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Paper Editor: Anthony Lowney

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Recommended citation format:

Oschadleus HD, Schultz B, Schultz S 2017. Cape Sparrows roosting in Cape Weaver nests in Cape Town. Biodiversity Observations, Vol 8.11: 1-7

URL: <http://bo.adu.org.za/content.php?id=306>

Published online: 3 March 2017

Edits: Table 1, added grey colour, 8 April 2017

PHOWN (PHOTOS of Weaver Nests) paper

CAPE SPARROWS ROOSTING IN CAPE WEAVER NESTS IN CAPE TOWN

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Abstract

Night checks were conducted at seven Cape Weaver *Ploceus capensis* colonies in Pinelands to determine if the rate at which other species used the nests for roosting increased as it became colder. Cape Sparrows *Passer melanurus* roosted in nests, but the number roosting did not increase as night temperatures dropped, probably as temperatures were cool but not extreme. Cape Weavers were found to roost in nests, and their numbers increased as the breeding season approached. There were more male than female weavers, suggesting that males secured their territories ahead of breeding. Usually sparrows and weavers roosted singularly per nest, but sometimes Cape Sparrow pairs were seen. This study shows that Cape Sparrows may roost in Cape Weaver nests more frequently than previously thought. Additional colonies were monitored in Rondebosch, where there was one record of two Cape Sparrows roosting in two Cape Weaver nests. No Cape Sparrows were found roosting in Southern Masked Weaver *P. velatus* nests in Rondebosch, although not all these nests were checked. Cape and Southern Masked Weavers were not found to roost in the Rondebosch nests until June. Weavers and sparrows roosted with the head facing the nest entrance, with one weaver facing the other way.

Introduction

Weaver nests are known to provide suitable breeding and roosting sites for a variety of birds (del Hoyo et al. 2010). This could be to reduce the energetic costs of nest building (Mainwaring & Hartley 2013). Weaver nests could also provide thermal benefits (McKechnie & Lovegrove 2003). Thus, we thus hypothesised that the number of birds roosting in weaver colonies may increase as the weather becomes colder.



Figure 1. Colony Crescent G-Plane, Pinelands (PHOWN 21987).

Weavers are known to roost in small to large flocks in trees or reeds (e.g. Oschadleus 1995 for Southern Masked Weaver, Cape Weaver and Southern Red Bishop *Euplectes orix*; see also Oschadleus 2005). Thus, we did not expect to see weavers roosting in their nests in winter. Roosting in birds is poorly known, especially in African birds (Skutch 1989). In addition to investigating the thermal

hypothesis, this study provides some information on the roosting behaviour of Cape Weavers.

We chose to visit well established colonies in Pinelands and Rondebosch, simply for convenience as these nests were in trees and were visible from public areas (Oschadleus & Werner 2015). Reed nests in water would cause greater disturbance and be more difficult to monitor.

Birds could choose to roost in old breeding or non-breeding nests. Old breeding nests have nest lining added and could thus provide more insulation, but could also possibly harbour more parasites.



Figure 2. Cape Weaver, adult female in an old breeding nest, awake (PHOWN 23402).

Methods

We monitored seven Cape Weaver colonies in Pinelands, Cape Town, on six visits at 3-4 weeks intervals in late summer, through winter, and to the start of breeding (13 March – 31 Aug 2016). The colonies were visited at night between 20h00 and 21h30. The total number of nests in each colony or sub-colony was recorded (Fig. 1). A torch was shone onto each nest and photos taken of nests where birds were seen in the nest (Fig. 2,3,5 6 & 7). Several Pinelands colonies were similar to those in Oschadleus & Werner (2015).



Figure 3. Cape Weaver, adult male, head tucked in (PHOWN 20165).

Some observations were made at weaver colonies along a canal near Keert de Koe Road, Rondebosch, Cape Town. More colonies

were found along the canal with time, and nests were situated lower resulting in more disturbance, so results are not analysed to the same extent as for the Pinelands colonies. All study colonies are listed in Table 1.

Table 1. Summary of PHOWN records used in this study. Colony names used in Oschadleus & Werner (2015) are given in square brackets. To see records online, replace the x with the PHOWN number in http://weavers.adu.org.za/phown_vm.php?vm=x.

[CW] = Cape Weaver colony

[SMW] = Southern Masked Weaver colony

Greyed no's: Cape Sparrow(s) seen in nest in the colony

Colony H5A appeared to be occupied by both weaver species on different dates.

Pinelands [all CW]	PHOWN number
1 Links [Links]	19001, 19082, 19267, 20162, 21985, 23398
2 Crescent Gum [Gum]	19002, 19083, 19268, 20163, 21986, 23399
3 Crescent G-Plane [Plane]	19003, 19084, 19269, 20164, 21987, 23400
4 Rustenberg	19006, 19088, 19273, 20168, 21991, 23404
5 Rust-en-Vrede [Rust]	19004, 19085, 19270, 20165, 21988, 23401
6 Rust-en-Vrede Mid	19086, 19271, 20166, 21989, 23402
7 Rust-en-Vrede Opp	19005, 19087, 19272, 20167, 21990, 23403

Rondebosch	PHOWN number
Mt side (SMW)	20028, 21992
1a - first smw (SMW)	19007, 19089, 19274, 20169, 23405
1b - far east smw (SMW)	19008, 19090, 20170, 21994, 23406
2a – far east cw (CW)	19009, 19091, 19275, 20171, 21995, 23407
H5A (SMW/CW)	20172, 21996, 23408
H5B (CW)	20173, 21997, 23409
H5C pine (CW)	21998

Results

The first three night checks were warmer (18-23°C, March-May) than the last three visits (12-13°C, June-July). There was a small decrease in overall number of nests per colony. Weavers do not maintain their nests during winter, so some old nests broke during bad weather, while others were torn down by weavers. Later there was a slight increase as weavers started building new nests (Fig. 4).

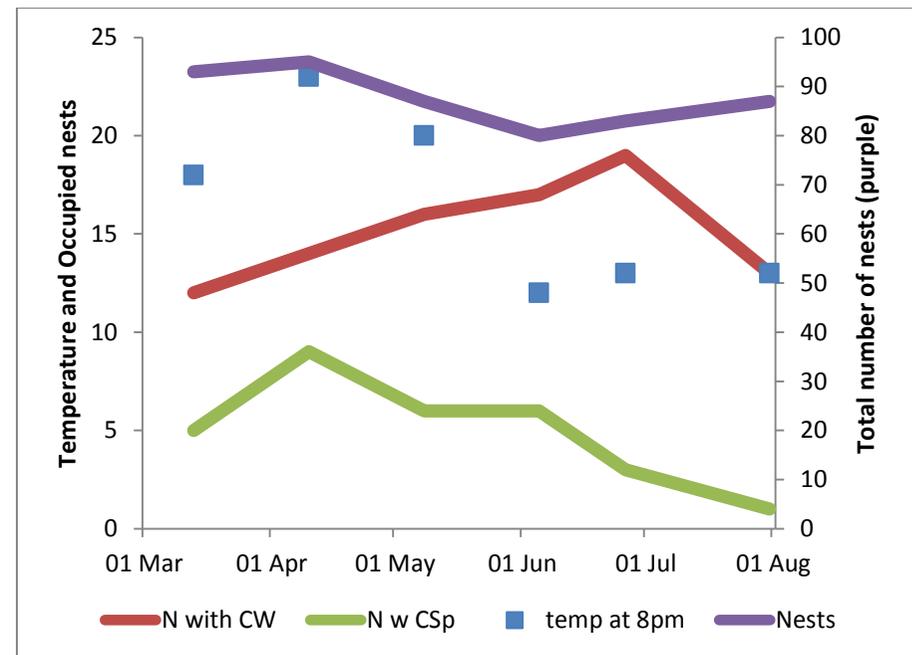


Figure 4. Number of Cape Weavers and Cape Sparrows roosting in Cape Weaver nests in Pinelands, Mar-July 2016. Purple line: total number of nests for all 7 colonies (axis on right) Red line: number of nests with a Cape Weaver roosting in it Green line: number of nests with 1 or 2 Cape Sparrows roosting in it Blue squares: ambient temperature at 20h00.

We were surprised to find some Cape Weavers roosting in their nests during winter (Fig. 2-3). In general, the number of roosting weavers increased with time. The only non-weaver species found roosting in the weaver nests, was the Cape Sparrow. The overall number of Cape Sparrows counted decreased with time, contrary to what we expected.

Roosting behaviour

In Pinelands all birds except one were seen with their heads facing the nest entrance – one weaver had the tail facing the entrance (Fig. 5). The heads were tucked back when asleep (Fig. 3,6,7) or visible when awake (Fig. 2).



Figure 5. Cape Weaver, adult male, tail at entrance (PHOWN 23399).

In Pinelands, both breeding and non-breeding nests were used for roosting. Cape Weavers used around 23% of breeding nests in both the warmer period and cooler period. Cape Sparrows used 60% of breeding nests in the warmer period and 50% in the cooler period. The number of breeding nests per colony was not determined.

In Pinelands, mostly single birds were seen in nests. There were five records of Cape Sparrows seen in pairs in a nest (Fig. 6), the weavers never. Overall 11 female and 14 male Cape Sparrows were seen. Most Cape Weavers were adult males (54 records), while 34 were females or immature males.

Disturbance vs nest height

Weavers sometimes flew out of their nest due to the torch light and/or camera flash. This was noticed in Rust-en-Vrede colony and in the Rondebosch colonies; these nests were slightly lower in height above ground. This became a problem at the Rondebosch colonies, and thus these colonies were observed from a slightly greater distance where not all nest entrances could be seen.

Rondebosch colonies

There were three Southern Masked Weaver colonies, three Cape Weaver colonies, and one site that had either weaver species on different dates (Table 1).

In March two Cape Weaver nests had two Cape Sparrows roosting in them (Table 2). Cape Sparrows were not seen again in any weaver nests here, but not all nests were checked due to disturbance. From June onwards many weavers were found roosting in their nests, especially Southern Masked Weavers, but also Cape Weavers, probably due to the start of breeding.

Table 2. Number of weavers and Cape Sparrows roosting in weaver nests in Rondebosch, Mar-July 2016. Initially three colonies were checked, later more colonies were found.

SMWs = number of Southern Masked Weavers roosting in nests

CWs = number of Cape Weavers roosting in their nests

CSp = number of Cape Sparrows roosting in weaver nests

Date	Colonies	Nests	SMWs	CWs	CSp
13/03/2016	3	12	0	0	2
10/04/2016	3	10	0	0	0
08/05/2016	3	6	0	0	0
05/06/2016	7	23	6	0	0
26/06/2016	7	28+	9	2	0
31/07/2016	7	40+	7	2	0

Discussion

Oschadleus & McCarthy (2015) listed a single known record of Cape Sparrows roosting in a weaver nest, but suspected that this habit was more widespread but unobserved. This study confirms that Cape Sparrows may roost in Cape Weaver nests more frequently than previously thought, and this could give rise to the sparrows occasionally breeding in Cape Weaver nests (Oschadleus & McCarthy 2015).

This study does not support the thermal benefits of birds roosting in weaver nests, at least not in semi-urban Cape Town. The increase in numbers of Cape Weavers most likely reflects birds returning to their colonies in preparation for the breeding season. The decrease in Cape Sparrows roosting in weaver nests over time could be due to displacement by the increasing number of Cape Weavers, and/or due to the sparrows starting to prepare for breeding in their own nests.



Figure 6. Cape Sparrow pair in Cape Weaver nest (PHOWN 19002).

Breeding nests are lined and should retain more warmth but birds did not use breeding nests more often in the cooler period. Cape Sparrows did roost in breeding nests at least half the time, while Cape Weavers used breeding nests less frequently.

Possibly the colder nights (12-13°C, compared to 18-23°C) were not cold enough to be important. Temperatures near 0°C in arid areas may be sufficiently low to cause an increase in birds choosing to roost in weaver nests, e.g. Sociable Weaver nests which are known to have thermal benefits (e.g. White et al. 1975).

Most Cape Weavers were adult males, suggesting that males roost in their colonies to secure their territories in advance of the breeding season. Weavers and sparrows roosted with the head facing the entrance, although a single weaver had the tail facing the entrance.

The latter strategy may be disadvantageous in not detecting nocturnal predators as quickly as birds facing the nest entrance.

The Southern Masked Weaver nests that could be observed in Rondebosch did not have any Cape Sparrows roosting in them. Cape Sparrows prefer Cape Weaver nests for breeding, and this may influence roosting choices (Oschadleus & McCarthy 2015), although it should be expected that Cape Sparrows may roost in the nests of other weavers occasionally.



Figure 7. Cape Sparrow, adult male, head tucked in (PHOWN 19005).

It is also interesting that some Cape Weavers appear to roost in their nests through the year. It is not known if this involves the same individuals. Further study is needed to see to what the factors are in

determining if a weaver roosts in an old nest, or joins a communal weaver roost. However, in the Rondebosch colonies, neither weaver species was observed roosting in nests from March to May.

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Figure 8. Colony Rust-en-Vrede Mid, Pinelands, showing several roosting Cape Weavers (PHOWN 21989).