

sociable weaver

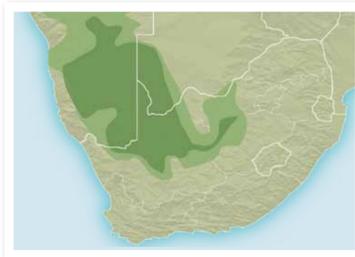
Philetairus socius



RENE VAN DUK

True to its name, the Sociable Weaver is a very social species.

Individually the birds are small and inconspicuous, but together they are highly noticeable due to their distinctive social behaviour and unique communal nest structure



– a huge mass of dry grasses. The species is endemic to the Kalahari and Nama-Karoo regions of southern Africa and its nests are a characteristic feature of the inhospitable, semi-arid landscape, lending an odd, thatched appearance to the trees upon which they are built. They also provide refuge for other species.

This communal nest structure is the result of the weavers' fascinating social organisation and cooperative behaviour, which is also obvious in tasks such as raising young, keeping watch for predators and defending the colony. Cooperative behaviour, the protection provided by the nest mass and the birds' physical adaptations to extreme temperatures and lack of water enable the weavers to thrive in the harsh and unpredictable Kalahari environment. Text by Rita Covas, except where indicated otherwise.

Nest structure & construction

The nest structure built by Sociable Weavers is outstanding and probably the largest made by any bird. Some of the most extensive ones, which are home to several hundred weavers, may measure more than four metres across and are estimated to weigh over a ton. Although larger and thicker nests may be more efficient at buffering the unforgiving Kalahari temperatures, the massive volume reached by some nests goes beyond any measurable benefit. The reason for this has eluded researchers, but it is known that males generally build more than females do and that older, more dominant birds tend to do a larger share of the building.

These massive structures are attached to the branches of trees, often acacias or quiver trees. Sometimes they decorate telephone and electricity poles and are even seen on buildings and cliffs. Curiously, Sociable Weavers do not weave their nest as weavers typically do, but instead push the grass stalks into place. They start with a small pile of stalks and push more and more grass into it until they have made an extremely tight-knit and robust structure – a method that is surprisingly simple and effective. Embedded in the communal nest mass are several independent chambers, the inside of which is the only part of the entire structure woven in a manner more typical of the weaver family. The individual chambers are built by pairs or groups and used for breeding and roosting by the whole group throughout the year, with up to eight birds roosting together in a single chamber. However, a larger group may occupy two or, exceptionally, even three chambers in the colony, particularly when one of its chambers has eggs or chicks.



ALBERT FRONEMAN



Social structure & cooperation

The social structure of the Sociable Weaver is truly fascinating. Akin to that of traditional human societies, it has three levels of organisation. The nuclear family, comprising a breeding pair and its young, stays together throughout a whole year and into the following breeding season, roosting every night in the family chamber. Above the family unit, the neighbourhood often includes relatives living nearby. If a snake threatens a nest, the close relatives and neighbours are more likely to mob it than would birds from another part of the colony. Finally, different families and neighbourhoods come together to form a colony, which moves around as a cohesive group when the birds forage, all keeping watch for predators such as Gabar Goshawks. For mating, however, females usually look for mates in another colony. The result of this sex-biased dispersal is that within a colony the males are usually related, but not the females.

As in any functioning society, Sociable Weavers also cooperate on various tasks: grown-up young help their families to raise chicks and clean the nest, all colony members participate in building and maintaining the nest structure, and of course, they all watch out for predators and warn their mates if danger approaches. Living together can also be a source of conflict, though. A well-defined dominance structure among Sociable Weavers, conveniently signalled by the size of the black bib, helps all individuals to know how to interact with the different colony members and minimises the number of fights.



FRANK THERON (3)



ALBERT FRONEMAN

Adaptations to a hostile environment

Their remarkable nest helps Sociable Weavers to survive by buffering the temperature extremes of the Kalahari: the temperature inside the nest chambers is far more stable than that of the outside environment. The closer a chamber is to the centre of the structure, and the deeper it is built into the nest mass, the greater are the thermal benefits. Older, more dominant birds occupy the best, most thermally buffered chambers.

The birds themselves also have adaptations to the hostile environment. They feed on seeds and insects but, like many desert insectivores, they are able to live almost entirely on water gained from their food. They will, however, also drink from waterholes, farm troughs and dams, especially on hotter days or during very dry periods when water-rich food is not available. The weavers' normal body temperature is about 40–41 °C, but they can tolerate body temperatures of up to about 44 °C. They cope with the heat of the Kalahari summer by allowing their body temperature to rise slightly when the air temperature exceeds 40 °C, which helps them to dissipate some heat. They also use evaporative cooling (evaporating body water, usually by panting) to offload up to 220 per cent of the heat their own bodies produce and maintain a stable body temperature at air temperatures of up to about 50 °C.

SUSIE CUNNINGHAM

Interactions with other species

Sociable Weaver nests are a popular dwelling for a wide range of species. Several bird species, such as Acacia Pied Barbet, Red-headed Finch and Scaly-feathered Finch, regularly roost or breed in the nest chambers and Tawny Eagle and Verreaux's Eagle-Owl make their own nests on top of the weavers' structures. Africa's diminutive Pygmy Falcon breeds exclusively in Sociable Weaver nests in southern Africa, and may occasionally prey on weaver chicks and even adults. Reptiles, insects and mammals, including the small-spotted genet, may also be closely associated with the nests. The exact nature of interactions between weavers and these 'guest species' is not known but is likely to entail a mix of costs and benefits. Sociable Weavers probably serve as 'ecological engineers', creating opportunities for other members of the Kalahari animal community.

Sociable Weavers also play a key role in mixed-species foraging flocks. In particular, Fork-tailed Drongos often accompany weaver flocks and feed on the invertebrates they disturb, while weavers benefit by eavesdropping on drongo alarms at predators. However, drongos exploit their sentinel role by using false alarm calls to scare weavers and steal their food. Drongos even sing a watchman's song to attract weavers and allow them to spend more time foraging, yet use the same watchman's song to call the weavers out from cover following false alarms.

ROBERT THOMSON & TOM FLOWER



PYGMY FALCON

Interaction with humans & changes in distribution

In spite of living in such a challenging environment, the Sociable Weaver is one of the most common species wherever it occurs. With the recent availability of manmade structures like telephone and electricity poles, the weavers have even expanded their distribution range to some areas of the northern Nama-Karoo, where the lack of trees prevented them from nesting in the past. Sometimes, if the nest gets too heavy, it can cause a pole to fall over, with disruptions to the electricity supply. It has been speculated that reduced nest predation by snakes – given the difficulty of climbing the smooth, upright poles – has made it easier for the weavers to expand into these new areas. On the other hand, human activities may indirectly cause declines in Sociable Weaver populations in future. With the current global warming trend, arid regions are expected to experience even lower rainfall and higher temperatures, two factors known to have a negative effect on the weavers' ability to survive and reproduce.