

Weaver roost count in Hattingspruit, KwaZulu-Natal, South Africa

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Ringers often target reed-beds as a ringing site because there is the chance of catching large numbers of roosting swallows, weavers, warblers and other species. Bishops and weavers may breed in reed-beds and thus these may be captured through a morning. Most of the roosting birds, however, leave early in the morning, requiring ringers to have their nets in place early in the morning.

To study the departure of weavers from a roost, and the arrival patterns in the evening, I observed a roost at the Tom Worthington Dam in Hattingspruit (Figure 1), 17 km NW of Dundee, KwaZulu-Natal. The dam has extensive reed-beds on the west side of the dam. These have been used as a roost site for many years by Cattle Egret *Bubulcus ibis*, Pied Starlings *Spreo bicolor*, weavers and widows. A few other herons and small numbers of waxbills also use the site. The weavers forage during the day in the surrounding agricultural fields, mainly mealies.

Methods

To check on species composition, I extracted my ringing totals from previous sessions at the dam. I ringed 216 birds in December 2000 and February 2001 (Table 1), mostly Red-billed Quelea *Quelea quelea* and Southern Red Bishops *Euplectes orix*.

I counted the birds on 24 June 2005 arriving at the roost in the evening and counted again the next morning as the birds left the roost. From previous ringing sessions and observations, and from the topography of the surrounding area I determined that birds

left the roost in two broad directions: to the south-west (where I counted the birds in this study); and to the north-west (Fig. 1). I stood at the old rail bridge (28°05.036'S 30°07.898'E) south-west of the dam. There is a stream and thus lower lying ground – birds seem to use this topography to navigate in flying towards the dam in the evening until they are close to the dam. I had a clear view from my viewpoint for about 230 m. I guessed the size of each flock and recorded each flock every minute. Only weavers were counted, although this may have included small numbers of waxbills. Pied Starlings were easily distinguishable by their size, flight height and calls. Sometimes Southern Red Bishop flocks were identified by their calls, and Fan-tailed Widows *Euplectes axillaries* by the wing patches. In the morning count Red-billed Quelea were identified by the large flocks flying in undulating waves.

Results

The ringed birds represent the birds seen roosting at the dam over several years of visits, except that small numbers Long-tailed Widows *Euplectes progne* roost here but have not been captured.

The total evening count was 8000 birds, and the morning count 4300 birds. The large difference may be partly because it was more difficult to estimate the large quelea flocks and the birds were leaving more quickly (than the arrival in the evening) that I may have not have counted all the birds. The counts do not include the birds flying from (and to) the north-west side of the dam, and

Table 1. Birds ringed at the Tom Worthington Dam, Hattingspruit, KwaZulu-Natal in December 2000 and February 2001

Species	n	
Banded Martin	<i>Riparia cincta</i>	1
Great Reed-Warbler	<i>Acrocephalus arundinaceus</i>	1
Lesser Swamp-Warbler	<i>Acrocephalus gracilirostris</i>	1
African Reed-Warbler	<i>Acrocephalus baeticatus</i>	12
Little Rush-Warbler	<i>Bradypterus baboecala</i>	1
Levaillant's Cisticola	<i>Cisticola tinniens</i>	1
Pied Starling	<i>Spreo bicolor</i>	1
Village Weaver	<i>Ploceus cucullatus</i>	5
Cape Weaver	<i>Ploceus capensis</i>	30
Southern Masked-Weaver	<i>Ploceus velatus</i>	20
Red-billed Quelea	<i>Quelea quelea</i>	86
Southern Red Bishop	<i>Euplectes orix</i>	50
Fan-tailed Widow	<i>Euplectes axillaris</i>	4
Common Waxbill	<i>Estrilda astrild</i>	3
Total		216

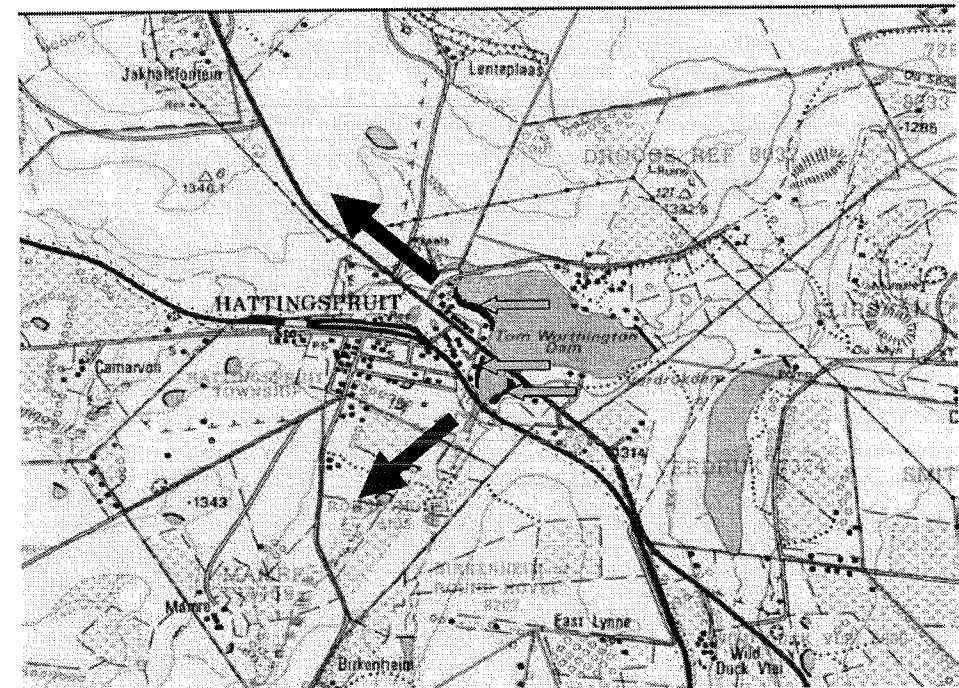


Figure 1. Map of Hattingspruit, KwaZulu-Natal. The reed-beds are coloured black and are indicated by three light arrows. The two solid arrows indicate the main flight directions from the roost.

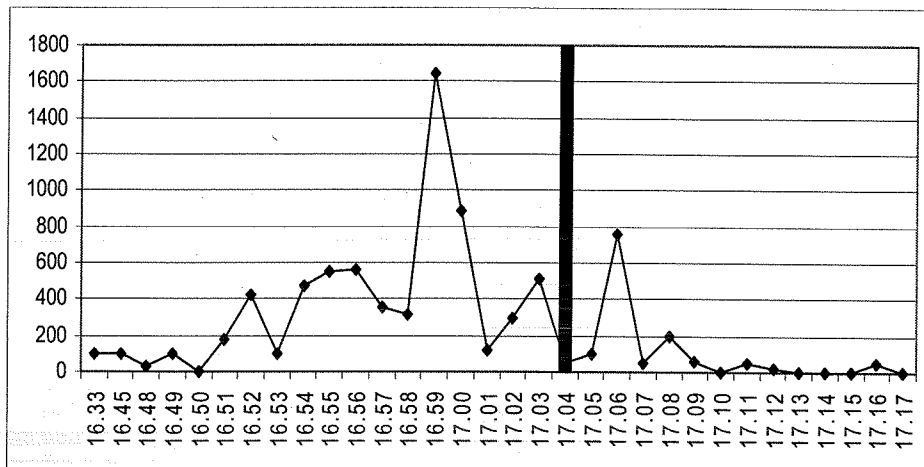


Figure 2. Numbers of weavers arriving at the Tom Worthington Dam, Hattingspruit, KwaZulu-Natal roost in the evening; the bold line indicates local sunset (24 June 2005)

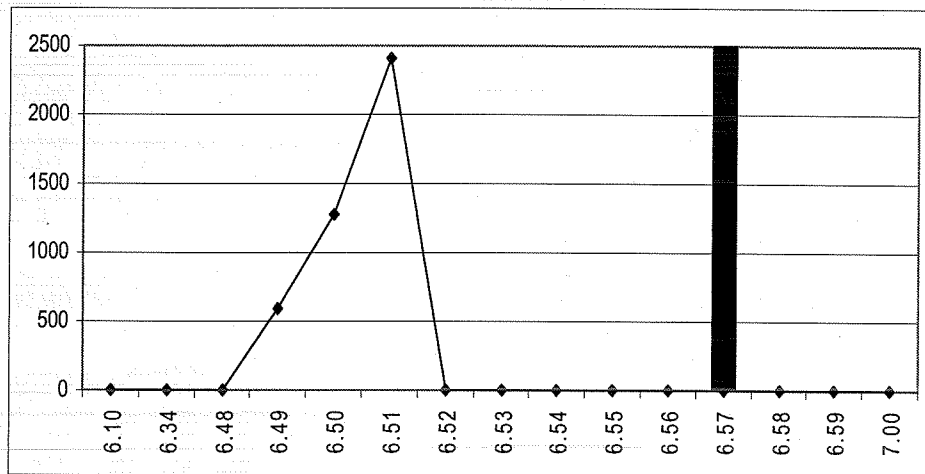


Figure 3. Weavers departing from the Tom Worthington Dam, Hattingspruit, KwaZulu-Natal roost in the morning; the bold line indicates local sunrise (25 June 2005)

some birds flying into the roost from the south-west (where I counted) may have left the roost towards the north-west, which would decrease my morning count. Although the actual count numbers may be unreliable, they do clearly indicate the timing of the roost flights.

In the evening a few birds arrived half an hour before sunset, but most birds arrived during the 15 minutes before sunset and for five minutes after sunset (Figure 2).

In the morning the birds left the roost in a very short time span of five minutes, starting 10 minutes before sunrise (when it was already quite light). The first flocks in the morning were relatively small (10-50 birds) and were presumably bishops and widows. These were followed by large waves (several hundred birds), which were most likely all Red-billed Quelea.

The quelea arrived in small flocks in the evening, as did the other weaver species, so that the quelea numbers could not be counted in the evening. In the mornings the large quelea flocks were easily distinguished from the other weaver species. The total quelea estimated was 3600, i.e. 84% of the weavers in the roost were estimated to be quelea.

Conclusion

Weavers roost in large flocks in reeds or trees through the year. During the day they disperse to feed in smaller flocks in the surrounding areas. Breeding weavers roost in their colonies, but non-breeding birds continue to roost in large flocks through the summer. Weavers are thought to roost communally to be able to share information about good food sources (de Groot 1980). Weavers lose 6-14% of their body mass during the night and need to make up at least this amount of food during the next day's foraging (Oschadleus 2001). In the morning birds that did not forage in a good area the previous day, will follow those birds that return to a good foraging area.

The general pattern found at Hattingspruit

was that the arrival of weavers was in small flocks, and the arrival of most birds was spread over about 20 minutes. Some birds arrived up to half an hour before sunset, but most birds arrived in the 15 minutes before local sunset, with some birds still arriving five minutes after sunset. Roost departure in the morning occurred in an even more concentrated time frame of five minutes, starting 10 minutes before sunrise. Weavers left in small flocks, while the quelea departed in a few very large flocks. The rapid departures fit in with the information-theory as weavers that did not feed well the previous day, quickly follow the weavers that return to a good site.

The Hattingspruit roost pattern is slightly different to that found in a Southern Masked-Weaver roost in suburban Pretoria (Oschadleus 1995). In Pretoria, the Southern Masked-Weavers started arriving near their final roost about an hour before sunset, and flew around trees calling before going into the roost site about 20 minutes before sunset. It is possible that in the suburban roost the weavers did not fly as far to forage during the day compared to the weavers in the rural Hattingspruit area, and could thus arrive earlier. Departure from the Pretoria roost in the morning started about 20 minutes before sunrise and was completed by sunrise.

These roost observations confirm that ringers wanting to catch weavers flying out of roosts in the morning should have their nets up at least half an hour before sunrise. While waiting for birds to be caught, ringers can count the flocks in their area and compare their results to those described here!

References

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