

# Wildlife Conservation Society supports world's first study of egg-laying mammal

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As a research intern for the Wildlife Conservation Society, Muse Opiang (now of the Papua New Guinea Institute of Biological Research) completed a study on one of the world's most elusive, egg-laying mammals: the long beaked echidna. Credit: WCS Papua New Guinea

A Wildlife Conservation Society research intern working in the wilds of Papua New Guinea has successfully completed what many other field biologists considered "mission impossible"—the first study of a rare egg-

laying mammal called the long-beaked echidna.

The WCS-supported study—which consisted of thousands of hours of grueling field work in Papua New Guinea's Crater Mountain Wildlife Management Area—took Muse D. Opiang, now of the Papua New Guinea Institute of Biological Research, several years of remotely tracking the porcupine-sized mammals and recording their dens and other signs.

The study, published in a recent of the *Journal of Mammalogy*, chronicles the first solid data on the animal's nocturnal foraging behaviors, movement patterns, and home-range sizes for the species.

The long-beaked echidna is found only in New Guinea and is a member of the monotremes, a primitive order of mammals that forced zoologists to change their very definitions of what a mammal is. Unlike all other mammals, monotremes like the echidna (also called the spiny anteater) and the better known platypus lay eggs.

"All of the time and effort invested in the study has paid off with new insights into the natural history of this seldom seen and unusual mammal," said Opiang. "These findings will help inform conservation strategies for the species, which is threatened by hunting and habitat loss."

The nocturnal, subterranean lifestyle of the species represented a real challenge for field research, with some experts declaring the species impossible to study. And it did take some time - nearly 6,000 man-hours of field work between 2001-2005. Opiang spent 500 hours in the field before locating his first animal.

In the end, Opiang managed to capture 22 individual echidnas (15 adults and 7 juveniles), and affixed radio transmitters to 9 adults and 3

juveniles. Because this was the first study of the unusual species, Opiang had to develop methods by trial and error. Initially, transmitters were attached to spines, but the constant burrowing and digging of the echidnas resulted in transmitters falling off. The ankle proved to be a more reliable placement point. Home ranges for the tracked echidnas averaged 39 hectares (96 acres).

The study located over 200 den sites, most of which were underground, while others were found in cliff faces and in thick vegetation. One lactating female was found. Other signs recorded in the study were nose-pokes (when the echidna pokes its tube-like snout in the soil in search of invertebrate prey) and digs (deeper holes excavated with the echidna's long claws).

"The limited information on the long-beaked echidna's biology, feeding behavior and ecology has prevented conservationists from formulating plans for protecting this elusive and threatened animal," said Dr. Ross Sinclair, Director of WCS's Papua New Guinea program. "The research methods developed by Opiang and the data he gathered can now help us to manage and protect this rare and species."

### About long-beaked echidnas

- Echidnas are members of the monotremes, an order of mammals that lay leathery eggs, as opposed to placental and marsupial mammals, both groups of which give birth to live young.
- Echidnas resemble anteaters with long coarse hairs and spines. They are powerful diggers and possess short legs with long claws.
- The snout of the echidna ends in a tiny mouth with no teeth.

- Long-beaked echidnas feed on insect larvae, worms, and other invertebrates (whereas short-beaked echidnas prefer ants and termites).
- Echidnas and platypuses are more reptile-like than other mammals, with features such as: a more sprawling gait; and a single opening for depositing waste and facilitating reproduction (known as a cloaca, as in both birds and reptiles).
- Echidnas (both long- and short-beaked) lay a single egg, which the female holds in a sticky pouch. The hatchling (known as a "puggle") resides in the pouch for between 40-50 days and receives milk from two mammary patches (echidnas have no teats).
- Once the puggle develops spines, the mother digs a nursery den that becomes the puggle's new home; the mother returns every five days to nurse the puggle. The baby is weaned in seven months.

Source: Wildlife Conservation Society ([news](#) : [web](#))

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