingfisher						1								1
Marabou Stork						56				3				59
Marico Flycatcher	7	5	36	3			15	30		3	15	9		123
Marico Sunbird		2	25	3		4	2	6	3	12	66	1		124
Martial Eagle							1							1
Melba Finch / Green-winged Pytilia		2	5							6				13
Melodius Lark												3		3
Meves's Starling										7	2			9
Meyer's Parrot		3				2				4	1			10
Namaqua Dove	12	50	4	1	5	4	3		4	3	21		2	109
Namaqua Sandgrouse	1													1
Natal Spurfowl (Francolin)	1	9	41											51
Neddicky		11												11
Northern Black Korhaan (White-quilled Bustard)		7	5		14	12	32	4	11		11	1		97
Northern Grey-headed Sparrow			8							1				9
Orange-breasted Bush-Shrike			3			3				1				7
Orange-breasted Waxbill		2												2
Pale Flycatcher		3												3
Pearl-spotted Owlet			1			2								3
Pied Crow	1	21	56		5	7						5	2	97
Pied Kingfisher						4				5				9
Pink-backed Pelican						27								27
Pin-tailed Whydah	2									2	2			6
Purple (Rufous-crowned) Roller		8	2			6				1				17
Rattling Cisticola		24	79			38						3		144

Red-backed Shrike	12	6	39	1		10	18	1		1	8			96
Red-billed Buffalo-Weaver	8	58	5			12				4				87
Red-billed Firefinch		10	6											16
Red-billed Hornbill	1	57	4			57				47	8			174
Red-billed Oxpecker	12	4	20			4								40
Red-billed Quelea	175	169	32			15	85		33		142			651
Red-billed Spurfowl (Francolin)		39				64	1		6	73	13			196
Red-billed Teal		36				6				1				43
Red-breasted Swallow			6			5								11
Red-chested Cuckoo	1	33	16											50
Red-crested Korhaan (Bustard)	1	19	15		1	22	13	9	4			11		95
Red-eyed Dove	4	17	10			20	4			10				65
Red-faced Mousebird	13	15	105			6	5		8	6	19		1	178
Red-headed Finch			8											8
Red-headed Weaver	4	12								1				17
Red-necked Falcon											1			1
Red-winged Starling			1										4	5
Reed Cormorant						1								1
Retz's Helmet-Shrike		10												10
Rock Bunting		3	1											4
Rock Dove / Rock Pigeon		1	3											4
Rock Kestrel	2													2
Ruff						2								2
Rufous-naped Lark	5	2	21		9	5								42
Sabota Lark	2	4	20				16	9	79		14	7		151
Saddle-billed Stork						8								8
Sand Martin						2				6				8
Scaly-feathered Finch	44	40	86	3		13	152	49	55	7	69	38	12	568
Scarlet-chested Sunbird						2								2
Schalow's Turaco						2								2
Secretarybird					1	2								3
Senegal Coucal						3								3
Shaft-tailed Whydah		12	2			1	2							17
Shikra			1			1								2

Three-streaked Tchagra			9			1					6			16
Tinkling Cisticola (<i>C. rufilatus</i>)			1											1
Tropical Boubou	5					35								40
Trumpeter Hornbill						1								1
Violet-backed / Plum-coloured Starling		3	11					1						15
Violet-eared Waxbill (Common Grenadier)				1		1	2	1			3			8
Wahlberg's Eagle			3											3
Wattled Starling			6	15		475								496
Western Marsh-Harrier										1				1
White-backed Mousebird			12											12
White-backed Vulture	1	18	3	1		32				2	7			64
White-bellied (White-breasted) Sunbird	2	23	87			11	6						1	130
White-breasted Cormorant			1											1
White-browed (Red-backed) Scrub-Robin		4	69			2			1					76
White-browed Robin-Chat			2			10								12
White-browed Sparrow-Weaver	58	20	217		12	45	28		11		116	8	9	524
White-crested Helmet-Shrike		5								19				24
White-headed Vulture						1								1
White-rumped Swift			2											2
White-throated Robin-Chat		1	5					1						7
White-throated Swallow		8												8
Willow Warbler			12			8					52			72
Wood Sandpiper		9				5				1				15
Woodland Kingfisher			1			13				3			1	18
Woolly-necked Stork						2								2
Yellow Canary		3	13	1		2		6		7	7	13		52
Yellow-bellied Greenbul						2								2
Yellow-billed Kite	2	7	11	2	1	40				6	5	2		76
Yellow-billed Oxpecker			2			3								5
Yellow-billed Stork						2								2

Yellow-fronted Canary	32	5	16				2			2				57
Yellow-fronted Tinkerbird			1			1								2
Yellow-throated Petronia		1												1
Zitting Cisticola			3							3				6
Grand Total - number of birds counted by BLB district	968	1926	3553	122	116	2512	614	282	839	1287	1222	384	231	14056
Number of species recorded by BLB district	61	122	174	41	26	164	45	35	47	100	52	50	39	289
Number of transects by BLB district	9	15	33	2	2	14	6	3	6	8	7	3	3	111

Mean no. of species recorded per transect **23**

Average no. of birds recorded per transect **127**

Top ten transects ordered by number of birds counted	Location	No. birds	Top ten transects ordered by number of species counted	Location	No. species
Savuti Main Marsh Road/open grassland, marsh and acacia woodland	Kasane	776	South East of Mogonye	Gaborone	54
Planet Baobab to Gweta	Francistown	478	2525 B1 (Mark Bing)	Gaborone	49
Xaxa (192C4)	Ngamiland DWNP Maun	368	Harvey's pan/Open Grassland + Scrub Mopane	Kasane	40
Sewage Ponds(Kasane Forest Reserve)	Kasane	297	Sewage Ponds(Kasane Forest Reserve)	Kasane	39
Vumbura Plains- NG 22	Maun	288	Xaxa (192C4)	Ngamiland DWNP Maun	39
2525 B1 (Mark Bing)	Gaborone	276	Khama Rhino Sanctuary-Mogakolodi Phetogo	Serowe/Palapye	38
Otse West	Gaborone	250	Otse West	Gaborone	38
Bridge to Eastern Road/Scrub Woodland	Kasane	249	Khwai	Maun	36
Serowe	Central DWNP Serowe	246	Mmankgodi (Thickbush Terminalia)	Gaborone	35
			Bridge to Eastern Road/Scrub Woodland	Kasane	34
			Mabutsane SO2	Kgalagadi DWNP Mabutsane	34
South East of Mogonye	Gaborone	241	South West of Magotlhwane	Gaborone	34

Top ten commonest species (by number counted)	Total no. counted	Top ten most widespread species (by number of transects on which recorded)	Total no. transects on which recorded (out of 145)
Cape Turtle-Dove	1171	Cape Turtle-Dove	92
Red-billed Quelea	651	Laughing Dove	66
Scaly-feathered Finch	568	Cape Glossy Starling	58
White-browed Sparrow-Weaver	524	White-browed Sparrow-Weaver	54
Wattled Starling	496	Fork-tailed Drongo	52
Laughing Dove	470	Blue Waxbill	49
European / Barn Swallow	450	African Red-eyed Bulbul	47
Cape Glossy Starling	313	Southern Yellow-billed Hornbill	46
Black-chested Prinia	292	Grey Go-away-bird	46
African Red-eyed Bulbul	250	Black-chested Prinia	45
