

SHORT COMMUNICATION

First confirmed record of the Striped Hog-nosed Skunk *Conepatus semistriatus* from peri-urban Bogotá, Colombia

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Abstract.

The Striped Hog-nosed Skunk *Conepatus semistriatus* is widespread Neotropical carnivore species, with a disjunct distribution from Mexico to Brazil. Poorly known across its range, in Colombia the species is mostly known only from scarce and sporadic records, but with no information for most aspects of its ecology or conservation status. Here we present the first record of the species for a peri-urban area of Bogotá, capital city of Colombia. Our record is the first for a large city across its range, located outside previous range estimates and confirming its presence for the tutelar mountains of the city. Although this record does not expand significantly the range of the species, it represents an important addition to the fauna of Bogotá, highlighting the importance of improving conservation measures for this important forest patch, and thus ecological integrity, in one of the largest cities in the Neotropics.

Resumen.

El Mapurito *Conepatus semistriatus* es una especie de carnívoro Neotropical de distribución amplia y disyunta desde México hasta Brasil. Poco conocida a través de su distribución, en Colombia se conoce principalmente sólo de registros escasos y esporádicos, pero sin información para la mayoría de aspectos de su ecología y estado de conservación. Se presenta el primer registro de la especie para un área peri-urbana de Bogotá, capital de Colombia. El registro es el primero para una ciudad grande a lo largo de su distribución, y se ubica fuera de las distribuciones previas estimadas lo que confirma su presencia para los cerros tutelares de la ciudad. A pesar de que el registro no expande significativamente la distribución de la especie, representa una adición importante a la fauna de Bogotá, resaltando la importancia de mejorar las medidas de conservación de este importante parche de bosque, y por ende su integralidad ecológica, en una de las ciudades más grandes del Neotrópico.

Keywords: Cundinamarca, Mephitidae, Neotropics, urban wildlife.

The Striped Hog-nosed Skunk *Conepatus semistriatus* is a widespread Neotropical small carnivore species, distributed from Mexico, continuously down to Peru and Venezuela and a disjunct population in Brazil (Cuarón *et al.* 2016). Despite its large range, and that is considered locally common, most aspects of its ecology and distribution are still unknown (González-Maya *et al.* 2011; Kasper *et al.* 2009), including some aspects of its taxonomy and biogeography (Kasper *et al.* 2009).

In Colombia, the species has also a widespread distribution, been recorded along the Andes, the Inter-Andean valleys, Caribbean, Orinoco and Sierra Nevada de Santa Marta regions, between 0 and 3,100 m asl (Fernández-Rodríguez & Ramírez-Chaves 2015), including the type locality in the North-east region of the country (Pamplona, Norte de Santander; Wozencraft 2005, Fernández-Rodríguez & Ramírez-Chaves 2015). Most aspects

of the species in the country are still unknown (Andrade-Ponce *et al.* 2016; Fernández-Rodríguez & Ramírez-Chaves 2015), and it has been previously prioritized for distribution and biogeographic study (González-Maya *et al.* 2011). In terms of political distribution, the species has been reported to occur in Antioquia, Cesar, Cundinamarca, Magdalena, Nariño and Norte de Santander departments (Solari *et al.* 2013), but with few supporting evidence for such statement; recent accounts however, propose the distribution also for La Guajira, Magdalena and Córdoba departments (Andrade-Ponce *et al.* 2016).

Despite the scarce information, the species is known to occupy both natural and intervened habitats (Cuarón *et al.* 2016) and exploit exotic food resources (Cavalcanti *et al.* 2014), been considered to tolerate high proximity to human settlements and activities (Kasper *et al.* 2009), but to our knowledge, with no records on large cities in the Neotropical region. Here we present the first records of the Striped Hog-nosed Skunk in the peri-urban areas of Bogotá, capital city of Colombia.

The Reserva Forestal Protectora Bosque Oriental de Bogotá (Bogotá's Eastern Forest Protection Forestry Reserve: RFPBOB) is located on a small mountain range along the Eastern limit of the urban portion of the city's territory, covering approximately 14,000 ha, and ranging between 2,500 and 3,600 m asl, been managed by the city's government in conjunction with the Regional Environmental Authority of Cundinamarca (CAR; CAR & CI 2009). The RFPBOB is the largest and closest continuous peri-urban forest patch (Cerros Orientales) to Bogotá, considered the tutelary mountains and main "lung" of the city. Bogotá, additional to be the capital city of the country, is also a ~10 million people mega urban city, been the most important commercial, administrative, financial and political centre in the country.

Between February 2016 and November 2016, a 49 camera-trap (Bushnell Trophy Cam and Cuddeback) stations' array was established along the northern limits of the RFPBOB. Surveys were aimed to estimate occupancy of medium and large sized mammals along the most important peri-urban forest of the city. Camera-trap stations were located along a regular 1 km² grid, covering the entire portion of the reserve, between Bogotá's 7th avenue and the rural areas of La Calera municipality. In order to assess the context and highlight the importance of our record, we compared its location to the historical records of the species in the country (via GBIF; Global Biodiversity Information Facility 2016) and the proposed distribution polygon by Cuarón *et al.* (2016).

With a total sampling effort of 13,965 camera-trap days, we obtained a single record of *Conepatus semistriatus* on September 7, 2016 at 21h05 (Figure 1). The record was obtained on a natural forest, approximately at 1.1 km from the main city's avenue (7th Av.) and 85.5 m from the nearest house at 04°49'57.60''N and 74°01'08.36''W at 2,830 m asl (Figure 2). Previous historical records, based on specimens in collections available through GBIF or direct inspection at natural history collections and with complete locality

description (Figure 2), indicate the confirmed presence of the species in six departments, with four previous records for Cundinamarca department: two for Choachí municipality (Museum of Comparative Zoology – Harvard University: MCZ 27218 and MCZ 27219; approximately 17 km from Bogotá and 35 km from our record), one for Fúquene (Instituto de Ciencias Naturales: ICN 283), approximately 74 km from Bogotá and 66 km from our record, and one with locality in Bogotá (National Museum of Victoria: NMV-C 29994) but with no date, collector or any other related information. Other close records were reported by Liévano Latorre & López Arévalo (2014) for a locality approximately 14,75 km from our study site in Tabio and by Muñoz-Saba *et al.* (2000) from Ubaté, approximately 57 km from our record. Regarding the distribution proposed by Cuarón *et al.* (2016), our record is located ~95 km from the nearest edge of the estimated range.



Figure 1. First record of the Striped Hog-nosed Skunk, *Conepatus semistriatus*, from a peri-urban area of Bogotá, Colombia.

Our record represents the first confirmed for the urban/peri-urban area of the largest and capital city in the country, and highlight the importance of the RFPBOB for Bogotá. However, the low capture frequency during our survey and its absence on previous surveys by our team and other studies (CAR & CI 2009), remark the potential rarity of the species in the area. RFPBOB is highly influenced by the city mostly in terms of pressures derived

from urban expansion, hunting, pollution and feral and domestic animals, which has been previously identified as the most important threats for mammals on the surrounding areas of the city (obs. pers.). Furthermore, the Reserve is almost completely isolated from surrounding forests, being completely embedded on a matrix of agricultural, urban and industrial activities, posing a significant challenge for the conservation of Bogotá's mammals, and especially for carnivores.

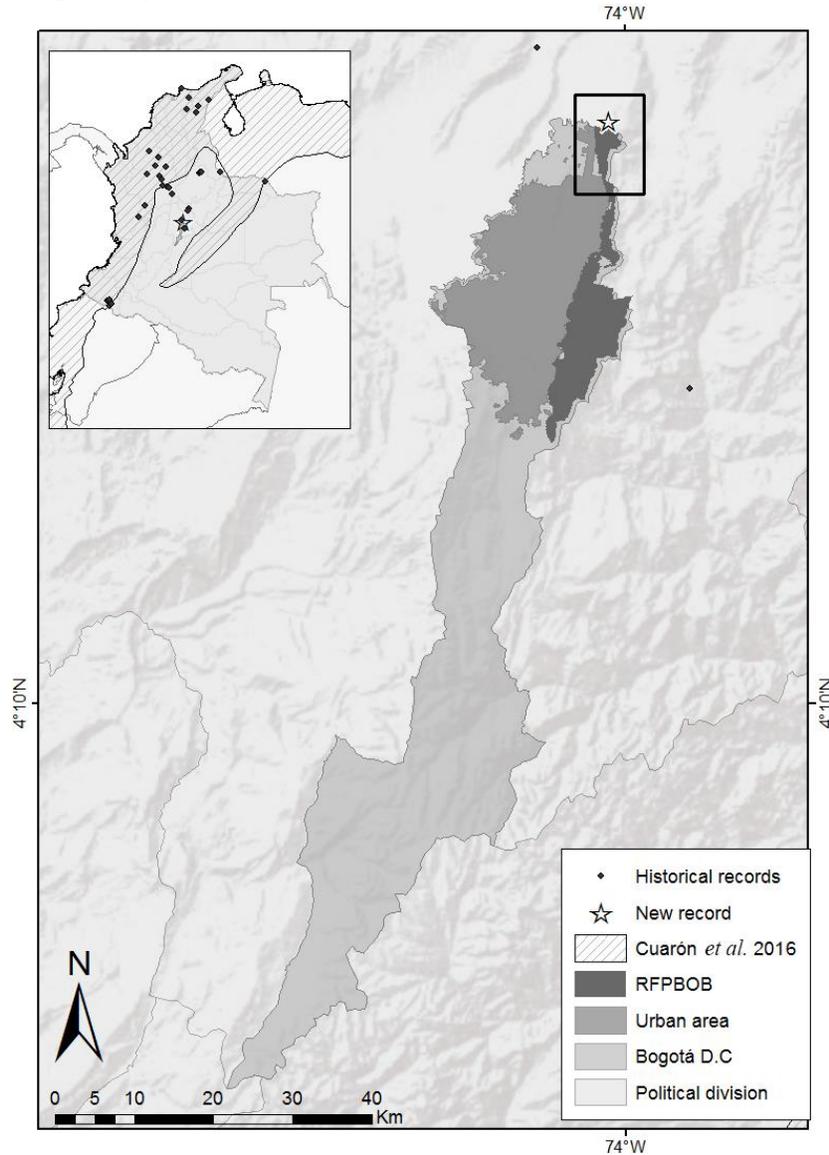


Figure 2. Location of the first record of the Striped Hog-nosed Skunk, *Conepatus semistriatus*, from a peri-urban area of Bogotá, Colombia, including proposed distribution from Cuarón *et al.* 2016 and previous (historical) records.

Morphologically, our record is similar to those from Northern Colombia (e.g. Instituto Alexander von Humboldt - IAvH 1970), and Panama (Esser *et al.* 2012), whereas, specimens from the Andes of southwestern Colombia (e.g. Universidad del Valle: UV 8103, UV 13287) and central and northern Ecuador (e.g. Naturhistoriska riksmuseet: NRM

A581107, NRM A590306) are slightly larger and have longer hair, reason why a taxonomic review of Colombian *Conepatus* has been suggested (Ramírez-Chaves & Noguera-Urbano 2010, Fernández-Rodríguez & Ramírez-Chaves 2015).

Our record does not expand the known distribution for the species in the country, although could expand the distribution proposed by Cuarón *et al.* (2016), but represents a significant addition to the peri-urban fauna of one of the largest cities in the Neotropics. This addition highlights not only the importance of the surrounding forests of Bogotá, especially RFPBOB, but also the need for urgent conservation measures of this peri-urban reserve, especially in terms of its functional connectivity with other forest patches, and ideally, the re-connection with protected areas at the national level (e.g., Chingaza National Park). It is important to highlight the critical importance of the Thomas van der Hammen Forestry Reserve, as it is the only connection for the RFPBOB with the Bogotá river zone and other forest patches on the Western side of the city and into the larger Bogotá Sabana (Bogotá's main ecological structure); currently under severe threat for urbanization promoted by the current city's administration. Conservation of these areas seems warranted in order to retain healthy and functional ecosystems that improve ecological integrity as the basis for human wellbeing in growing, yet demanding and challenging developing cities such as Bogotá.

Acknowledgements

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