CHRIS VAN ROOYEN

Showtime

CARMINE BEE-EATERS

Arguably Africa's most striking bee-eater, Carmine Bee-eaters put on a spectacular display when they gather to breed. Top photographers **Chris van Rooyen** and **Albert Froneman** captured the action. Text by **Peter Ryan**.

ALBERT FRONEMAN

ABOVE *A mass of Carmine Bee-eaters appears garish against the dry riverbank. The birds breed fairly early in spring, well before the first rains, so that their chicks fledge before the rains start in earnest. Presumably this reduces the risk of losing chicks to flooding.*

OPPOSITE *A Carmine Bee-eater glides anxiously over a water leguaan near the colony. Despite being mobbed by bee-eaters, the leguaan proceeded to inspect accessible burrows and made off with some hapless chicks.*

Every spring, Carmine Bee-eaters gather to breed at favoured sites in sandy banks near water. With large colonies supporting up to 1 000 pairs, they provide an unforgettable birding experience. Two populations – now often treated as separate species – have quite distinct breeding ranges north and south of the equator. The Southern Carmine Bee-eaters *Merops nubicoides* featured here are slightly larger than their northern counterparts *M. nubicus* and are readily distinguished by their pink, not turquoise, throats.

They also differ in their behaviour. Northern Carmines are well known for hitching rides on the backs of large mammals or birds such as Kori Bustards. They use them as 'beaters' to flush their prey, sallying out to catch grasshoppers and other invertebrates. By comparison, this behaviour is rarely seen in Southern Carmine Bee-eaters. And when it comes to breeding, Northern Carmine Bee-eaters may have helpers at the nest, which has not been observed among Southern Carmines.

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SOMEWHAT SURPRISINGLY, THE BREEDING BIOLOGY OF CARMINE BEE-EATERS HAS NOT BEEN WELL studied and there is no information on the incubation period or the respective roles played by males and females in incubation and chick-rearing.

A recent paper fills some of these gaps, albeit based on observations of birds breeding in a Florida, USA, theme park (Elston et al. 2007, *Zoo Biology* 26: 27–39). The study comprised only a handful of birds, so it's not clear how representative the observations are of wild populations, but it provided some interesting insights. Pairs were monogamous, retaining the same mates in successive breeding attempts, but they occasionally visited neighbouring nests during the pre-laying and incubation periods. We already knew that eggs are laid roughly two days apart. With clutches of two to four (rarely five) eggs and incubation starting with the first egg, the chicks hatch over several days. This results in a strong size hierarchy among the chicks, and those that hatch later often die of starvation. The captive birds had very short incubation shifts, with females spending longer in the nest (eight minutes) than males (four minutes). Females also made slightly more visits to the nest, and overall spent roughly three times longer incubating than males. The incubation period was 20–21 days. Once the chicks hatched, males carried more of the load, delivering three to four times more food than the females.

The chicks grow rapidly and by 15–20 days weigh more than their parents. In the wild they fledge close to adult mass, but in captivity they fledged 22 per cent heavier than adults, then slowly lost mass during the next couple of months.

ABOVE *A Carmine Bee-eater prepares to land at its burrow entrance. Although most breed in banks or on sloping ground, some pairs dig their burrows on flat ground. Both sexes help to excavate the burrow, which typically is one to two metres long, but it may reach 3.7 metres. Successful nests become heavily fouled with prey remains and faeces, so the majority of pairs dig a fresh burrow each year.*

RIGHT *A Carmine Bee-eater kicks up sand as it takes off with an insect in its bill.*

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CARMINE BEE-EATERS SOAR OVER THE ZAMBEZI RIVER NEAR THEIR COLONY. BEFORE LAYING, THE ENTIRE COLONY FREQUENTLY FLUSHES *EN MASSE*, CHITTERING AND WHEELING AROUND, BEFORE THE BIRDS ONCE AGAIN SETTLE AT THEIR NESTS.

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ABOVE *Masters of the air. A Carmine Bee-eater soars on the updraught caused by a gentle river breeze meeting the breeding bank.*

LEFT *Carmine Bee-eaters jostle in the air, often grabbing each others' bills. Such displays are fairly routine during the pre-breeding period and are probably aggressive encounters between competing males.*

SOUTHERN CARMINE BEE-EATERS ARE NOT LISTED AS THREATENED, BUT HAVE A FAIRLY SMALL BREEDING range that extends along major rivers from southern Angola and Zambia through northern Namibia and Botswana to Zimbabwe. They used to breed in Mozambique, but there are no recent records. Dam-building, especially along the Zambezi, flooded numerous colonies, and irregular water releases linked to hydro-electric power generation promote bank erosion, causing colonies to collapse. Bee-eater colonies are highly visible and may attract unwanted human attention. Some sites have been deserted after the birds were exploited for food, and there are rumours of adult birds being killed for their colourful feathers.

Even well-intentioned activities may have adverse impacts. One colony in Zimbabwe was deserted after adults there were ringed in three successive seasons. Uncontrolled tourism can also cause problems, as a result of both direct disturbance and increasing bank erosion through waves created by boat traffic. Birders visiting colonies should encourage local tour operators to be sensitive to the birds' needs. □