

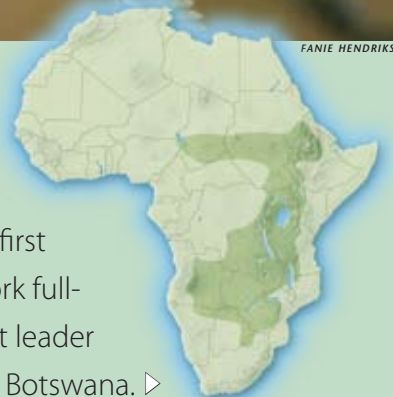
OBSERVATIONS OF MEYER'S PARROT

FRUITFUL *endeavours*

TEXT BY STEVE BOYES



In January 2004, the Meyer's Parrot Project was initiated by the Research Centre for African Parrot Conservation at the University of KwaZulu-Natal, South Africa, to facilitate observation in the wild of this previously unstudied but important transcontinental species. Three years later, in January 2007, the project established its first independent research camp, which allowed it to accommodate volunteers and to work full-time on unravelling the secrets of Meyer's Parrot *Poicephalus meyeri* in the wild. Project leader **STEVE BOYES** reports on their findings from the study area in the Okavango Delta in Botswana. ▶





STEVE BOYES (2)

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Work has been conducted in the wild on the endangered Cape Parrot *Poicephalus robustus*, the threatened Rüppell's Parrot *P. rueppellii*, the little-known Yellow-fronted Parrot *P. flavifrons*, the Brown-headed Parrot *P. cryptoxanthus*, the Grey Parrot *Psittacus erithacus*, and several of the *Agapornis* lovebirds. Meyer's Parrot has the widest distribution of all the African parrots, extending from South Africa northwards to the Sudd. As no work had been done on Meyer's Parrot in the wild, there was a degree of urgency to get this project off the ground – any future conservation plan for the continent's parrots would be incomplete without comprehensive baseline data on this

species. This study would function as a benchmark for comparison with those done previously on *Poicephalus* parrots, motivated according to threat status and endemism.

During the first two years of the project, it became clear that Meyer's Parrot, as an 'individual' in an evolutionary context, has engineered itself an ecological niche in which there is limited interspecific competition for food and nesting resources. It is a secondary cavity-nester and, in the Okavango Delta, it competes with 43 other bird species that nest in a similar fashion. However, in autumn and early winter (its primary breeding season), none of the other cavity-nesters breeds.

As part of the 2007 field season, we set out to determine how this was possible. Results from the 250 census runs (conducted between August 2003 and January 2006) indicated that Meyer's Parrot's ecological success and breeding season exclusivity were achieved through sole use of specific seasonal food items (see box, page 35). The missing link in previous field seasons was the apparent lack of arthropod consumption during egg production and nesting. But, on closer inspection of the same food this season, we found that four of the five primary items targeted during egg production, including *Terminalia sericea* pods, marula *Sclerocarya birrea* fruit, and pods of both the russet bushwillow *Combretum hereroense* and mopane



RICHARD DU TOIT

Colophospermum mopane, contained larval tree parasites incubating within the seedpods and fruit.

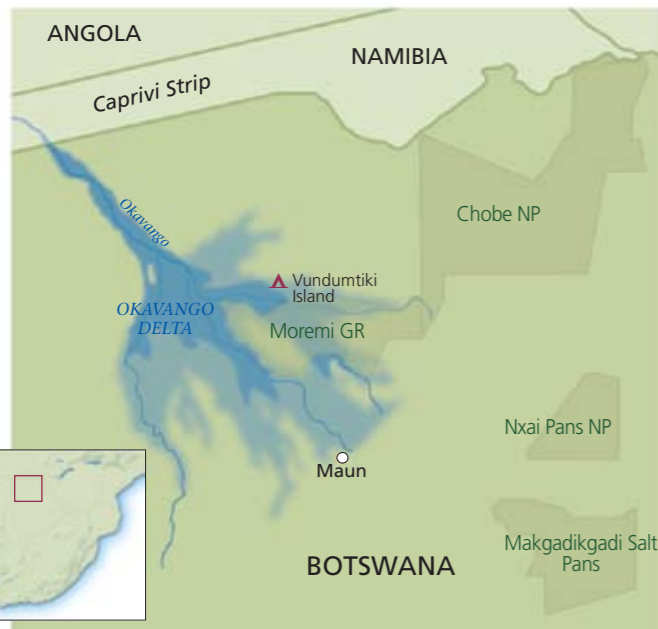
Each of these parasites was incubated and photographed to facilitate identification in the future. We took some 500 bi-weekly samples of the food items to determine infestation levels over time. We found that male parrots provisioning nests focused exclusively on these specific fruits and pods, while the non-breeding birds fed on a diversity of items, for example the sausage-tree fruit *Kigelia africana* and red star apple *Diospyros lycioides*. Significantly, egg production was synchronous with highest infestation levels in these food items. For the duration of the study, no other bird species was observed to locate and eat these particular foods, in spite of the fact that the parrots would excitedly announce the presence of the morsels.



found that each active breeding pair maintained a territory of up to 10 hectares, including two to four nest cavities, and often overlapped with other breeding pairs. Nest preparation and copulation was synchronous with all breeding pairs but, as a result of high male vigilance, only one instance of extra-pair copulation was observed ▽

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On a mission

The 2007 field season was made possible by funding from the British Ecological Society and several private donations to the World Parrot Trust. The support of Wilderness Safaris Botswana was invaluable in the facilitation and logistical support of the project.

The study site, Vundumtiki Island, is located on the junction of the Maunachira and Kiankiandavu channels in the north-eastern Okavango Delta, Botswana. This is one of the most remote locations in the delta, being three hours from the closest airstrip and anything between 15 and 48 hours from Maun, 300 kilometres away. It was our intention to ensure that we were getting baseline data from a wilderness area for use as an ecological benchmark for the conservation of *Poicephalus* parrots.

During the primary breeding season, at any one time we had two or three volunteers in camp. All had diverse and life-changing experiences during their stay in this Okavango wilderness, such as being charged by elephants, having lions eat a buffalo at a 10-hour observation site, sharing a shower with the local leopard, and tolerating baboon raids on the camp. Thanks to all who risked their lives in pursuit of greater knowledge of Africa's parrots.



STEVE BOYES (5)

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during the study period. It also became clear early on that the majority of the population was non-breeding, congregating in large flocks of between eight and 25 parrots in the mopane woodland. These birds spent much of their time socialising, preening and allopreening, and were affectionately called the 'singles' club'. Pairs without an established breeding territory were observed inspecting and excavating nest cavities and artificial nestboxes throughout the breeding season, but did not nest.

From March until the end of July, we conducted more than 1 300 hours of nest observations, in the process compiling the most comprehensive record of the nesting cycle of any African parrot in

the wild. Based on a preliminary analysis of these records, the following overview of the Meyer's Parrot nesting cycle in the Okavango Delta is possible.

P. meyeri began nest preparation and copulation in mid-February, which coincided with the cessation of breeding by Burchell's Starling *Lamprolornis australis*. Males used courtship displays and supplementary feeding of arthropod regurgitate to encourage the females to copulate with them. The onset of nesting was synchronous for all breeding pairs that achieved hatching, and egg production matched the highest parasite infestation levels in target tree species collectively. During the period before egg-laying, both adults were very vocal, announcing and defending their breeding territory. From the onset of egg-laying in early April, the female remained permanently in the nest cavity, while the male provisioned her with a predominantly arthropod diet, up to 12 times a day.

Nest attendance by additional, obviously juvenile parrots was common. These were probably fledglings from the previous season and their contribution to nest attendance was very erratic. From then, activity at the nest became very cryptic: there was limited calling in the nest tree (only in the early morning and afternoon) and very few instances in which the female was fed at the nest cavity.

Typically, the male would give a contact call while flying past the entrance to the nest cavity, thus alerting the female to his arrival. She would then leave the cavity and join him in a nearby tree to receive regurgitate. This continued for four to five weeks before the clutch of three or four eggs hatched over a period of five days. The female remained with the hatchlings for three to four weeks for purposes of thermoregulation in the cavity. During this period, she was observed sticking her head out of the cavity more frequently, probably to ventilate the chamber and to regulate temperature as the chicks grew. In the final two weeks before hatching, the female spent all her time out of the nest, foraging and provisioning the nestlings. During this time, the oldest hatchling spent much of the day positioned at the entrance to the nest cavity, ensuring optimum access to regurgitate from its parents.



Fledging in the last week of June was synchronous in all five successful nests. The cavity was abandoned after fledging, but the youngsters remained within the breeding territory for several weeks, using the nesting tree as a meeting point where provisioning by the parents took place. In past seasons, supplementary feeding of the fledglings continued for up to six months.

During our study period, there were two predation events during egg production and incubation which involved black mamba *Dendroapsis polylepis* and tree monitor *Varanus albigularis*, and two during nesting and provisioning which involved large spotted genet *Genetta tigrina*. An African Harrier-Hawk *Polyboroides typus* was observed robbing a nest just prior to the parrots fledging, and an

African Fish-Eagle *Haliaeetus vocifer* attempted to take a fledgling a couple of days after it had left the nest.

In the future, we hope to motivate projects with local and international partners on all African parrots that have yet to be studied in their natural habitat. We look forward to the coming seasons in the field, to more volunteers, funding and donations, and to gaining a greater understanding of Meyer's Parrot, cavity-nesting bird species' relationships, and the eventual formulation of a comprehensive conservation plan for African parrots in the wild. □

For more information and notification of up-and-coming peer-reviewed publications, contact the author on boyes@africaskyblue.org

FINDINGS UP TO JANUARY 2006

- Meyer's Parrots track resources based on a food's abundance and nutritional value, and competition with other frugivores. This is achieved by targeting seeds from unripe fruits and leguminous pods, thereby minimising competition with other frugivores (including birds and primates).
- They can deal with the extremely hard nut cases of both the marula *Sclerocarya birrea* and real fan palm *Hyphaene petersiana*, and fruits of the baobab *Adansonia digitata*. This behaviour, which has not previously been observed in *Poicephalus* parrots, allows them exclusive access to these resources.
- Breeding was observed throughout the year, but 90 per cent of reproductive activity occurs between March and July. This seemed to coincide with the end of the wet season and the onset of the floods, and the resultant availability of *Terminalia sericea* pods.
- Before starting to nest, Meyer's Parrot was observed to wait for Burchell's Starling to complete its breeding effort. In this way, the parrot avoids competition with this large and aggressive cavity-nester. The starling was observed defending parrot nest cavities within its breeding territory, but did not utilise them.

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