

Observations of Striped Hog-nosed Skunk *Conepatus semistriatus* on the eastern flank of the Eastern Cordillera of Colombia

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Abstract

The Striped Hog-nosed Skunk *Conepatus semistriatus* is the only member of the family Mephitidae in Colombia and has a limited number of records in the country. In this paper, we present new records of Striped Hog-nosed Skunk from the eastern flank of the Eastern Cordillera of Colombia, Orinoco River Basin. Striped Hog-nosed Skunk was recorded by camera-traps during research on the ecology of the Andean White-eared Opossum *Didelphis pernigra* between December 2018 and January 2019. The camera-traps were placed between two farms. We showed photographs of the Skunk to local farmers and obtained additional records. Striped Hog-nosed Skunk has been previously reported in rural environments, which suggests that the species is relatively tolerant of human activities.

Keywords: Andes, geographical distribution, Orinoco River Basin, skunks

Observaciones del mapurito *Conepatus semistriatus* en el flanco oriental de la Cordillera Oriental de Colombia

El mapurito *Conepatus semistriatus* es el único miembro de la familia Mephitidae en Colombia y tiene un número limitado de registros en el país. En este trabajo, presentamos nuevos registros de *C. semistriatus* en Colombia, en el flanco oriental de la Cordillera Oriental, cuenca del río Orinoco, Departamento del Meta; aproximadamente 2100 m snm. Se grabó un mapurito con una cámara trampa como parte de un estudio sobre la ecología de la chucha de oreja blanca *Didelphis pernigra* desarrollado entre diciembre de 2018 y enero de 2019. Las trampas se colocaron entre dos fincas. Mostramos fotografías del mapurito a campesinos locales y obtuvimos registros adicionales. El mapurito ha sido reportado previamente en ambientes rurales, lo que sugiere que esta especie es relativamente tolerante con las actividades humanas.

Palabras clave: Andes, distribución geográfica, mapurito, región orinoquense

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Introduction

The Striped Hog-nosed Skunk *Conepatus semistriatus* (Boddaert 1785) is distributed in Belize, Brazil, Colombia, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru and Venezuela (Emmons & Feer 1997, Wozencraft 2005, Esser *et al.* 2012). The only member of the family Mephitidae in Colombia, it has been recorded between 0 and 3100 m asl. There are a limited number of records in the Andean and Caribbean regions of Colombia,

as well as the Sierra Nevada de Santa Marta and the Serranía de la Macarena (Solari *et al.* 2013, Andrade-Ponce *et al.* 2016, Diaz-Pulido *et al.* 2017). It has been recorded in the following departments in Colombia: Antioquia, Cesar, Cundinamarca, La Guajira, Magdalena, Meta, Nariño, Norte de Santander and Santander (Meza-Joya *et al.* 2018). Here we present new records for the species from the eastern flank of the Eastern Cordillera of Colombia from the Department of Meta in the Orinoco River Basin.

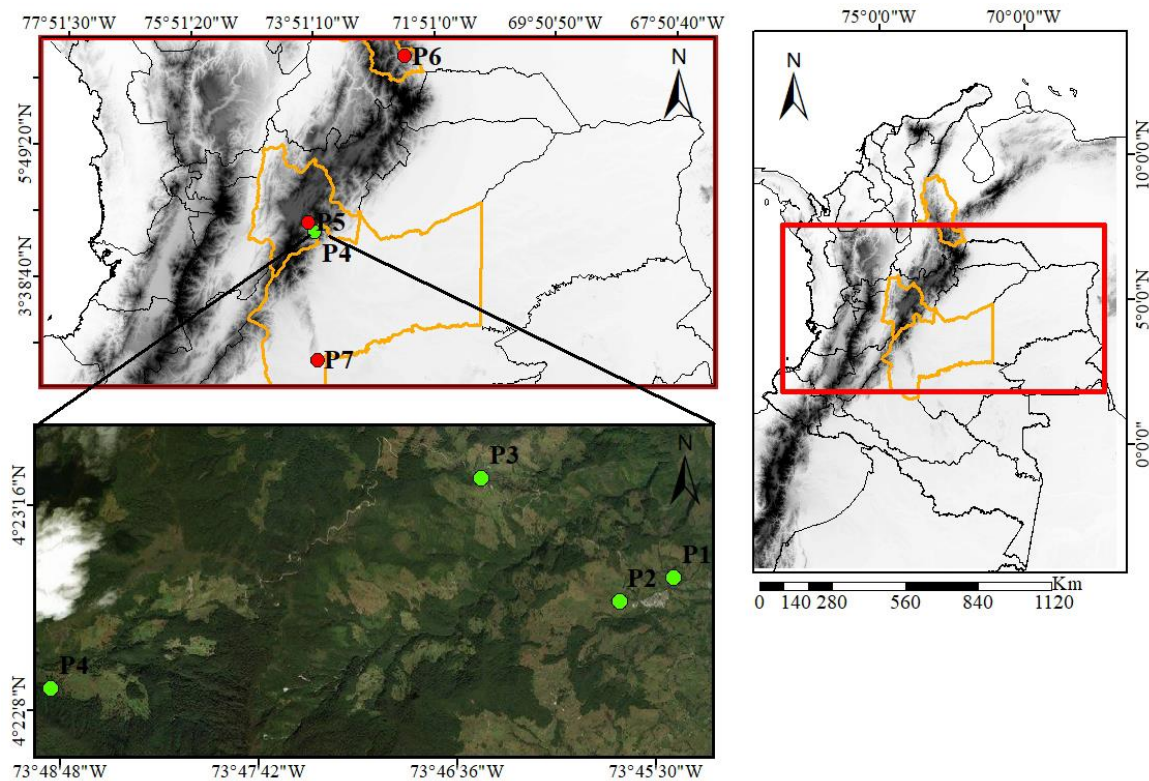


Fig. 1. Locations of Striped Hog-nosed Skunk *Conepatus semistriatus* observations on the eastern slope of the Eastern Cordillera of Colombia. The maps on the left side show details of the location of El Calvario, Department of Meta, Colombia. The green dots (P1-P4) are those reported here; the red dots (P5-P6) are from previous studies. P5 corresponds to Choachí, Cundinamarca (Meza-Joya *et al.* 2018); P6 corresponds to Tamá National Park north of Santander (Cáceres-Martínez *et al.* 2016, Meza-Joya *et al.* 2018). P7 is in Sierra de la Macarena (Díaz-Pulido *et al.* 2017). P1 was recorded using a camera-trap; P2-P4 were obtained from interviews with local farmers. P2 was recorded on a livestock farm; P3 and P4 were recorded on the Quetame–El Calvario route. The aerial image at the bottom is from Google Earth, 9 January 2019.

Camera-trap records

Striped Hog-nosed Skunk was recorded in the following locality: Colombia, Department of Meta, Municipality El Calvario, Corregimiento San Francisco; 4°22' 51.94" N –73°45' 24.48" W, approximately 2100 m asl. The species was recorded by a camera-trap during a survey targeting the Andean White-eared Opossum *Didelphis pernigra*. The camera-traps were set between December 2018 and January 2019 in a rural landscape (Fig. 1). Eight sampling

stations were used, each with one camera-trap for 17 nights. One camera-trap malfunctioned during the survey; the total survey effort was 120 effective camera-traps-nights. Distance between stations was between 45 m and 50 m. At each station, we used sardines and a sugar-water mixture as bait to attract Andean White-eared Opossums. The camera-traps were set near the boundaries between two farms; the first one had crops of beans *Phaseolus vulgaris*, whereas in the second there were domestic pigs and chickens, as well as crops of *P. vulgaris* and imperial grass *Axonopus scoparius*. According to local farmers, the vegetation on the farms was partly the result of government-led reforestation efforts in 2010. The reforested area had relatively tall trees, 20-30 m, and included two non-native species, Chinese ash *Fraxinus chinensis* and *Eucalyptus* spp., as well as *Ficus* sp.

On 17 January 2018, at 05h18, a skunk was camera-trapped once in an area with native and exotic vegetation between the two farms. It was not photographed interacting with the bait near the camera-trap. The skunk had the typical black body and two dorsal white lines joined at the neck (Emmons & Feer 1997). The individual lacked the terminal bushy white portion of the tail; this may have been lost to a predator (Fig. 2). During the camera-trapping, Andean White-eared Opossums were recorded by all the camera-traps. In addition, while walking the site to retrieve the data from the cameras, we frequently sighted Red-tailed Squirrel *Syntheosciurus granatensis*.



Fig. 2. Striped Hog-nosed Skunk *Conepatus semistriatus* camera-trapped at 05h18 on 17 January 2018 at San Francisco, El Calvario, Meta, Colombia; note the absence of a white, bushy portion at the end of the tail (P1 in Fig. 1). See the supplementary video file.

Interview records

After recording the skunk using camera-traps, we interviewed 15 local residents. Respondents were shown photographs of Striped Hog-nosed Skunk and asked questions about its status in the area. All of the interviewed residents mentioned that the species was present in the area and indicated that it is common to observe the Skunk early in the morning, at around 05h00 to 06h00. The interviews mentioned having observed a Skunk with a tail with a white and bushy part, suggesting that there was more than one individual at the study site. In agreement with these statements, we received additional reports by local farmers about three different sightings. One person indicated the presence of a Skunk on a cattle farm around October in 2017; approximate coordinates 4°22' 43.91" N – 73°45' 42.18" W (Fig. 1, P2).



Fig. 3. A couple of Striped Hog-nosed Skunks *Conepatus semistriatus* video-recorded at about 19h00 on 25 January 2020 on the Quetame–El Calvario road, El Calvario, Meta, Colombia (P3 in Fig. 3). See the supplementary video file.

Two additional sightings by local farmers from the San Francisco–Quetame road (4° 23'24.7" N – 73°46'27.5" W and 4°22'14.9" N – 73°48'51.0" W, respectively), in December 2019 and on 25 January 2020. The sighting made on January 2020 occurred at approximately 19h00, and the local farmers took a video of a couple of Skunks near the location of the camera-trap record (Fig. 3). There was no photographic record or video for the sighting in 2019.

Discussion

Several authors suggest that Striped Hog-nosed Skunk is mainly found in either open areas or ecotones between savanna and forest and that it regularly uses forests as refuges but avoids large forest patches (Linares 1998, Kasper *et al.* 2009, Esser *et al.* 2012). In addition, Striped Hog-nosed Skunk has been found in human-impacted environments such as the one presented here (Araúz 2005, Cavalcanti *et al.* 2014, González-Maya *et al.* 2017). In the Emas Natural Park in Brazil, Striped Hog-nosed Skunk has been recorded in the visitors and office

areas (Cavalcanti *et al.* 2014). The species has been found in six rural localities of Panama (Araúz 2005). Those localities included forests or forest edges surrounded by grasslands or areas opened for agriculture. Furthermore, this species has been previously recorded in rural areas in the Colombian Andes (Meza-Joya *et al.* 2018) and one specimen was found less than 100 m from a house and approximately 1.1 km from a main road in Bogotá, the capital of Colombia and its largest city (González-Maya *et al.* 2017). In addition, this Skunk appears to use roads (Fernandez-Rodriguez & Ramirez-Chaves 2015, Machado *et al.* 2015). Altogether, the evidence suggests that Striped Hog-nosed Skunk is tolerant of human-induced modifications to landscapes. The limited number of museum specimens of Striped Hog-nosed Skunk from Colombia may suggest that this species is not abundant in the country. However, in light of the species' tolerance of human-modified habitats and relatively large altitudinal range, several alternative reasons are plausible: the skunk has not been the target of collection efforts on account of the unpleasant odour emitted by this species; appropriate traps have not been used to obtain specimens; survey or trapping efforts in this type of unprotected, human-dominated habitat has been lower than in forest blocks of natural habitat that support species of higher conservation concern.

Our findings, and the other additional confirmed records of Striped Hog-nosed Skunk on the eastern slope of the Eastern Cordillera (Diaz-Pulido *et al.* 2017, Meza-Joya *et al.* 2018), suggest that this skunk occurs throughout the flank of the Cordillera facing the Colombian eastern llanos. This is in line with the predictions of a distribution model for Striped Hog-nosed Skunk, which predicts its presence along the Andean Eastern Cordillera of Colombia, as well as in most of the Caribbean region (Meza-Joya *et al.* 2018). However, the Andean region has suffered significant changes due to human activity, since it is the most populated region in Colombia (Etter & van Wyngaarden 2000, Etter *et al.* 2006). The situation is evident on the eastern slope of the Eastern Cordillera, where deforestation and habitat fragmentation due to rural activities such as agriculture, cattle ranching and the introduction of exotic vegetation has led to the native forests to be considered as endangered ecosystems (Ramírez *et al.* 2011, Etter *et al.* 2017). Additional studies should focus on assessing the Striped Hog-nosed Skunk's actual tolerance to human perturbations on landscapes and potential habitat limitations, so that distribution models can be corrected and refined.

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