



## when the sun goes down

Because humans are principally daytime creatures who avoid wandering around in the bush at night, we don't see the animals that live under cover of darkness. Even on a night-time game drive, the acute senses of nocturnal wildlife outwit our underdeveloped abilities, causing us to miss a great deal. Camera traps, on the other hand, have none of these disadvantages and can provide some fascinating insights. While conducting a census of the nocturnal carnivores in Mankwe Wildlife Reserve in South Africa's North West Province, **Jason Gilchrist** of Napier University, UK, and his colleagues set a few with some unexpected results.

**C**arnivores are generally solitary, rare and shy, and many are nocturnal – a combination of characteristics that makes them tricky to detect. And, because of our inability to determine an animal's presence accurately, it is possible to underestimate the conservation value of an area. One way of gaining a perspective on an area's biodiversity is to look for spoor – footprints in the dirt or faecal pellets. From a few indentations in the dust or from a pile

of dung, an experienced tracker can tell what animals are present, how many there are, their age and sex, where they are going and how long ago they passed by. But, to interpret spoor, you have to spend a long time in an area and do a lot of walking, and there will still be a degree of uncertainty.

There is another way – the camera trap, which has the advantage of offering indisputable evidence that is not open to creative interpretation. It does

require some level of bush craft, however. Deciding where and how to site your camera is crucial to success in capturing a particular animal on film.

Our camera traps were connected to active infrared monitors, each of which has an emitter that sends out a beam of invisible light and a sensor that detects the infrared beam. When an animal walks between the emitter and the sensor, it breaks the beam, sending a signal to the camera to take a picture.

One disadvantage of a camera trap is that you have no control over the position of the animal when it breaks the beam. The resulting images lack focus and are unlikely to win awards, but they do log species and also provide information on density and behaviour patterns. Around the world, camera traps are used in a variety of circumstances, from censusing tigers in India and spectacled bears in Peru, to confirming the continued existence of threatened species such as the critically endangered Sumatran rhino in Borneo.

The excitement among our team when photographs came back from the developers was palpable. In addition to allowing us to record the presence of otherwise 'invisible' species, the traps gave us an insight into a side of life that we rarely encounter. ▶



### Lone ranger

We wanted to determine the age and sex composition of 15 banded mongooses we had been monitoring, but were having trouble getting them interested in the traps. We had tried a variety of baits and, although the food was being removed, the signs did not point to our banded mongoose group. So, we set a camera on the traps to find out more.

The photographs confirmed the perpetrator – a slender mongoose. This species, unlike the banded, is solitary. This individual was using a den in the rocks just a few metres from the home of the banded mongooses. We also obtained photos of a slender mongoose at a dead impala from which it was probably scavenging meat – a rare feast for an animal that otherwise eats small vertebrates (mainly mice and lizards).



### Bait and bird

We found some faecal pellets in one area, indicative of a small carnivore, but had no photographic evidence. So, using boiled eggs as bait, we set a camera trap. The photographs showed that the animals attracted to the eggs were feathered, not furred. Never slow to home in on a novel food supply, a flock of mischievous pied crows paid the eggs a visit, and even a crested francolin wandered through.

### The real culprit

In amongst the unexpected birds was the animal I had been hoping for – a water mongoose. As its name suggests, this elusive, shaggy-haired mammal is associated with wetland areas and its territory follows an unusual shape – the flow of a river course or other body of water. You may think a semi-aquatic mongoose would have webbed feet, but the opposite is the case. It has distinctive separate digits that enable it to forage under and between stones in riverbeds.



### Pocket power

What is the toughest carnivore in Africa? Is it the lion, the leopard or hyaena? The unexpected champion is the honey badger. It may not be huge, but it is short, stocky and a bundle of muscle, with the aggression of Mike Tyson. I have never seen a honey badger in the flesh, but I was very happy to find one checking out the camera trap.



### Veggie burgers

When we think of warthogs, we tend to think of grass-chomping vegetarians and it is hard to imagine these lawnmowers tucking into a meat fest. Much to our surprise, we captured a family of warthogs getting stuck into an impala carcass that we had left out as carnivore bait.

To be fair, the photographs suggest that the warthogs were sticking their snouts into the stomach and intestines and were eating the semi-digested grass within. Like many pigs, they are not fussy eaters and will consume almost anything. Whilst working on banded mongooses in Uganda, a warthog ate one of my study animals – alive!



### Arboreal athlete

The nocturnal, carnivorous genet is as happy bounding about in the trees as it is on the ground. This lithe, athletic viverrid usually hunts for small vertebrates and invertebrates, but it is not above scavenging – as we discovered from a camera set up on another impala killed by a caracal.



### Head hunting

The impala carcass with which we captured the warthogs was a natural kill that we had found lying by a roadside. There were signs of a scuffle and an area of flesh around the anus had been eaten. We dragged the carcass a short distance from the road (we suspected that our vehicle had scared off the predator responsible) and placed it in a clearing between two trees so that it was well oriented for our camera trap. We hoped the predator would return to finish its meal.

That same evening and on a number of subsequent ones, the camera photographed a caracal returning to its kill. At 40 to 80 kilograms, an adult male impala is an impressively large kill for this cat, which weighs between 10 and 20 kilograms.

Apart from the gnawed flesh on the hindquarters, a characteristic sign of a caracal kill, the carcass was unmarked when we discovered it. The neck, however, appeared to be dislocated, suggesting that the impala had been chased into a tree, breaking its neck – a common caracal hunting ploy.

### Strange bedfellows

The presence of chewed bones and some unrecognisable tracks in the dusty mouth of a cave intrigued us, so we set up a camera trap to determine the occupant. We thought it might be a brown hyaena. The photographs revealed a family of prickly porcupines exiting the cave on a nocturnal foraging trip. An added bonus was the evidence of their housemates, common slit-faced bats.

