

## New extension range of *Nyctinomops macrotis* Gray, 1840 (Chiroptera: Molossidae) in Southern Andes of Ecuador

Francisco Sánchez-Karste<sup>1</sup>, Carlos Niveló-Villavicencio<sup>2\*</sup>, Javier Fernández de Córdova<sup>2</sup> and Pedro X. Astudillo<sup>2</sup>

<sup>1</sup>Programa de biodiversidad. Parque Nacional Cajas. Subgerencia de Gestión Ambiental - ETAPA EP. 010150 Cuenca. Ecuador.

<sup>2</sup>Laboratorio de Ecología. Escuela de Biología. Ecología y Gestión. Universidad del Azuay. Av. 24 de mayo 7-77 y Hernán Malo. Apartado 01.01.981. Cuenca. Ecuador.

\*Email: [cvillavicencio@uazuay.edu.ec](mailto:cvillavicencio@uazuay.edu.ec).

**Abstract.** This study reports a new range-distribution of *Nyctinomops macrotis* in the Inter-Andean Valley, Southern Ecuador. This record was done in an urban locality, placed in the inter-Andean Valley at 2,545 m, contributing to improve the knowledge of this species distribution; besides, adding the highest record as well as new locality for Ecuador.

**Keywords:** Inter-Andean Valley; Lowlands; Azuay Province; Cuenca Municipality.

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### ORCID

-  0000-0002-4016-331X  
Francisco Sánchez-Karste
-  0000-0002-8502-3150  
Carlos Niveló-Villavicencio
-  0000-0002-7203-8468  
Javier Fernández de Córdova
-  0000-0002-9945-9414  
Pedro X. Astudillo

Currently there are four species of the genus *Nyctinomops* (Miller, 1902) recognized in the new world, *N. aurispinosus* (Peale, 1848),

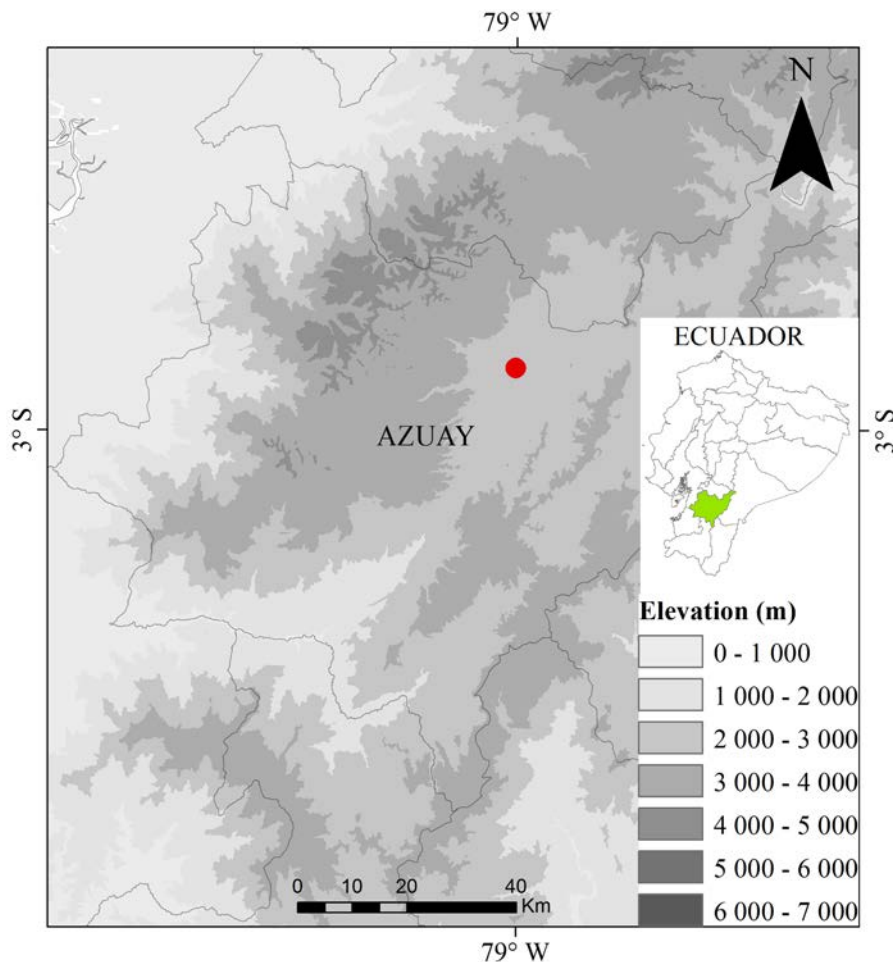
*N. femorosaccus* (Merriam, 1889), *N. laticaudatus* (É. Geoffroy and St.-Hilaire, 1805), and *N. macrotis* (Gray, 1840) (Koopman, 1982; Simmons, 2005),

the last two species occurs in Ecuador (Tirira, 2016).

The big free-tailed bat *Nyctinomops macrotis* (Gray, 1840) is distributed from Southwestern Canada thorough Western United States and México, Central America, and South America in Colombia, Ecuador, Peru, Brazil, Bolivia, Uruguay and Northern Argentina (Simmons, 2005; Gardner, 2007) within an elevation range from 0 to 2,600 m (Milner et al., 1990). In Ecuador this species occurs in East lowlands, Pastaza province as well as west lowlands, Santa Elena, Guayas (Durán) and Manabí (Chone) provinces across an elevation range from 50 to 950 m (Allen, 1914; Albuja, 1999; Tirira, 2007). In addition, *N. macrotis* commonly inhabit

caves, tree holes and buildings in urban areas (Barbour and Davis 1969).

Morphologically the species of *N. macrotis* is the largest member of genus, the dorsal pelage is glossy, varying from a pale reddish brown to dark brown, with bicolored hairs and the basal portion nearly white. This species has a large ears joined at the middle line, and when laid forward reach the snout, an antitragus which is higher than wide, a small and rectangular tragus, wrinkled upper lips, very deep basisphenoid pits, upper incisors parallel and separated from each other by a gap due to a long-narrowly maxillar and the third commissure of M<sup>3</sup> (third upper molar) which is well developed and as long as the second (Gregorin, 2000; Gregorin and Taddei, 2002; Eger, 2007).

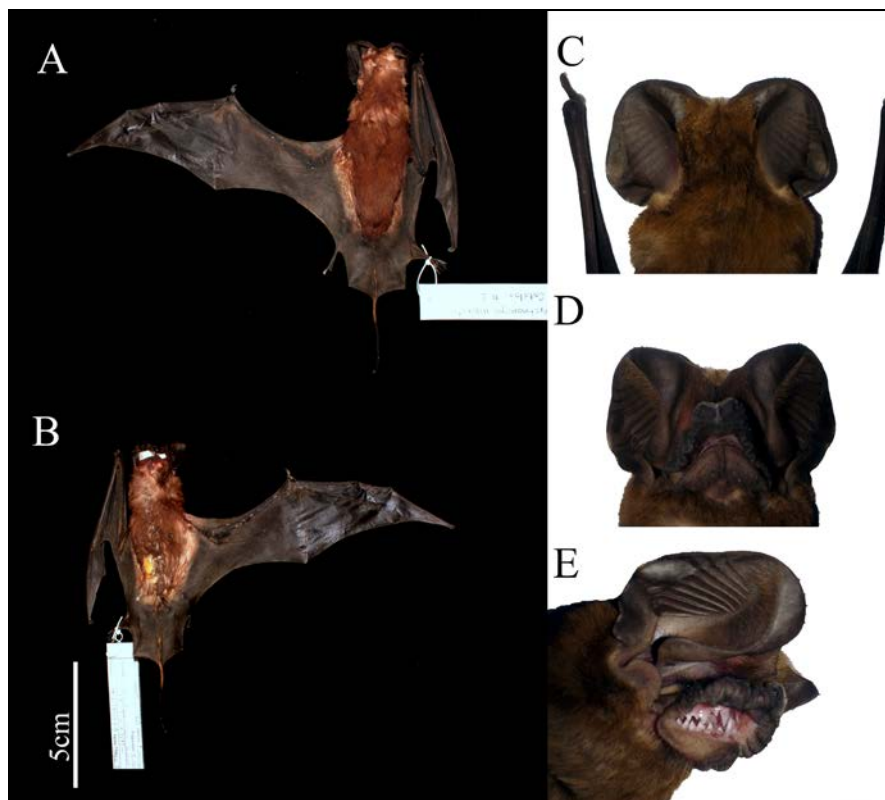


**Figure 1.** New locality of *Nyctinomops macrotis* in Ecuador. The red circle represents the new locality in Cuenca Municipality, Intern-Andean Valley in Azuay Province (in green) from Ecuador.

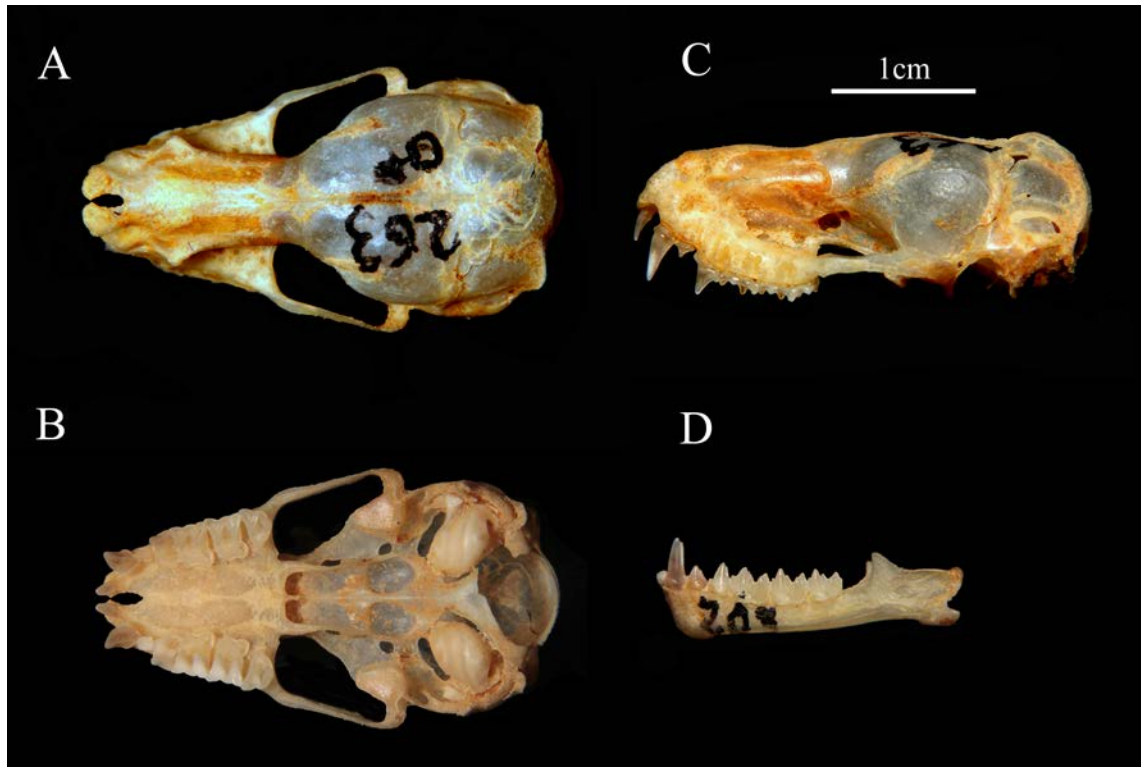
On 28 October 2014, an adult male of *N. macrotis* we found death in the downtown of Cuenca Municipality (2° 53' S, 79° W; 2,545 m), Southern Andes of Ecuador (Figure 1). The average temperature in Cuenca is around 15 °C, the rainy season begins in October to early May. The infrastructure in the downtown is a mosaic between old and modern buildings, there are several churches with large domes and colonial houses.

The specimen reported is big bodied with dorsal fur glossy and brownish (Figure 2A) and, the basal portion pale almost white. The ventral pelage contrast

slightly with the back (Figure 2B). The upper lip is very wrinkly, the ears are large and joined at the middle line (Figure 2C, 2D, 2E). Tail is 42% of the total body length. The braincase is moderately wide and the basisphenoid pits are deep (Figure 3A, 3B). The skull is elongated and flattened, the jaw is fragile and long (Figure 3C, 3D). This specimen was deposited in The Zoology Museum of Universidad del Azuay (MZUA) under code MZUA-MA263, the sample was identified according to external and cranial morphometric measurements (Table 1).



**Figure 2.** Specimen of *Nyctinomops macrotis* recorded in Cuenca Municipality, Azuay Province in the South Intern-Andean Valley from Ecuador. The views are A) dorsal view and B) ventral view. C) back head view, D) frontal head view and E) lateral head view.



**Figure 3.** Specimen of *Nyctinomops macrotis* recorded in Cuenca Municipality, Azuay Province in the South Intern-Andean Valley from Ecuador. The views are A) Dorsal skull view; B) ventral skull view; C) lateral skull view; and D) lateral mandibular view.

**Table 1.** Main external and skull measurements of an adult male of *Nyctinomops macrotis* (MZUA-MA263) recorded in southern inter-Andean valley, Ecuador.

Variable	Measurement (mm)
Total length	144
Tail length	74
Foot length	11
Ear length	23
Forearm length	64
Condylolincisor length	22.34
Zygomatic breadth	13.11
Breadth at mastoids	11.72
Least inter-orbital width	4.22
Rostral length	10.33
Height of braincase	8.11
Palatal length	7.61
Upper tooth row (C-M <sup>3</sup> )	8.90
Lower tooth row (C-M <sub>3</sub> )	9.20
Moment arm of masseter	3.51
Mandibular length	16.65

This record is the first documented for *N. macrotis* in the Southern Intern-Andean Valley, specifically for the Azuay

Province. Thus, the present report become a new locality in the latitudinal distribution and implies a range altitudinal extension of

1,495 m in Ecuador. The geographical distance between the other records and this new locality shows, at least, the species distributed locally throughout Intern-Andes Region, although more studies is needed.

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### Conflicts of interest

Authors declare that they have no conflict of interests.

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