

# First camera-trap evidence of the Western Mountain Coati *Nasuella olivacea* in San Martin, Peru

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## Abstract

The Western Mountain Coati *Nasuella olivacea* is one of the least studied small carnivores in Peru. While its distribution is thought to extend well into the interior of Peru, it remains largely unknown. Between September and November of 2018, we obtained camera-trap photographs of *N. olivacea* from the province of Mariscal Cáceres in the San Martin Region of north-central Peru. These are new locality records for *N. olivacea*, extending the known geographical range of live specimens approximately 318 km southward.

**Keywords:** camera-trapping, conservation concession, San Martin, Alto Huayabamba

## Introduction

The Western Mountain Coati *Nasuella olivacea* is scarcely studied and, consequently, its distribution is not well defined throughout South America (Helgen *et al.* 2009). It is believed to be present in forested habitats above 1300 m and paramos, including both disturbed and pristine areas (González-Maya *et al.* 2016). Various authors have studied this Coati in Colombia and Ecuador (Balaguera-Reina *et al.* 2009, Helgen *et al.* 2009), and its distribution has been predicted to extend to northern Peru (Balaguera-Reina *et al.* 2009; Cossíos *et al.* 2012; Helgen *et al.* 2009; Pacheco *et al.* 2011). Evidence of live specimens have only been documented in the far north of the country (Mena & Yagui 2019). The only evidence of Western Mountain Coatis in Southern Peru is from two museum specimens from the regions of Cusco and Apurímac (Pacheco *et al.* 2007).

The Concession for Conservation Alto Huayabamba (CCAH) is in the provinces of Mariscal Cáceres and Huallaga in San Martin, Peru. The 144,000-hectare concession is partially located in the Yungas ecoregion, which extends from 800 to 3600 m asl, on the eastern flank of the Andes Mountains and is characterised by dense vegetation on extremely steep slopes and a particularly humid climate (CDC-UNALM & TNC 2006). This is a priority area for the conservation of endemic species because of the presence of 10 of the 18 ecosystems identified for the Peruvian Yungas (Ministerio de Agricultura y Riego 2013).

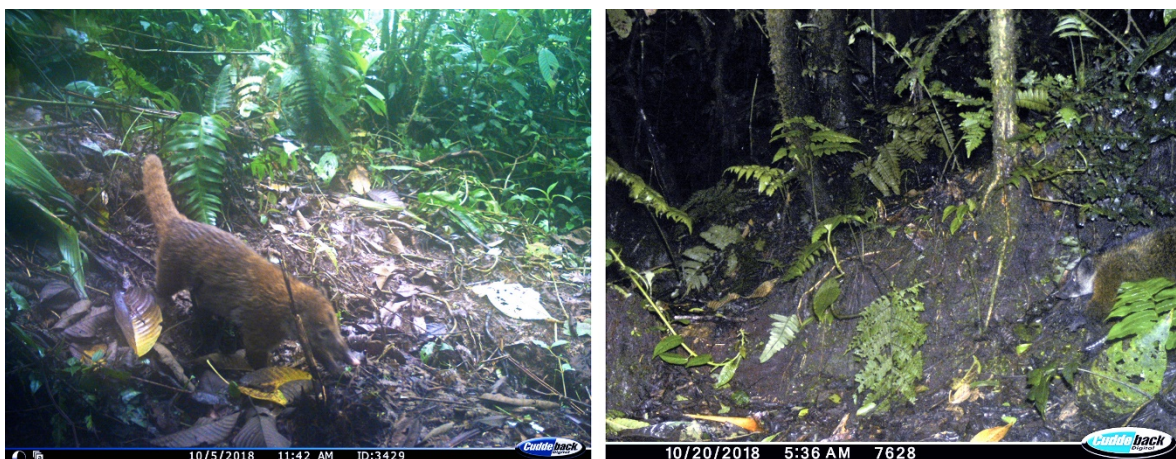
## Methods

Forty-four camera-traps (Cuddeback model 1347) were installed between 1831 and 2672 m asl in the CCAH from September to November of 2018. The cameras were placed on trails and other points of interest in single stations with a linear distance of 500 m between stations. Researchers collected GPS coordinates, land cover, canopy cover, tree species, distance from water and other covariates at the time of installation. Cameras were programmed for continuous capture, with two photographs taken with each detection, and 30-second intervals between detections. The cameras remained in place for more than seven weeks, accumulating 2319 trap-nights with 219 wildlife records. Photographs were reviewed by trained researchers, who used relevant literature to identify species (Emmons & Feer 1997; Pacheco *et al.* 2009; SERFOR 2018).

## Results and discussion

During this sampling we detected 17 species from eight orders, 12 families and 16 genera; six of them being carnivores. *Nasuella olivacea* was detected in three photographs from two different stations, at elevations of 2118 to 2182 m asl (Table 1; Fig. 1).

*Nasuella olivacea* has been reported to occur in other countries, like Colombia and Ecuador, in both conserved and disturbed habitats (Balaguera *et al.* 2009; Helgen *et al.* 2009; Fig. 2). Helgen *et al.* (2009) used geographic range modelling to predict the occurrence of *N. olivacea* in the northern Andes in Peru. This was confirmed by the presence of live specimens reported in the northern region of the department of Cajamarca (Mena & Yagui 2019). However, museum specimens collected in the departments of Cusco and Apurimac (Pacheco *et al.* 2007), suggest the possibility that they occur much further south.



**Fig. 1.** Western Mountain Coati *Nasuella olivacea* camera-trapped at (left) 11h42, 5 October 2018, in a patch of primary forest and (right) at 05h36, 20 October, in secondary forest in Conservation Concession Alto Huayamamba, Peru. As is characteristic of this species, it presents apparently coarse fur with olive-brown tones and a long, ringed tail.

**Table 1.** Records of Western Mountain Coati *Nasuella olivacea* at the study site. Exact location records of the species from Mena & Yagui (2020) and Pacheco *et al.* (2007) are not available.

Camera station	Latitude	Longitude	Elevation	Land cover
26	7°19'43.428"S	77°26'57.228"W	2182	Secondary forest
32	7°20'35.884"S	77°26'41.568"W	2118	Primary forest



**Fig. 2.** Distribution and records of Western Mountain Coati *Nasuella olivacea* in Peru.

To the best of our knowledge, this is the first photographic evidence of the Western Mountain Coati in the department of San Martín, and the first evidence of live individuals in the deep interior of the country. These records can help refine the current range map of the species and thus influence Red Lists and conservation priorities. We strongly recommend further camera-trapping studies to increase our understanding of this Coati's geographical range (de Bondi *et al.* 2010) and continued collection of genetic samples from specimens from Peru to investigate population connectivity and barriers to it (Ruiz-García *et al.* 2021). This would also help to increase scientific knowledge of Peru's Yungas region and could inform plans and action on conserving the connectivity of Andean forests.

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