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SHORT COMMUNICATION

What's on the menu? A presumed attack of Andean bear on a Mountain tapir at the Puracé National Natural Park, Colombia

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Abstract

Two iconic and charismatic species that inhabit the northern Andes of South America are the Andean bear (*Tremarctos ornatus*) and the Mountain tapir (*Tapirus pinchaque*). Both species can be found sympatrically in several areas of Colombia, Ecuador, and northern Peru. Despite their overlap in distribution, little is known about interactions between both species, with few reported cases of Andean bear attacks on the Mountain tapir. Here, we report a possible attack by an Andean bear on a Mountain tapir in the northern part of Puracé National Natural Park, Colombia based on strong wounds and marks on a tapir's back and rump. The wounds match typical attack patterns generated by Andean bears and corroborates previous camera traps records of bears attacking tapirs in this locality.

Keywords
ecological interactions, neotropical mammals, high Andean forest, protected area, *Tapirus pinchaque*, *Tremarctos ornatus*

The Mountain tapir *Tapirus pinchaque* (Roulin 1829) is the smallest extant species of the genus *Tapirus* and has restricted distribution to cloud forest remnants and páramo habitats in Colombia, Ecuador and northeastern Peru, at elevations between 1400 and 4700 m (Lizcano et al. 2002; Arias-Alzate et al. 2010; Cavelier et al. 2010; Padilla et al. 2010; Ortega-Andrade et al. 2015). Mountain tapirs are among the largest mammals of the north Andean region reaching a weight up to 190 kg (Lizcano et al. 2017). Within its range, the Mountain tapir is sympatric with the Andean bear, *Tremarctos ornatus* Cuvier, 1825, described as one of its potential predators (Castellanos 2011, 2019; Castellanos 2014; Rodriguez et al. 2014). Andean bears are considered as an omnivorous species with a high preference for plants, and animal proteins comprise less than 10% of its diet (Figueroa 2013; Gonzales et al. 2016). Evidence of predatory attempts has been reported based on wildlife camera photographs observing an Andean bear holding on to the back to a Mountain tapir (Rodriguez et al. 2014). Besides scavenging records, the presence of Mountain tapir hair in Andean bear feces and claw marks on mountain tapir individuals have been suggested as further evidence of interactions between these two species (Castellanos 2011; Rodriguez et al. 2014; Castellanos 2019; López-Ordóñez et al. 2020). Here, we present a report of an individual Mountain tapir with wound patterns typically generated by Andean bear attack at the Puracé National Natural Park (PNNP), southwestern Colombia.

On 21 July 2020, local people reported to rangers of the Puracé National Natural Park (PNNP) the presence of wounded Mountain tapir around the Güargüero stream in the sector Alto Vedón La Plata, 39–40 km of the road Puracé – La Plata (02°19'33.8"N, 076°17'19.6"W ± 25–30 m; 2,890 m a.s.l) at the PNNP, Department of Cauca, southwestern Colombia (Fig. 1). This area is mainly covered by High-Andean cloud forests and páramo ecosystems, in the southern part of the Central Cordillera of Colombia (Bonilla-Valencia et al. 2019). Three PNNP rangers tracked the tapir and made observations of the individual for five days (23 to 27 July 2020) along seven km of road in the protected area. During 23 July, the survey was made between 14h:30–17h:00. Similarly, on 24 July, two surveys were made between 9h:00–11h:00 and 15h:00–17h:00, and on 25–27 July, three surveys were made between 15h:00 and 19h:00, all on the locality reported by local communities. All surveys were diurnal and occurred in the rainy season (Heck and Figueroa 2009), however no precipitation was recorded during the surveys. Our efforts included a 55.5 hours/person and a total of 35 km of road sampled.

On 24 July 2020, we first observed the wounded Mountain tapir, a juvenile individual (Fig. 2A) with two large wounds located in the right flank on the anterior part of the back (~22 × 16 cm), a wound located on the posterior region

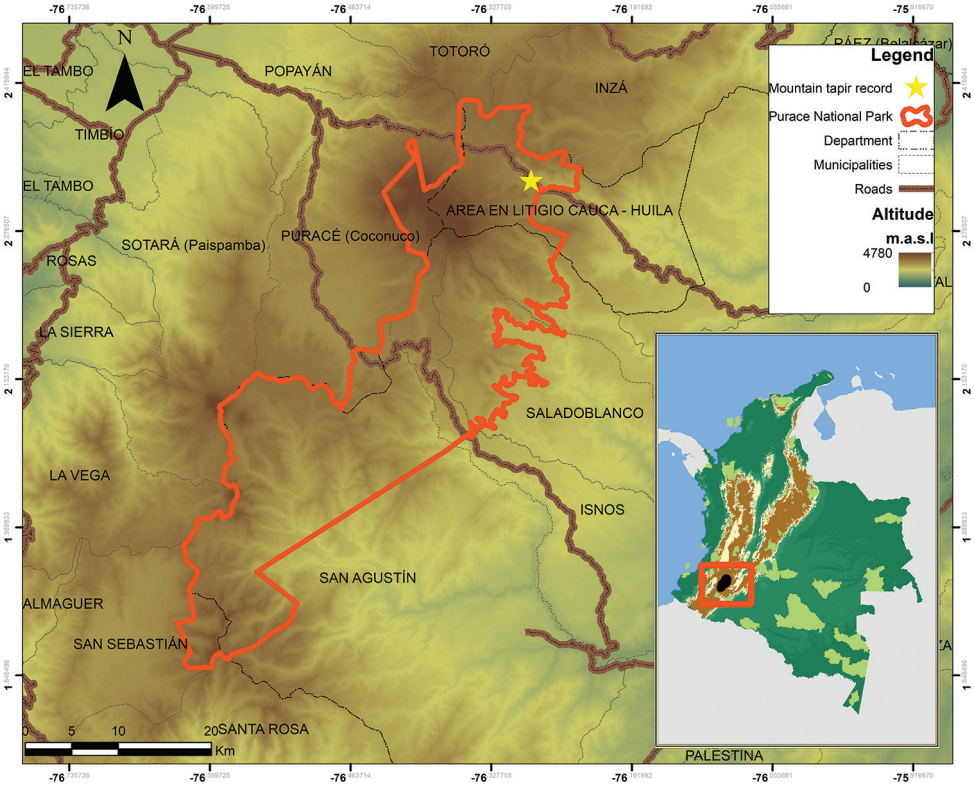

Figure 1. Locality of wounded Mountain tapir record (yellow star) at the Puracé National Natural Park, Colombia.

(~11 × 5 cm; Fig. 2B) and on the right side of its rump (~ 17 × 12 cm; Fig. 2C), and small scratches on the rump and both thighs (Fig. 2D), which we presume were made by the Andean bear.

The same day at 16h:00, one of the rangers observed the wounded Mountain tapir feeding along the road edge for one hour and was able to collect a rotten piece of meat hanging from the wound of the rump, after stored in 70% ethanol (personal field number – GAP 198). The tapir exhibited abnormal movements with its right front foot but remained upright. The individual eventually entered the forest.

On 25 July at 17h:48, the PNNP team observed the individual 600 m away from its last sighting, foraging on the roadside for approximately 20 minutes. The tapir exhibited no signs of discomfort, such as rubbing its head or scratching branches into the wounds or difficulty walking. The individual again entered the forest around 18h:10. Two days later on 27 July, the PNNP team detected the individual 1.4 kilometers away from the last observed location. The dry wounds were about 60% of the size since the first observation. We attempted to record more precise measurements, but the arriving of local bus spoked the animal that into the surrounding forest. No capture or veterinary intervention to the animal were performed because it was

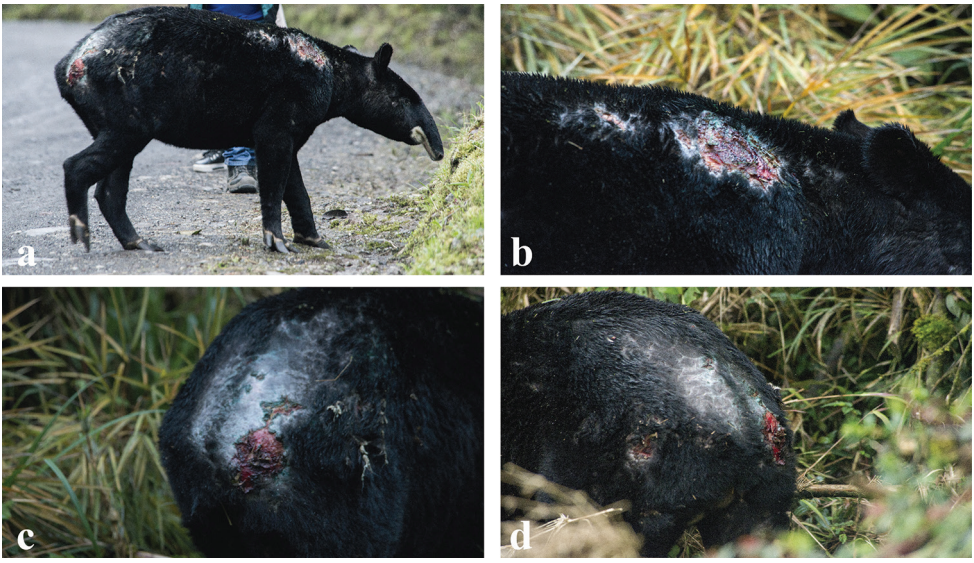

Figure 2. Records of a wounded Mountain tapir produced presumably by Andean bear at the Puracé National Natural Park, Colombia on 27 July 2020. **A** General view of the individual, **B** wound located in the right flank on the anterior part of the back, **C** wound located on the right rump region, **D** scratch located on the left thigh region. Photographs: Gustavo Adolfo Pisso-Florez.

standing and feeding normally. Also, the contingency measures taken by Colombian government because COVID-19 pandemic limited the mobilization of technical personnel to the PNNP. Also, the tapir was feeding normally and showed signs of healing naturally.

We suggest that the wounds observed on the Mountain tapir were caused by an Andean bear based on the patterns registered of bears attacking livestock (Goldstein et al. 2006; Figueroa 2015). Andean bears attacks large prey, by grasping them by the back with their claws and biting the back to disable it. This process produces multiple bites that leave large wounds and tears of flesh on the shoulders, back, and chest (Goldstein et al. 2006; Castellanos 2011; Narvaez and Zapata-Ríos 2016). Recent evidence has shown that the Andean bear preys on Mountain tapirs by hunting them (Castellanos 2019), or through scavenging (López-Ordóñez et al. 2020). The Mountain tapir wounds that we observed allow us to hypothesize that an Andean bear tried to attack the back of the tapir but failed to achieve the predation attempt (Rodriguez et al. 2014). Mountain tapirs are large, yet overtly cautious, and can move fast; such traits may allow them to escape attacking predators (Castellanos 2011; Rodriguez et al. 2014).

The road side behaviors of this Mountain tapir after a presumable Andean bear attack are similar to an event described in Ecuador (Castellanos 2019), where a Mountain tapir spent most of its time at nearby cattle pastures and salt licks, and periodically finding shade and shelter in patches of cloud forest. This individual may

have used an open roadway to better detect predators; it has been suggested that Andean bears may be affected by roads (Hernani-Lineros et al. 2020) but more evidence is needed. Another large predator inhabiting Puracé is the cougar, *Puma concolor* (Linnaeus, 1771), but this species primarily feeds on prey such Brocket deer (*Mazama rufina*) and Northern Pudu (*Pudu mephistophiles*) (Hernández-Guzmán et al. 2011). Further, cougars often attack the throat or neck of prey (Márquez and Goldstein 2014; Narváez and Zapata-Ríos 2016). More foraging and predator-prey dynamics information is warranted to better understand the ecology of charismatic northern Andean megafauna.

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