

The Mammals of Kumul Lodge, Enga Province, Papua New Guinea, with Notes on Calaby's Pademelon *Thylogale calabyi*

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ABSTRACT. Over a period of 14 years (2006–2019) 15 visits were made to Kumul Lodge in Enga Province, Papua New Guinea. Forty hours of nocturnal searching spanning 31 observation-nights with occasional daytime-sightings resulted in 11 species of native mammals being recorded in the lodge grounds. Of most importance were sightings of the rare Calaby's Pademelon *Thylogale calabyi*. Observations and photographs of this poorly known and threatened macropod are presented. Three species—the dasyurid *Murexia melanurus* and rodents *Lorentzimys nouhuysi* and *Rattus steini* are reported in Enga Province, for the first time.

Introduction

Observing mammals in the field, in the mountains of Papua New Guinea, is difficult. Many species are hunted intensively by local people for food and pelts. Most mammal species are nocturnal and occur at low density in thick forest where terrain is often steep. Identification guides are limited; confident identification often requires comparative studies using museum specimens (Helgen, 2007). Field-identification of a handful of distinctive species is possible, however, from good sightings or photographs alone. It remains, never-the-less, a challenge to study mammals in the field in this remarkably biodiverse country.

Knowledge of many mammal species in the different regions of Papua New Guinea is still remarkably poor and Enga Province is no exception. Helgen (2007) references 39 species from Enga Province, qualifying this number with the caveat: “many species remain to be detected and ... the local mammal fauna is likely to be twice as diverse as currently recorded”.

In the past few decades a small number of ecotourism lodges have been developed offering visitors accommodation in forested areas where bird-watching and cultural tours have become increasingly popular. One site is Kumul Lodge which

is unique in being both entirely managed by the traditional owners and situated in largely undisturbed montane forest in the central highland cordillera.

Kumul Lodge (5.793°S 143.974°E) is situated close to the western flank of Mount Hagen at 2861 m above sea-level in Enga Province, Papua New Guinea (Fig. 1). It is located in an area of thick montane cloud rainforest with pockets of anthropogenic grassland some of which are very extensive on either side of the Highlands Highway. Kumul Lodge is also unique in that it has a feeder table where fruit is placed to attract various fruit-eating birds such as birds of paradise, honeyeaters, and tiger-parrots. The fruit has also attracted at least three species of mammal directly to, or underneath, the table to feed on scraps (pers. obs.).

Fifteen visits were made by the author to Kumul Lodge between 2006 and 2019 whilst leading natural history tours. Visits occurred in June (2010, 2019), July (2017), August (2006, 2007, 2010, 2011, 2013, 2015, 2016, 2018), September (2012, 2014, 2019) and October (2009). A total of 31 nights were spent at the lodge with a minimum total of 40 hours spent at night searching for mammals with powerful hand-held torches. The objective was to record as many native mammals in the region as possible.

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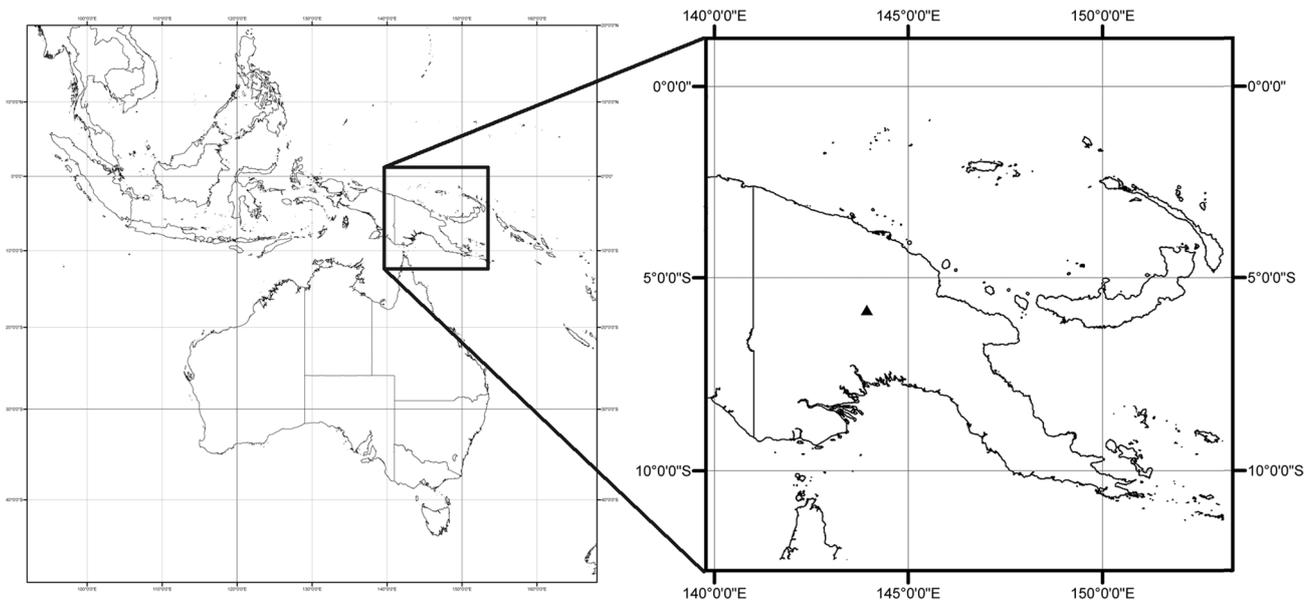


Figure 1. The location of Kumul Lodge in Enga Province, Papua New Guinea.

There are large population centres on either side of the lodge in Mount Hagen and Wapenamanda. Hunting pressure is undoubtedly high in the region and a hunting party was reported to be on the grounds of the lodge in 2010 (Steve Anyon-Smith, *pers. comm.*). Despite the human pressure, the lodge supports a good diversity of native mammals with eleven species being recorded, one of which—Calaby’s Pademelon—is of conservation significance.

Calaby’s Pademelon, *Thylogale calabyi* Flannery, 1992, is a poorly known macropod endemic to the subalpine mountains of central Papua New Guinea (Flannery, 1992). Recent records are restricted to patches of subalpine grassland that abut thick upper montane forest on Mount Albert-Edward, Mount Giluwe, Pureni, and Porgera with unvouchered material attributed to this species from Mount Wilhelm (Helgen, 2007). Little has been reported on the species this century. The most recently collected specimens appear to be those from Mount Albert-Edward in 1981 (Flannery, 1995) and a trophy jaw collected in the village of Suyan, Kaijende Highlands, Enga Province (Helgen, 2007). The trophy jaw is the only record from Enga Province.

In 2007 and 2009 it became apparent from hearing the sound of thumping, consistent with hopping, that a small forest macropod was present in the vicinity of the lodge. On both visits in those years the hopping commotion was heard twice along a forest trail that starts near the lower orchid garden and travels towards the base of the lodge. Local people were able to confirm that indeed there was a forest wallaby and that it was occasionally seen early in the morning around the grassland under the bird-feeding table. A local resident and bird-watching guide, Max Mal, has noted that the local name in the Enga language for a pademelon is “Mapun”. He also reported that the name of Doria’s Tree Kangaroo *Dendrolagus notatus* Matschie, 1916 that still survives on Mount Hagen was “Andieyap” (*pers. comm.* 24 August 2010).

On 16 June 2010 in the early morning two pademelons were observed under the feeder table at Kumul Lodge. Tour participant Paul Davis had a compact camera with a small built in flash and took several photographs in the pre-dawn gloom. The best of these photographs are included here (Figs 2–3). The photographs were sent to Drs Tim Flannery and Kris Helgen for their comments. They confirmed the identity

as Calaby’s Pademelon based on their field experience and voucher specimens held in scientific collections. Calaby’s Pademelon is distinguished from other New Guinean *Thylogale* by its small size, belly fur tipped yellow, and a pale stripe on the hip. In the photographs one can discern a small hip stripe, the yellowish tint to the belly fur and the relatively small size.

This was my only sighting of these typically shy forest wallabies. On another occasion Max Mal made an observation of the distinctive dark droppings of the pademelons in the grassland along the edge of thick forest adjoining his vegetable gardens at his residence below Kumul Lodge. His residence is close to the Highlands Highway police checkpoint gate.

On 12 September 2014 a lodge visitor reported seeing a single small forest wallaby in the lodge grounds. This was the last known report of the species in the area. Inquiries were made with local landholder Max Mal in 2019 and he suggested the species had died out locally, due to the presence of domestic dogs that had increased in numbers.

Calaby’s Pademelon seems particularly vulnerable to predation by dogs and humans. Flannery (1995) reports Calaby’s Pademelon is hunted effectively with dogs. It is likely that the species has become extinct on Mount Wilhelm within living memory. He considered it likely that the two known populations of Calaby’s Pademelon are relicts of a species that was once widespread in subalpine habitats. It is considered to be an endangered species (Flannery, 1995).

There is also evidence “that two species of *Thylogale* originally inhabiting extensive alpine grassland in Irian Jaya became extinct in the Holocene” coinciding with the arrival of Melanesian people and their dogs (Flannery, 1995:158). Other species of *Thylogale* have disappeared due to the predation of feral canids. In mainland Australia the Red-bellied Pademelon, *Thylogale billardieri* Desmarest, 1822, was historically abundant in the coastal south-east of the state of Victoria. It was last reported in the early 1930’s (Lewis, 1931). In this case Red Fox, *Vulpes vulpes* (Linnaeus, 1758), has been an important factor in the extinction of mainland Red-bellied Pademelon populations as the species remains common in Tasmania where the Red Fox is not established (Menkhorst, 1995).



Figure 2–3. Calaby's Pademelon at Kumul Lodge 16 June 2010. (Photographs by Paul Davis).



Figure 4. Speckled Dasyure attracted to the bird-feeder table in September 2009. (Photograph by Daphne Gemmill).

It is also possible that the severe drought of 2015 that led to extensive fires in the grasslands may have hastened the decline of Calaby's Pademelon in the Kumul Lodge area. The grassland fires would have concentrated remaining populations at a time that dog numbers were also increasing—a consequence of a new police checkpoint on the highway and an associated increase in the local human population. Dogs—*Canis familiaris* Linnaeus, 1758—were present in the lodge gardens occasionally. One was recorded at night on the 7 August 2006 that was strikingly similar to the New Guinea Wild Dog (*C. f. novaehiberniae* Lesson, 1827, with a golden coat, upswept tail and white stockings (Dwyer *et al.*, 2021). It is, however, most likely that it was a wandering domestic dog. The dumping of rubbish in pits in the lodge grounds is also likely to have attracted village dogs for scavenging.

Whilst Calaby's Pademelon seems to have become locally extinct in the vicinity of Kumul Lodge it is quite possible the species survives on Mount Hagen.

Mammal observations

Black-tailed Antechinus *Murexia melanurus* (Thomas, 1899). A total of five observations were made in the months of June, July, and September. September was the peak month with three sightings. All sightings occurred during the day, only single individuals were sighted, all were climbing on the sides of trees or stumps and man-made structures. This species does not appear to have been previously reported in Enga Province.

Speckled Dasyure *Neophascogale lorentzii* (Jentink, 1911). A total of 12 observations were made in the months of June, August, September, and October. August and September were the peak months for sightings (5 sightings in each

month). All were seen during the day, often climbing on the sides of trees, and were regularly attracted to the area near the bird-feeding table (Fig. 4) where one was observed extracting insect larvae hidden in thick moss. The species was the most frequently encountered mammal at this location. It attracted the attention of birds like the Mountain Mouse-warbler *Crateroscelis robusta*—the bird behaved in an agitated fashion indicating that the Speckled Dasyure is likely a predator of their eggs and chicks. The only previous record for Enga Province is a photograph by P. Woolley and D. Walsh taken at Mount Paiam, a peak overlooking Porgera (Flannery, 1995; Helgen, 2007).

Raffray's Bandicoot *Peroryctes raffrayana* (Milne-Edwards, 1878). One good sighting only, which occurred at night on 8 August 2006, when a single bandicoot was seen on the lawn area in front of the bird-feeder. Helgen (2007) documents the first records for this species in Enga Province. It is also notable that this species has been encountered several times by the author at night on the forest edge at Rondon Ridge lodge (near Mount Hagen) where it appears to be locally common.

Calaby's Pademelon *Thylogale calabyi* Flannery, 1992. One sighting only that occurred at dawn on 16 June 2010. Two other “heard-only” records of the distinctive thudding of unseen hopping individuals. A single pademelon reported independently by a lodge visitor on 12 September 2014.

Silky Cuscus *Phalanger sericeus*, Thomas, 1907, or Mountain Cuscus, *Phalanger carmelitae* Thomas, 1898. It is difficult to distinguish between these two species but it was considered most likely to have been Silky Cuscus because of the appearance of a shorter tail with reduced white tail-tip (when present). Three records: (a) a single sighting “at night” (pre-dawn on 24 August 2010) of an individual possibly on



Figure 5. A fresh specimen of Long-fingered Triok being offered for sale to the author at Kumul Lodge on 5 August 2016. (Photograph by Gordon Tans).



Figure 6. Masked Ringtail at Kumul Lodge on 20 September 2019. (Photograph by Dion Hobcroft).



Figure 7. Black-tailed Giant Rat attracted to the bird-feeding table at night in August 2016. This individual has a scarred face. (Photograph by Dion Hobcroft).

its way to day-roost under fronds of a large *Pandanus*; (b) a single “at night” sighting on 25 August 2011—individual with a short white tail-tip; and (c) a single “at night” sighting on 30 August 2013. The Enga name for a “black” cuscus was recorded by Max Mal as “Maul” whilst a “brown” cuscus is recorded as “Tanakai”. Interestingly, Helgen (2007) reports that the name “Tanakai” is used by Ibele hunters in the Kaijende Highlands of Enga Province for the Coppery Ringtail *Pseudochirops cupreus* (Thomas, 1897). Even though undocumented, it is possible that this latter species does occur at Kumul Lodge. Of note: both species of cuscus are reported from Enga Province by Helgen (2007).

Long-fingered Triok *Dactylonax palpator* Milne-Edwards, 1888. Not seen by author but reported by Max Mal who caught one in a mossy nest in a tree hollow, the tree lying on the ground, on track that leads to his house below the lodge in 2015. It was also reported by one other staff member who saw one walking across the driveway of Kumul Lodge near the lower gate: the observer described a distinctly black and white striped possum. A specimen being offered for sale by a hunter was examined at the bottom of the driveway where Kumul Lodge meets the Highland Highway on 5 August 2016 (Fig. 5) but the exact provenance of the specimen is not known. This striped possum is widespread in New Guinea’s

montane forests between 850–3000 m. Helgen (2007) documents a specimen from Lake Tawa, Enga Province.

Pygmy Ringtail *Pseudochirulus mayeri* (Rothschild & Dollman, 1932). Single record on 11 September 2017 of a single, small, mouse-brown, ringtail about 150 mm SVL with half furred pale pink tail seen well at night actively foraging in a tree in the forest interior at approximately 2030 hrs. Previous records from Enga province include jaws of this species recovered from owl-pellet deposits adjacent to the Porgera Reservoir and an adult female specimen collected by P. Woolley on 6 June 1985 from the same location (Helgen, 2007).

Masked Ringtail *Pseudochirulus larvatus* (Forster & Rothschild, 1911). Single record on 20 September 2019—spot-lit in a tree at approximately 2100 hrs behind the feeding table in denser, forest-edge, secondary growth of, predominantly, scrambling bamboo. The animal was undisturbed by the spotlight, making it possible to retrieve a camera and obtain photographs—Fig. 6. Although the species is reported to be familiar to Kaijende hunters (Helgen, 2007) the only previous specimen record for Enga Province was collected by P. Woolley in 1985 from moss forest at 2400 m on Mt Waruwari.

Long-footed Tree Mouse *Lorentzimys nouhuysi* Jentink, 1911. A single record of an individual spot-lit at night in the forest interior on 25 August 2011. It was identified by its long, thin, pink, non-prehensile tail as it was observed climbing on thin vines with much agility. This species has not been previously reported in Enga Province. The similar Rummler’s Mouse, *Coccymys rummleri* Tate & Archbold, 1941, differs in having a grey tail with contrasting white tip (Flannery, 1995).

Black-tailed Giant Rat *Uromys anak* Thomas, 1907. Six observations were made of single individuals, and occasionally pairs, foraging on the bird-feeder table at night (Fig. 7). They were distinguished by their entirely black tails, large size, and largely blackish coloration. Sightings were made in June, August, and October but there have been no sightings since 2016. The Enga name for a Black-tailed Giant Rat is reported to be “Angar”. Helgen (2007) notes: “this large scansorial rodent is often common in forested areas

above 2000 m elevation throughout the central cordillera and the Huon peninsula” and documents two previous records from Enga Province.

Small Spiny Rat *Rattus steini* Rummler, 1935. A single individual found road-killed along the driveway at Kumul Lodge on 12 August 2007 was examined and measured for identification purposes. This common garden rat does not appear to have been previously reported from Enga province (Helgen, 2007).

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