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THE STATUS OF SPARROWS IN LESOTHO, SOUTHERN AFRICA

ABSTRACT

There are three *Passer* species in Lesotho: House Sparrow *P. domesticus*, Cape Sparrow *P. melanurus*, and Grey-headed Sparrow *P. diffusus*. The House Sparrow is an introduced species, recorded first in Lesotho in 1954. Today, all three species are very numerous (as dominants or subdominants) in urban and rural areas in all ecozones in the country. With an increase of altitude the proportion of Cape Sparrows in relation to the other sparrow species increases, while the reverse is true for the Grey-headed Sparrow. The proportion of House Sparrows appears to be only slightly affected by altitude. In some areas, the House Sparrow may displace the Grey-headed Sparrow.

Keywords: House Sparrow *Passer domesticus*, Cape Sparrow *P. melanurus*, Grey-headed Sparrow *P. diffusus*, distribution, abundance, Drakensberg, Lesotho

INTRODUCTION

There are four species of the genus *Passer* in southern Africa, three of which occur in Lesotho: House Sparrow *P. domesticus*, Cape Sparrow *P. melanurus*, and Grey-headed Sparrow *P. diffusus* (Hockey et al. 2005). The two latter species are indigenous, but the House Sparrow has been introduced at the end of 19th century, and subsequently expanded its range from Cape Town, East London and Maputo to almost the entire area of southern Africa (Hockey et al. 2005). The first record of this species in Lesotho was made at Roma in 1954 (Maclean 1955). At the early 1960s it was also recorded in Maseru and in the 1970s was regarded as a common species there (Kopij 2000). Although the House Sparrow is known to occur today all over Lesotho, it is unknown how successful it is in different ecozones and habitats and how it affects the two indigenous sparrow species, an issue that is dealt with in the present study.

STUDY AREA

Lesotho is an enclave within the Republic of South Africa. Three-quarters of the country, known as the highlands or Maloti, lay above 2,200 m a. s. l. Areas below 1,700 m are regarded as lowlands while foothills are located between 1,700 and 2,200 m. The

lowlands (total area 6,051 km²) form a strip of land at the northeast-southwest border of Lesotho and extend eastward to the Cave Sandstone Foothills. The foothills (total area 2,964 km²) form a narrow band bordering the highlands to the east and the lowlands to the west, and constitute, therefore, an intermediate region between the highlands and the lowlands. The Senque Valley Zone lies below 1,800 m and occupies 3,398 km² (Ambrose et al. 2000). The study area of the present investigation encompasses the Senque Valley and the lowlands. In 2000, the population of Lesotho was estimated at about 2 million people. With more than three-quarters of the total number of Lesotho inhabitants, the Lowlands are heavily populated, while the population is sparse in the highlands.

In the lowlands the natural vegetation is Highveld Grassland (Acocks 1988). The Maloti/Drakensberg region, called also the Eastern Mountains, is an endemic and so called 'hot-spot' region, with an area of about 40,000 km², most of which is located within Lesotho. The main vegetation type here is the Afromontane Grassland, with Highveld Grassland in the lowest (below 1,800 m) and Alpine Grassland in the highest altitudes (over 2,500 m). The 'hot-spot' covers entirely the Afromontane and Afroalpine Grasslands, and borders the Highveld Grassland.

In each ecozone, main habitats with various degrees of modification were distinguished: urban, rural, farmland, mosaic of habitats, natural habitats and river valleys. Four towns (Maseru, Thaba Tseka, Mokhotlong, Qacha's Nek) and three larger settlements (Roma, Morija, Semonkong) were selected as urban habitats, while 13 villages were randomly selected as rural habitats. Three towns were located in the highlands and one (Maseru) in the lowlands. Of the 13 villages, four were located in the lowlands, four in the highlands, two in foothills and three in the Senque/Orange Valley.

STUDY METHODS

The three sparrow species were studied from 1996 to 2002. A line transect method following Bibby et al. (1993) was used to assess species diversity and relative abundance of all resident (breeding) birds. Transects were fixed along roads in rural or urbanized areas. Counts were conducted at different times of day and lasted 0.5 to 4 hours, but mostly about 1 hour. For Semonkong, Thaba Tseka, Mokhotlong and Morija, respectively, three to seven counts were conducted, while in the rural areas only single counts were carried out in each settlement.

The proportion of breeding pairs of a particular sparrow species in relation to the total number of breeding pairs of all sparrow species was calculated. The dominance of sparrows in the breeding bird communities was calculated as the percentage of the number of breeding pairs of a particular sparrow species in relation to the total number of breeding pairs of all bird species.

RESULTS and DISCUSSION

In general, with an increase of altitude the proportion of Cape Sparrows in relation to the two other sparrow species increased, while the reverse was true for the Grey-headed Sparrow. The proportion of the House Sparrow appears to be only slightly affected by altitude. In the lowlands, the proportion of Grey-headed Sparrows equaled almost the proportion of the other sparrows. However, in the highlands the Cape Sparrow accounted for two-thirds of all sparrows. The proportion of the House Sparrow was almost identical to that of the Cape Sparrow in the lowlands, and to the Grey-headed Sparrow in the highlands (Fig. 1).

On average for all habitats, only the Cape Sparrow was in the group of dominant species, and, furthermore, only in the highlands. In the lowlands, the Grey-headed Sparrow was a subdominant species. However, sparrows were often dominants or subdominants in urban and rural habitats in all ecozones. The House Sparrow dominated strongly even in highland urban and rural areas. In the future, it may displace the indigenous Grey-headed Sparrow in such habitats.

In Maseru, the only larger city in Lesotho, all three sparrow species appear to be similarly numerous and dominant. The House Sparrow is especially successful in the so called township, where it is not only the commonest sparrow species, but, by far, the most abundant bird species at all (Kopij 2000). Also in some rural areas in the lowlands the House Sparrow strongly dominates.

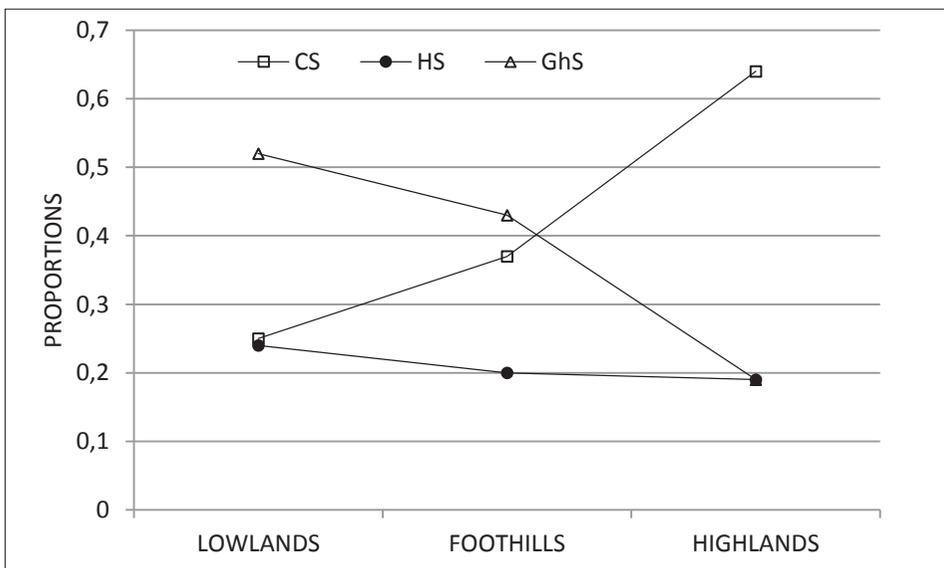


Fig. 1. Proportions of the three species Cape Sparrow (CS), House Sparrow (HS), and Grey-headed Sparrow (GhS (in relation to all other birds) in the lowlands (N=975 pairs of all sparrow species), foothills (N=292) and highlands (N=889) in Lesotho.

Hockey et al. (1997) do not list urban and rural areas as habitats of the Grey-headed Sparrow. However, it is a common and sometimes even dominant species in such habitats in Lesotho, especially in well-timbered places.

Of the three sparrow species occurring in Lesotho, the Grey-headed Sparrow is most closely associated with trees as nesting sites. The Cape Sparrow may build nests in trees and shrubs as well as in buildings and other man-made structures, whereas House Sparrow nests were found only in buildings and other man-made constructions (Kopij 2013). The Grey-headed Sparrow, therefore, is predisposed to inhabit natural habitats while the House Sparrow is predisposed to occupy highly modified, treeless built-up areas. These tendencies were visible in all ecozones in Lesotho (Tab. 1).

Table 1. Proportions and dominance of the three species Cape Sparrow (CS), House Sparrow (HS), and Grey-headed Sparrow (GhS) in Lesotho.

N	Locality and habitat	χ^2 -test	Proportions			Dominance			Number of pairs	
			CS	HS	GhS	CS	HS	GhS	Genus <i>Passer</i>	All bird species
LOWLANDS										
1	Maseru, urban	5,93	0,41	0,35	0,25	2,80	2,41	1,70	281	4,067
2	Maseru, urban	1,85	0,38	0,30	0,32	4,23	3,31	3,56	181	1,631
3	Roma, NUL campus	21,97	0,06	0,04	0,90	0,79	0,59	12,87	72	505
4	Roma, NUL campus	15,26	0,12	0,02	0,86	1,41	0,24	10,35	51	425
5	Moriija, rural	6,33	0,00	0,00	1,00	0,00	0,00	1,36	4	295
6	Roma, rural	15,10	0,05	0,26	0,68	1,09	5,45	14,18	57	275
7	Rural	3,73	0,14	0,32	0,55	2,73	6,36	10,91	22	110
8	Roma, farmland	21,90	0,14	0,21	0,65	1,06	1,59	4,84	170	2,271
9	Farmlands	8,62	0,10	0,29	0,62	0,60	1,79	3,87	42	672
10	Koro Koro, mosaic	14,00	0,00	0,00	1,00	0,00	0,00	1,61	27	1,679
11	River valleys	14,03	0,18	0,09	0,74	1,41	0,71	5,89	68	849
	Total	28,26	0,25	0,24	0,52	1,87	1,82	3,94	975	12,779
FOOTHILLS										
12	Rural	4,56	0,14	0,21	0,64	1,34	2,01	6,04	14	149
13	Farmlands	8,62	0,10	0,29	0,62	0,64	1,93	4,17	42	623
14	Nykosuba, mosaic	14,78	0,40	0,14	0,47	1,36	0,48	1,60	43	1,248
15	Masite Plateau	5,33	0,00	1,00	0,00	0,00	0,13	0,00	1	752
16	Qeme Plateau	4,43	0,25	0,48	0,27	1,38	2,63	1,50	44	798
17	Leribe Plateau	41,07	0,40	0,00	0,60	0,63	0,00	0,94	5	320
18	Berea Plateau	20,15	0,60	0,06	0,34	5,09	0,48	2,88	88	1,042
19	Cliffs S of Roma	3,79	0,00	0,20	0,80	0,00	0,22	0,88	5	452
20	Cliffs N of Roma	1,84	0,19	0,38	0,43	0,96	1,91	2,15	21	418
21	River valleys	6,89	0,52	0,00	0,48	0,68	0,00	0,64	29	2,200
	Total	23,20	0,37	0,20	0,43	1,35	0,71	1,59	292	8,002

HIGHLANDS										
22	Qacha's Nek, urban	9,67	0,00	0,00	1,00	0,00	0,00	11,76	14	119
23	Semonkong, urban	12,85	0,52	0,38	0,10	11,74	8,48	2,17	103	460
24	Thaba Tseka, urban	82,68	0,68	0,16	0,16	23,29	5,48	5,33	224	657
25	Mokhotlong, urban	10,31	0,48	0,35	0,17	18,88	13,57	6,49	132	339
26	Rural	5,76	0,48	0,23	0,29	13,87	6,57	8,39	79	274
27	Semonkong, farmland	111,87	0,86	0,08	0,05	3,66	0,35	0,22	132	3,115
28	Montsunyane, mosaic	68,32	0,92	0,05	0,03	5,58	0,28	0,19	65	1,075
29	Sehlabathebe, grassland	4,50	1,00	0,00	0,00	0,27	0,00	0,00	3	1,120
30	Sehlabathebe, farmland	26,32	0,92	0,00	0,08	7,54	0,00	0,66	25	305
31	Alti-mountain grass-land	1,83	1,00	0,00	0,00	0,24	0,00	0,00	1	417
32	River valleys	14,10	0,50	0,00	0,50	1,96	0,00	1,99	111	2,810
	Total	244,09	0,64	0,17	0,19	5,28	1,43	1,60	889	10,691
	Grand total	106,25	0,42	0,21	0,37	2,90	1,40	2,55	4,312	62,944

In Bloemfontein, the House Sparrow was recorded for the first time in 1959 (Markus 1960). In 1997, it was an abundant breeding resident (1,150 pairs, 4.4%) concentrating in the oldest densely built-up and treeless parts of the city (Kopij 2001). However, in the same time the Cape Sparrow was by far much more abundant (7,483 pairs, 28.5%) in Bloemfontein (Kopij 2001).

In conclusion, all three sparrow species are very numerous breeding species in urban and rural areas in all ecozones in Lesotho, and, in general, there seems to be little interspecific competition. However, in some areas the House Sparrow may displace the Grey-headed Sparrow.

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