

A record of Striped Hog-nosed Skunk *Conepatus semistriatus* in central Panama, between two known sub-ranges

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Abstract

Striped Hog-nosed Skunk *Conepatus semistriatus* was camera-trapped in central Panama. The photographs, taken in a densely forested area, probably belong to a single, wandering, individual. These photographs represent the easternmost record of *C. semistriatus* in Central America and confirm an earlier, unvouchered, report that its distribution in Panama is larger than previously thought. The record is in the centre of the 700-km wide gap between two sub-ranges, suggesting that the species has a continuous distribution across Central and northern South America.

Keywords: Barro Colorado Nature Monument, camera-trapping, extension of known range, Mephitidae

Registro del Zorrillo *Conepatus semistriatus* entre dos subáreas de distribución conocidas en el centro de Panamá

Resumen

El Zorrillo o Gato Cañero *Conepatus semistriatus* fue fotografiado por cámaras trampa en el centro de Panamá. Las fotografías fueron tomadas en una zona densamente boscosa y pertenecen probablemente a un solo individuo errante. Un reporte anterior indicó que la distribución de la especie en Panamá es más amplia de lo que se pensaba, pero esta se mantuvo sin fotografías o espécimen de respaldo. Nuestras fotografías representan el registro más oriental de *C. semistriatus* en Centroamérica y confirman la extensión de su distribución como se había propuesto anteriormente. Además, el registro se localiza en medio de una zona de 700 km que separa dos conocidas subáreas de distribución, lo que sugiere que la especie tiene una distribución continua a través de Centroamérica y el norte de Suramérica.

Palabras clave: Monumento Natural de Barro Colorado, foto-trampeo, extensión de distribución conocida, Mephitidae

Striped Hog-nosed Skunk *Conepatus semistriatus* is a small carnivore known from three apparently disjunct regions in the Neotropics: from southern Mexico to the western border of Panama; along the South American coastline from Peru to Venezuela; and in an isolated area in eastern Brazil (Fig. 1). In addition, there have been unvouchered records of the species occurring in central Panama (Araúz 2005). Being both nocturnal and solitary, little is known about the basic ecology and behaviour of Central and South American *Conepatus* species (Kasper *et al.* 2009). Hog-nosed skunks are found in both open and wooded areas up to altitudes of 4,100 m, but seem to avoid dense forests (Nowak 2005). In addition, *C. semistriatus* appears to be somewhat adaptable to disturbances and is sometimes found close to human habitation throughout its range (de la Rosa & Nocke 2000, Cuarón *et al.* 2008). Although the species is listed by *The IUCN Red List of Threatened Species* as Least Concern, local populations may be affected by hunting, use of pesticides and due to road kills (Cuarón *et al.* 2008, Alves *et al.* 2009, Kasper *et al.* 2009).

Between 17 and 25 March 2010, ten unbaited camera-traps (Rapidfire RC55, Reconyx Inc.) were deployed in a 1 ha plot on the Peña Blanca peninsula of the Barro Colorado Nature Monument in central Panama (79°53'7.684"W, 9°9'42.985"N; map datum WGS84; measured altitude 48 m). The deployments were part of a larger effort to estimate the abundance and diversity of medium- to large-sized terrestrial mammals in 21 1-ha plots spread across the Barro Colorado Nature Monument, including Barro Colorado Island. The Peña

Blanca peninsula is a forest fragment of approximately 1,000 ha that is surrounded by water from the Gatun Lake section of the Panama Canal, and by Teak *Tectona grandis* plantations in the south. The peninsula supports secondary semi-deciduous tropical moist forest. Annual rainfall averages 2,600 mm with a pronounced dry season from mid December until the end of April (Dietrich *et al.* 1982, Windsor 1990).

On 19 March 2010, a male *C. semistriatus* was recorded on two camera-traps spaced 50 m apart. The animal first appeared at 02h54, was detected by the second camera-trap at 04h28, then re-appeared on the first camera-trap at 04h38 (Fig. 2). Another capture was recorded by the latter camera-trap on 20 March, at 01h30. Sets of ten cameras that were deployed in two other parts of the Peña Blanca peninsula and at 18 locations elsewhere in the Barro Colorado Nature Monument did not capture *C. semistriatus*. Camera-trapping effort in the plot where the animal was detected was 80 trap-days, and the total camera-trapping effort for the entire Barro Colorado Nature Monument was 1,717 trap-days.

Habitat use by *C. semistriatus* appears to be diverse. In Brazil, the species is mainly found throughout the Cerrado and Caatinga, i.e., the savannah and shrubland ecoregions, respectively, where it seems to avoid dense forests (Cheida *et al.* 2006, Kasper *et al.* 2009). It has therefore been suggested that extensively forested areas could pose a barrier to the species's distribution in Brazil (Kasper *et al.* 2009). Yet Ferreira (2008) recorded *C. semistriatus* in riparian forests within the Cerrado and Caatinga biomes, but only during the dry season, suggesting that these

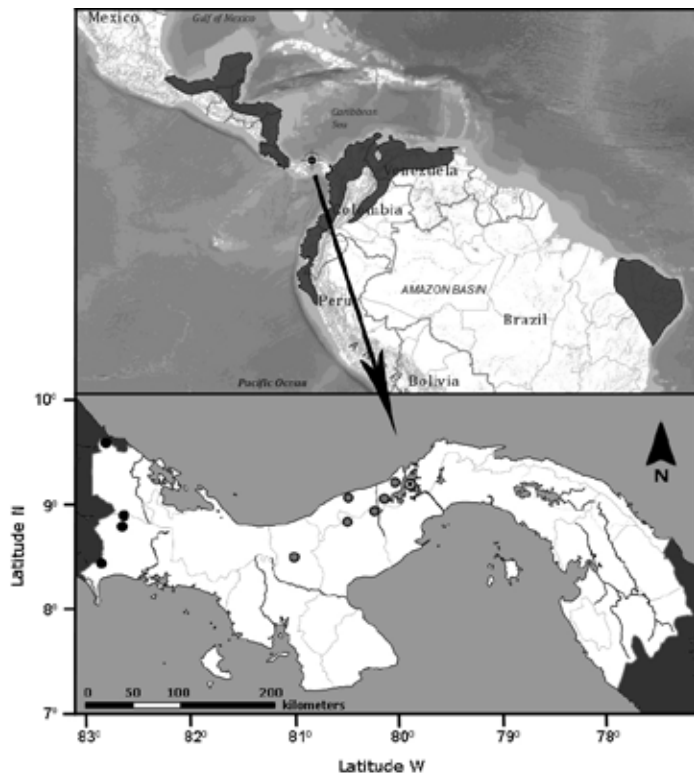


Fig. 1. Upper map: formerly assessed geographical distribution of Striped Hog-nosed Skunk *Conepatus semistriatus* with Peña Blanca peninsula (site of the new record) indicated by a crosshair (map modified from Cuarón *et al.* 2008). Lower map: historical and new records for Panama. Black circles represent museum records (NMNH 2011) while dark grey circles indicate personal observations by Araúz (2005). The Peña Blanca peninsula, in the centre of the Panama Canal, is indicated by a light grey circle with a dark centre.

forests (which are <100 m wide) may serve as a seasonal refuge (Ferreira 2008). In contrast, Medellín *et al.* (1992) captured an adult male *C. semistriatus* in a large primary tropical rain forest in southern Mexico, and in Venezuela a single radio-collared female spent over 60% of her time in closed forests and woodlands, regardless of season (Sunquist *et al.* 1989).

In Panama, observations of *C. semistriatus* all originate from disturbed landscapes, such as forest edges and clearings adjacent to agricultural lands, and coffee plantations surrounded by pastures and secondary forest fragments (Araúz 2005). The new records presented here were located 3.5 to 4 km from the southern land-edge of the densely forested Peña Blanca peninsula, where it adjoins a Teak plantation of roughly 1,000 ha. Beyond this plantation, the landscape is dominated by agriculture and pastures, interspersed with small forest fragments and rural villages. No other records of *C. semistriatus* exist for the Barro Colorado Nature Monument, despite its long history of extensive studies. This suggests that *C. semistriatus* is an uncommon visitor to the densely forested parts of the Canal area, and that our records possibly belong to a single wandering individual.

The historically known distribution of *C. semistriatus* in Panama is based on museum records, all of which originate from localities close to the border with Costa Rica. More recently, Araúz (2005) reported personal observations of the species in the provinces of Veraguas, Coclé and Colón, some



Fig. 2. A male Striped Hog-nosed Skunk *Conepatus semistriatus* captured by two different camera-traps in the Peña Blanca peninsula of the Barro Colorado Nature Monument, central Panama, March 2010.

35 km west of the Peña Blanca peninsula (Fig. 1). Araúz's sightings, albeit unvouchered, indicated that the distribution of *C. semistriatus* in Panama is larger than previously thought, stretching from the Costa Rican border until the western limits of the Panama Canal. Our photographs represent the eastern most record of *C. semistriatus* in Central America and confirm the species's range as proposed by Araúz (2005), extending approximately 300 km east from Cerro Punta, Chiriquí. Moreover, the Peña Blanca peninsula is in the centre of the 700 km-wide gap that separates the known Colombian and Central American sub-ranges of *C. semistriatus*, which suggests that these two sub-ranges may in fact be connected.

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