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## **BRANT'S CLIMBING MICE USING WEAVER NESTS**

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## BRANT'S CLIMBING MICE USING WEAVER NESTS

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*PHOTOS of Weaver Nests (PHOWN) is a Virtual Museum, citizen science project of the Animal Demography Unit, to collect and monitor breeding distributions and colony sizes of weaver birds globally. This is the seventh paper in a series of exciting new results from PHOWN, the previous paper being Oschadleus (2016).*

### Abstract

Brant's climbing mice were found to utilize weaver nests after the weavers had completed breeding, at Zandvlei lake in Cape Town. Mice built their own balls-shaped nests within weaver nests of both Cape and Southern Masked Weavers. In this study the weaver nests were in reeds. Mean nest height for all weaver nests (both species) in the study area was 119.3 cm (range 57-207 cm, n=15) and for weaver nests used by mice mean height was 128.1 cm (57-207 cm, n=8). The main period of climbing mouse occupation of weaver nests was from November to April. In total 9 out of 23 weaver nests at the site contained mice nests, but not all were occupied at the same time, i.e., some mice pairs may have deserted a nest and occupied a new nest. Six nests contained mice during a single visit, indicating that there were a minimum of six pairs utilizing weaver nests. One mouse nest was present in a weaver nest for over six months.

### Introduction

Weavers build unique nests of grass. In most species of weavers the nests are used only for breeding and new nests are built each breeding season. After the breeding season these nests may remain

intact for weeks or months, and these nests may then provide shelter and breeding sites for other species, especially birds, but also potentially mammals or insects (del Hoyo et al. 2010).

Various species of mice, and in particular *Dendromus* climbing mice, are known to sometimes build their own nests within the protection of weaver nests (del Hoyo et al. 2010, Skinner & Smithers 1990). In this note, several instances of Brant's climbing mice *Dendromus mesomelas* using the nests of Cape Weaver *Ploceus capensis* and Southern Masked Weaver *P. velatus* are reported from Zandvlei lake, Cape Town, South Africa. These weaver species breed during the winter rainfall months to early summer in Cape Town, and their abandoned nests are then left unoccupied during the late summer and winter.

A Brant's climbing mouse was first found at Zandvlei on 12 December 2007 when it was unexpectedly disturbed from a monitored Southern Masked Weaver nest. Mice or their nests were seen again occasionally at the same site over the next few years, while monitoring weaver nests. At the end of 2014 I decided to investigate the temporal use of weaver nests by these mice.

Brant's climbing mice prefer rank vegetation, especially tall grass with scrub. They are nocturnal and adept at climbing around in low vegetation. They feed on insects and grass seed (Skinner & Smithers 1990). They make ball-shaped nests of shredded grass with entrances at opposite ends. They build their nests "at lower elevations" than does *D. mystacalis*, which build their nests "in exposed situations high up in rank vegetation" (de Graaf 1981). Little else is recorded about the breeding of Brant's climbing mice. They are preyed on by snakes and owls (de Graaf 1981).

### Methods

The study site consisted of two patches of reeds around wet areas, namely a small pond (36m in diameter) and a 50m long channel of

water ending in a small pond (about 2m in diameter), both being at the end of Promenade Road, Lakeside, and next to the large Zandvlei lake. Cape and Southern Masked Weavers breed annually in these reeds.

The monitoring period extended from November 2014 to May 2015. The study site was visited on 12 November 2014, to note the weaver nests and record their GPS localities. The nests were not marked. The same route was followed on all visits. I looked inside the entrance to each nest to see if there was a mouse nest inside. If so, a thin reed was used to poke the nest a few times. If a mouse emerged, this was recorded, and I moved to the next weaver nest. Sometimes a second mouse started emerging soon after the first. Initially nests were checked in the morning but this was changed to late afternoon visits as the mice are mostly nocturnal. Nests were not opened and breeding was not checked. Visits took place about twice a month at first but changed to monthly to reduce disturbance. There were no visits in February 2015. The last check was on 25 May 2015.

Nest height of the weaver nests above the ground was recorded on 18 January when some weaver nests had disappeared but all nests with mice nests were still intact.

Photos were submitted to MammalMAP and PHOWN (PHOTOS of Weaver Nests, see Oschadleus 2014), both being projects of the Virtual Museum, a citizen science project of the Animal Demography Unit, to collect distribution records.

## Results

The first mouse nest was found on 12 November 2014 and the first mouse was found on 30 November 2014 (Table 1). No weaver nests were active in November at the study site – the weavers seemed to

have stopped breeding earlier than at other sites in Cape Town. As a result the weaver species for some nests was not certain, but for others the weaver species was known from visits earlier in the season. There were initially 20 weaver nests in the study site, but this was reduced to 12 nests by the end of the study as some weaver nests broke up, due to weather. In total nine of the 20 weaver nests (45%) were used at the site by the mice.

The occupation time of mice in weaver nests was from November to mid April. The most nests occupied by mice on one visit was six nests (on 1 March 2015). No mice were found on two successive visits in May, although the mice nests (presumed old) were still present in the weaver nests. One mouse nest was present in a weaver nest for over six months (nest A14). Three weaver nests containing mice nests started to disintegrate before the study was over.

Nests of both Cape and Southern Masked Weavers were used. Mean nest height for all the weaver nests (both species) was 119.3 cm (range 57–207 cm, n=15, including nests used by mice) and for weaver nests used by mice the mean height was 128.1 cm (range 57–207 cm, n=8).

A Lesser Swamp Warbler nest (warbler nest 2) was found under an old Cape Weaver breeding nest (site A14). These nests were found on 12 November 2014 but warblers (like the weavers) were no longer active at this site. The warbler nest was still intact under the weaver nest on 17 May and thus lasted for several months after breeding ended. The weaver nest had slipped down onto the warbler nest during the study period and on 1 March I found a mouse nest built between the weaver and warbler nest (Oschadleus 2016), and the mouse nest was still present in May. On 1 March two mice occupied the nest, but the mice were not recorded here again.

## Discussion

Brant's climbing mice were found to use Cape and Southern Masked Weaver nests during the summer months in 2014-2015. This study provides the first record of mice using Cape Weaver nests for shelter. My study suggests that old weaver nests could be an important roosting/breeding site for Brant's climbing mouse in the Cape Town area. This study provides the first quantitative data for nest height for Brant's climbing mouse (see below).

The period of occupation by mice of weaver nests was from November to April. Nine weaver nests contained mice nests but not all were occupied at the same time, i.e. some pairs may have deserted a nest and built a new one. Six nests contained mice on one visit, indicating that there were six pairs in the study area.

The mice nests were built tightly into the weaver nests and are unlikely to disintegrate until the weaver nest starts to break up. Some weaver nests broke up before the end of the study, probably due to weather, but one mouse nest remained for six months. In May mice were no longer found - they had presumably completed breeding and dispersed. Some rain had started falling, prompting weavers to start building new nests in other areas and at the small pond in the study area. Mice probably leave the nests as weavers will destroy all old nests over the initial weeks or months of starting to build - they break down the old nests to use the same sites to build new nests. This could prevent the mice from using weaver nests all year, although climbing mice are known to use weaver nests while weavers are breeding (Hunter 1961).

The weaver nests in this study were 0.5 - 2 m above the ground (there was water initially, but this dried up later in the season). One Southern Masked Weaver nest was about 2m high and was used by mice which were present on four successive visits. Eight of nine mouse nests were more than 1m above the ground. The average

height of nests used by mice was 128 cm, similar to the average of 119 cm for all weaver nests in the study.

The effect of checking nests on the mice is unknown. It is possible that some mice moved to a nearby weaver nest after being disturbed. In nest A03 (highest nest) mice were recorded on four successive visits, suggesting that the same pair remained in the same nest in spite of disturbance.

My study did not record any breeding of the Brant's climbing mouse, but young mice could have been present. On several occasions two mice emerged, suggesting a pair in the nest. Brant's climbing mouse breeds in summer (Skinner & Smithers 1990) or unseasonally (de Graaf 1981, p121) but there are few breeding records and apparently none from the Western Cape. In future, it would be useful to check nests for litters to determine the breeding season in the Cape, and to determine if weaver nests are a common nesting site.

Climbing mice on the Cape Flats have probably been using weaver nests as an ecological resource for a long time. Schmidt (1968) recorded Brant's climbing mouse using Southern Red Bishop nests in Philippi, Cape Town, several kilometres from Zandvlei.

Climbing mice nests built inside weaver nests probably last longer than free-standing nests. The mouse nests inside weaver nests may also be better protected from predators as the weaver nests could provide a form of camouflage.

## Acknowledgements

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**Table 1.** History of the weaver nests that contained mouse nests in Lakeside, Cape Town, November 2014 – May 2015. Species: CW=Cape Weaver, SMW=Southern Masked Weaver. Yellow cells indicate mouse nest present inside weaver nest, M indicates mouse seen. Height shows the nest height in cms. Months shows the duration in months that the mouse nest was present.

Nest	Species	12 Nov	30 Nov	14 Dec	28 Dec	18 Jan	1 Mar	12 Apr	17 May	25 May	Height	Months
A03	SMW				M	M	M	M			207	5.3
A05	CW				M						115	4.8
A05b	CW				M		M				165	3.8
A08	CW?						M	M			57	3.0
A09	CW?				M						111	3.9
A12	CW?							M			116	5.3
A14	CW?		M				M				124	6.3
A15	CW?						M				130	4.5
A16	SMW						M				130	3.0



Fig. 1. Brant's climbing mouse nest inside weaver nest



Fig. 2. Brant's climbing mouse emerging from nest