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First geographical record of *Tapirus pinchaque* (Roulin, 1829) (Perissodactyla: Tapiridae) in the western Andes of Ecuador

Primer registro geográfico de *Tapirus pinchaque* (Roulin, 1829) (Perissodactyla: Tapiridae) en los Andes occidentales del Ecuador

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Abstract

We present the record of seven mountain tapir individuals registered with trap-cameras. This is the result of a monitoring program of terrestrial mammals in the mountain forests of Cajas National Park, particularly from western Andes slope. The animals were photographed at two different locations and apparently, they correspond to an isolated population of this species. The impact generated by loss and fragmentation of habitat is the major threat to this population found in the western slope of Cajas Plateau.

Keywords: Cajas Plateau, Camera trapping, Conservation, Mountain tapir, Records, Terrestrial mammals, Western Andes.

Resumen

Se presenta el reporte de siete individuos de tapir andino registrados con trampas cámara. Este es el resultado de un programa de monitoreo de mamíferos terrestres en los bosques montañosos del Parque Nacional Cajas, sobre todo de la vertiente occidental de los Andes. Los animales se fotografiaron en dos lugares diferentes y aparentemente corresponden a una población aislada de esta especie. El impacto generado por la pérdida y fragmentación del hábitat es la principal amenaza para esta población que se encuentra en la vertiente occidental de la meseta del Cajas.

Palabras clave: Andes occidentales, Conservación, Mamíferos terrestres, Meseta de Cajas, Tapir de montaña, Trampas de cámara, Registros.

Introducction

The mountain tapir (*Tapirus pinchaque*) is irregularly distributed in the Andes region of Colombia, Ecuador and northern Perú (Lizcano *et al*. 2016, Padilla *et al*. 2010, Cavelier *et al*. 2010). This species is the largest herbivore in the Andes, and has a key ecological importance because its role as seed disperser, and facilitator of forest regrowth (Downer 2001, Bermúdez-Loor and Reyes Puig 2011, Ortega-Andrade *et al*. 2015). Currently the mountain tapir is listed as Endangered to global scale (Lizcano *et al.* 2016) due to habitat loss and fragmentation caused by the expansion of the agricultural and livestock frontier (Downer 1997, Ortega-Andrade *et al*. 2015). Road constructions, hydroelectric projects, and the expansion of cities constitute a potential threat to its conservation (Díaz *et al.* 2008); moreover, while hunting has decline, it still hampers conservation efforts for this species.

In Ecuador, mountain tapir has been reported in the eastern Andes, at an altitude between 1.500 to 4.000 AMSL (Schauenberg 1969, Geroudet 1970, Tirira 2011), in some protected areas (Ortega-Andrade *et al*. 2015). The ecological corridor *Llanganatis-Sangay* in the central Andes of Ecuador, has been mentioned as an area of primary importance for the conservation of the mountain tapir (Reyes-Puig *et*

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al. 2007). All these records correspond to the eastern Andes and its slope to the Amazonian basin. There are no documented reports for this species on the western slopes of the Andes of Ecuador which is probably due to the lack of studies in this region.

In 2010, under the Biodiversity Programm of Cajas National Park (ETAPA EP) started with the project of monitoring the terrestrial mammals of the Cajas Plateau mountain forests, which has obtained as remarkable result the register of a population of mountain tapir described in this manuscript. The report of the mountain tapir in the survey area come from two localities: Hornillos (2°38' S, 79°13' W; elevation 3.200 m) surveyed from October 2012 to April 2013 and Palmas (2°45' S, 79°21' O; elevation 2.600 m), monitored from October 2014 to April 2015, in the Evergreen Mountain Forests Western at border of Cajas National Park (Figure 1). These localities correspond to large patchs of montane forest, dominated by trees of 15 to 20 m high. The canopy is mainly made up of representatives from the families: Lauraceae, Meliaceae, Euphorbiaceae, Clusiaceae, Cunoniaceae and Moraceae. These trees are covered with bryophytes and a great diversity of epiphytic species. The understory contains the families: Rubiaceae, Actinidiaceae, Melastomataceae and Moraceae, while the Shrub and herbaceous layer has dense vegetation of the families: Poaceae, Gesneriaceae, Ericaceae and a large number of ferns (Iglesias *et al*. 2013).

In 180 days of camera trapping, using five *Ltl Acorn 6210* and *Bushnell HD* trail cameras per site and with a sampling effort of 900 days/camera at each one, we gathered a total 118 photographs that likely correspond to seven individuals of mountain tapir: two males, three females and two juveniles (Figure 2). The determination of individuals was based on the comparison of natural traits such as tips of the earlobes, hair swirls on the snout that were stronger criteria for identification, body scars that appear in one individual during the survey, body size that was determined by using measurements of reference objects of the photographic scenery, individual sex when pictures were made from back of individuals (Duque-López *et al*. 2013) (Figure 2).

Further, it has also been found that the paths that

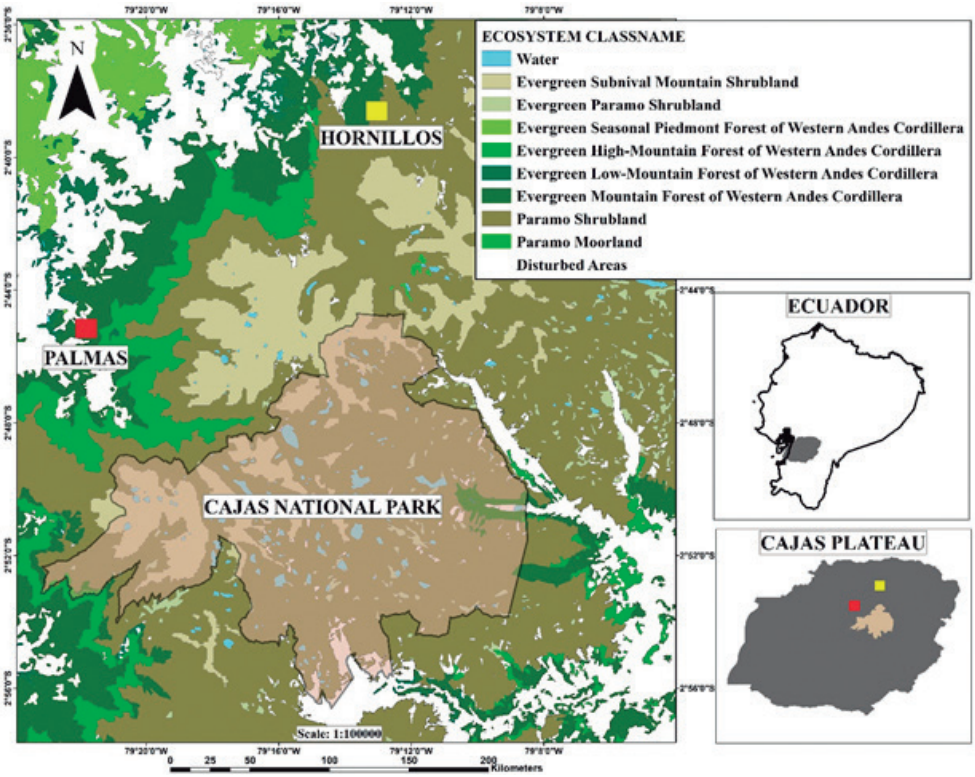

Figure 1. Sites of the records for *Tapirus pinchaque* using camera traps in two localities (Hornillos and Palmas) of the evergreen mountain forests at western border in Cajas National Park.

Figure 2. Photographs of tapirs registered of the evergreen mountain forests at western border in Cajas National: Two males (a, b) and one juvenile (c) at Palmas locality; and one male (d), one female (e) and one juvenile (f) at Hornillos

tapirs leave behind them are used by other mammal species, plus we have registered: Andean bear (*Tremarctos ornatus*), Northern Tigrina (*Leopardus tigrinus*), Little Red Brocket (*Mazama rufina*), Western Mountain Coati (Nasuella olivacea), Mountain Paca (*Cuniculus taczanowskii*), Andean White-eared Opossum (*Didelphis pernigra*) via camera traps.

These reports of mountain tapir on western slope of Cajas Plateau is the first documented for the species in the western Andes of Ecuador and extend the known distribution of the species for the country. This species is currently distributed at Central and Eastern Cordillera in Colombia and for Ecuador and northern Perú is been reported mainly to the Eastern Cordillera (Lizcano *et al*. 2002, Ortega-Andrade *et al.* 2015, Lizcano *et al*. 2016). There is only one historical record of mountain tapir in northwestern Andes of Colombia, in a locality named Frontino (Antioquia, Colombia), reported by Arias-Alzate *et al*. (2010), which is a specimen deposited in the Museum of Natural Sciences collected in 1911. Thus, our record would be the first documented species with a specimen in the Western Cordillera in the Andes of Ecuador for the species. This record is located at a distance of more than 1000 km from our survey area and our currently the nearest known register location

for this species from our study area is about 75 km, in the Eastern Cordillera, at the Amaluza area (Ortega-Andrade *et al*. 2015).

The conservation future of the Mountain tapir in Cajas Plateau is uncertain. Most of the land is privately owned, and activities like logging, hunting, expansion of the agricultural frontier, ranching, burning, are threats for the species in this area. Moreover, the Cajas Plateau is currently isolated from other areas were the species has been found.

It is imperious to invest efforts in the conservation of forest areas of the western slope of Cajas Plateau, which lack of a protection category by the Ministry of Environment (Ministerio del Ambiente). Furthermore, it is important to establish environmental education programs to the residents who live near the habitat of the mountain tapir. Finally, the design and establishment of biocorridors to promote connection of forest patches in the western slope of Andes. The discovery of the mountain Tapir in the western Andes demonstrate that southern Ecuador is still largely unexplored and we expect that new distribution records from this area will reported.

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Literatura citada

Arias-Alzate A, Downer CC, Delgado CA, Sánchez-Londoño JD. 2010. Un registro de tapir de montaña (*Tapirus pinchaque*) en el norte de la cordillera occidental de Colombia. *Mastozool Neotrop. 17(1):* 111-6.

Bermúdez-Loor D, Reyes-Puig JP. 2011. Dieta del tapir de montaña (*Tapirus pinchaque*) en tres localidades del corredor ecológico Llangantes-Sangay. Centro de Biodiversidad IASA. Boletín Técnico 10, *Serie Zoológica 7:* 1-13.

Cavelier J, Lizcano D, Yerena E, Downer C. 2010. The mountain tapir (*Tapirus pinchaque*) and Andean bear (*Tremarctos ornatus*): Two charismatic, large mammals in South American tropical montane could forest. *In: Tropical Montane could Forest: Science for Conservation and Management.* Scatena LA, Hamilton LS (eds.). Cambridge: Cambridge University Press.

Diaz AG, Castellanos A, Pineda C, Downer C, Lizcano DJ, Constantino E, *et al.* 2008. *Tapirus pinchaque*. The IUCN Red List of Threatened Species 2008: e.T21473A9285481.

Downer CC. 1997. Status and Action Plan of the Mountain Tapir (*Tapirus pinchaque*). Pp. 14-18. *In: Tapirs: Status Survey and Conservation Action Plan.* Brooks DM, Bodmer RE, Matola S (eds.). IUCN/ SSC Tapir Specialist Group. Gland and Cambridge: IUCN, Viii +164 pp.

Downer CC. 2001. Observations on the diet and habitat of the mountain tapir (*Tapirus pinchaque*). *J Zool. 254:* 279–91.

Duque-López S, Abud M, Calero-Mejía H, Valderrama S. 2013. Camera-trap Records of Mountain Tapir in Puracé National Park, Colombia. Tapir Conservation.

Geroudet P. 1970. Le tapir pinchaque doit etre prote´ge´ in Equateur. *Biol Conserv. 2:* 139-40.

Iglesias J, Santiana J, and Chinchero MA. 2013. *Bosque siempreverde montano bajo de Cordillera Occidental de los Andes.* Quito: Ministerio del Ambiente del Ecuador, Sistema de Clasificación de los Ecosistemas del Ecuador Continental. pp. 86-8.

Lizcano DJ, Pizarro V, Cavelier J, Carmona J. 2002. Geographic distribution and population size of the mountain tapir (*Tapirus pinchaque*) in Colombia. *J Biogeog. 29:* 7-15.

Lizcano DJ, Amanzo J, Castellanos A, Tapia, A, López-Malaga CM. 2016. *Tapirus pinchaque.* The IUCN Red List of Threatened Species 2016: e.T21473A45173922. http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T21473A45173922.en

Ortega-Andrade HM, Prieto-Torres DA, Gómez-Lora I, Lizcano DJ. 2015. Ecological and geographical analysis of the distribution of the mountain tapir (*Tapirus pinchaque*) in Ecuador: Importance of protected areas in future scenarios of global warming. *PLoS ONE. 10(3):* e0121137. Disponible en: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0121137

Padilla M, Dowler RC, Downer CC. 2010. *Tapirus pinchaque* (Perissodactyla: Tapiridae). *Mammal Spec. 42 (863):*166-82.

Reyes-Puig JP, Tapia A, Palacios N. 2007. Tungurahua volcano: a strategic refuge for mountain tapir in Ecuador. *Tapir Conservat. 16/1 (21):* 16-7.

Schauenberg P. 1969. Contribution á l'étude du tapir pinchaque, *Tapirus pinchaque* (Roulin 1829). *Revue Suisse Zool. 76:* 211-56.