Close Encounters of the Nocturnal Kind

As mammal watchers are well aware, a good proportion of mammals are only active after dark which makes them very hard to see, especially for those that live high up in forest canopies. It turns out that even researchers struggle to survey this group and little is known about some of these intriguing mammals. Embracing thermal technology, we are trying to close the knowledge gap. For the past four years, my husband, Trev and I have dedicated our research to nocturnal arboreal mammals in Panama and lately, a season in Peru. We use a small portable platform that we strap to tree trunks at around 15 meters high from which to conduct night long surveys using multi-spectrum thermal/IR binoculars, a method we dubbed ENO's (elevated nocturnal observations)

We use the Hikmicro Habrok HQ35LN which gives us the ability to search using thermal and then at the click of a button switch to IR optical for better identification, meanwhile recording everything we see to video. The thermal quality is exceptional and enables good identification of medium sized species in its own right but when you switch to IR optical mode the results are amazing and we have been able to identify a range of small arboreal rodents this way. It is a game changer that has given us an insight into the nocturnal world up in the rain forest canopy and we have had some stunning encounters.

For us, the true beauty with the method is its passiveness, no need for bright blinding lights, no need to disturb the mammal. By using thermal we get to watch natural behaviour, following mammals as they get on with life and we have had the pleasure of observing a number of behavioural interactions such as den sharing kinkajous and mating porcupines. To date we have recorded over 50 mammal species (not including bats) and had some truly amazing close-up experiences. We would highly advocate the use of thermal/IR optics for watching nocturnal mammals, what they allow you to observe is a revelation and from the ethical stand point, surely anything that lowers a mammal watchers impact on the very creatures we love is a bonus.

Here are a few examples of the mammals we have recorded; these are all screen shots from video clips.

Bicolored-spined porcupine (Coendou bicolor) in black hot thermal followed by IR optic view. About 10 meters from the observer and about 18 meters above the ground.

Panamanian night-monkey (Aotus zonalis) in black hot thermal and in IR optic just meters from the observer.

Kinkajou (Potos flavus) in black hot thermal and IR optic

Silky anteater (Cyclopes didactylus) and Central American woolly opossum (Caluromys derbianus)

And on the ground below us:

Margay (Leopardus wiedii) and Armoured rat (Hoplomys gymnurus)

We are giving a free online talk about using thermals for observing nocturnal arboreal mammals as part of the UK's CIEEM (Chartered Institute of Ecology and Environmental Management) Looking Outward series if you are interested:

Looking Outward Series: How ecologists in the tropics are revolutionising surveys of nocturnal arboreal mammals with thermal optics during elevated nocturnal observations (ENOs)

If you want to read more about our research there is a blog here:

Close Encounters of the Nocturnal Kind « Life Sciences# « Cambridge Core Blog

And we have published two open access scientific papers:

Blending in – an unobtrusive method for observing behaviour in nocturnal arboreal mammals in the tropics using thermal optics from an elevated platform | Journal of Tropical Ecology | Cambridge Core

Comparing two methods for surveying nocturnal arboreal mammals in a tropical forest – thermal observations from an elevated platform and arboreal camera traps | Mammal Research | Springer Nature Link