


**NOTA CIENTÍFICA**
**Report of a serendipitous encounter with a melanistic Jaguar in Darién (3 May 2019)**

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**Fecha de Recepción:** 18-XII-2019. **Fecha de Aceptación:** 15-VI-2019. **Fecha de Publicación:** 29-VI-2020.

In Panama, large carnivore species are represented by Canidae and Felidae. Among the Felidae, jaguars (*Panthera onca*) represent the largest cat in the Neotropics (Sunquist & Sunquist, 2002; Jędrzejewska *et al.*, 2017) and the third largest in the world. Wozencraft (2005) recognized nine subspecies of jaguar, but recent morphometric and molecular studies suggest that it is actually a monotypic species, which occurs from Arizona through Central America, all the way down to northern Argentina (Kitchener *et al.*, 2017). Unfortunately, the continuous loss of natural areas has reduced as much as 55% of their historical range of occupation (Seymour, 1989; Sanderson *et al.*, 1999; Zeller, 2007; Jędrzejewski *et al.*, 2018). Currently, much of the usual jaguar habitats have been transformed into agricultural areas, cattle ranching, and human settlements, bringing jaguars and humans into conflict (Polisar *et al.*, 2003; Moreno *et al.*, 2016b). Panama does not escape from this negative reality, since natural populations of jaguars have been declining in the last decades (Meyer *et al.*, 2015, 2016). The most relevant factors leading to the decrease of jaguar populations in Panama are habitat loss, conflicts with humans (mainly cattle ranchers) due to hunting of their natural prey and the use of their body parts and organs (Moreno *pers. obs.*; Moreno *et al.*, 2015, 2016a, 2016b). Currently, the IUCN classifies the jaguar as near threatened (NT, Quigley *et al.*, 2017) and in Panama it is considered an endangered species (EN, MiAmbiente, 2016).

Jaguars are an important component of the big mammals in Neotropical ecosystems, occupying the position of top predator; they are considered an umbrella species. Their distribution is mainly tropical, at low population densities (Silver *et al.*, 2004; Reid, 2009; Moreno & Meyer 2016), across several types of habitats, usually below 1800 m (Seymour, 1989; Moreno *et al.*, 2016a); some specimens from Panama have been spotted at higher altitudes (3200 m; Moreno *et al.*, 2016a). They can occupy montane forests, lowland evergreen forests, dry deciduous forests, mangrove forests, arid scrub and swampy grasslands (Sunquist & Sunquist, 2002; Moreno *et al.*, 2016a). They have been characterized as opportunistic predators, feeding primarily on medium to large preys, adapting their diet to local conditions (Lopez-Gonzalez & Miller, 2002; Moreno, 2006). They are usually solitary and



nocturnal, but in some places they can be diurnal, depending on the activity of its prey (Moreno & Meyer, 2016) and mainly terrestrial (though they are good swimmers and climbers) (Carrera-Treviño *et al.*, 2016). They usually sleep during the day in shady areas, on stream banks or on horizontal tree branches (Reid, 2009). Owing to their cryptic habits, jaguars remain less studied than most other large cats (Brodie, 2009), many ecological, reproductive and ethological aspects of this species are poorly understood (Pinho *et al.*, 2014; Harmsen *et al.*, 2017; Miranda *et al.*, 2018); in addition, there are relatively few sightings documented in the literature, despite its wide distribution (Hoogesteijn *et al.*, 2016). At least in Panama, apparently there are no published reports on encounters with jaguars (although there are many anecdotal stories about encounters in rural communities). Thus, in this contribution we make a detailed report about the sighting of a melanistic jaguar in the Darién Province, and notes and illustrations about the event are included. Apparently melanistic jaguars are not common in Panama, although there are some records on both slopes (Figure 1), from sea level to more than 1000 meters (Moreno *et al.*, 2016a, 2016b; Meyer *et al.*, 2019).

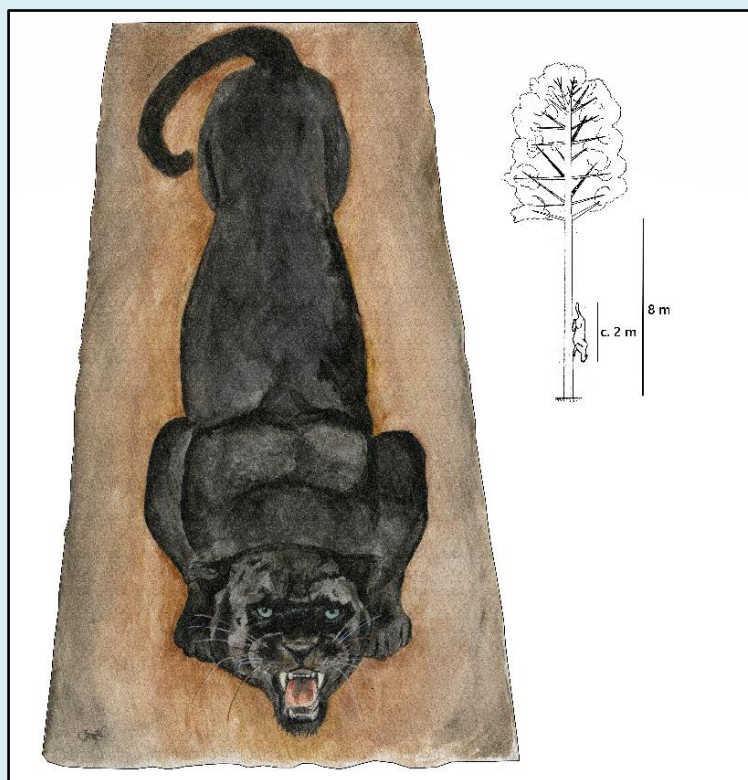


**Figure 1.** Melanistic jaguar (female) from Bocas del Toro Province, Panama.  
Photo credits: Fundación Yaguará Panamá/MiAmbiente.

During a botanical expedition, on May 3, 2019, the first and second author of this work (OO and RQ) and two other botanists, began (at 7:30 am) an expedition heading SE from the field station at Cana in Darién (7°45'24"N, 77°41'4" W) to reach Altos del Nique (southern end of the Serranía de Pirre). We walked for eight hours straight along the steep path that leads to the collection site at Altos del

Nique. At around 3 p.m., two of us (OO and RQ) decided to stay to rest at the base of a large steep hill, located exactly at: 7°45'44"N, 77°43'4" W at 1215 m. The site included a forest with well-defined tree strata with extremely steep topography and a very open understory with large trees (between 15 and 40 m high). Around 3:15 p.m., we heard the sounds of crackling branches and heard a strange purring. Almost immediately, about 5 m away, we unexpectedly saw a melanistic jaguar descending head-first, down a tree trunk 20 m high (similar to an *Otoba* sp., Myristicaceae), as shown in Figure 2 (spoken portrait). When the cat was almost on the forest floor, we felt intimidated, as the jaguar, upon seeing us, let out soft grunts and showed his teeth. Immediately, OO got up, grabbed a stick and began shouting and waving as one would while trying to scare away an aggressive cat or dog. After this, the jaguar jumped to the forest floor and quickly ran toward a cliff edge with a massive tangle of shrubs. The entire sighting lasted no more than 10 seconds.

**Figure 2.** Illustration of the jaguar specimen observed in Darién (Serranía de Pirre: Cana). Drawings by Jeraldín Vergara.



We are sure that the observed specimen was a melanistic jaguar, as it was a robust cat (about 2 m long) with a large head, brown whiskers, relatively small ears, short legs, a relatively short tail (less than head and body length) with black fur and brown towards the tips, and a remarkable musculature on its shoulders. Also, previous camera-trap reports confirm the presence of this species in the area where the sighting took place (Moreno, 2006), which is known as "Pantera conga or Tigre congo". In Panama, the melanistic jaguar could be confused with the yaguarundi (*Puma yagouaroundi*), but the latter feline differs in having a smaller and slender body, smaller head and a long tail (almost head and body length) (Reid, 2009; Hunter, 2015). A head-first descent from a tree trunk by a jaguar has never been reported in the existing literature, but there are reports of this behavior in the margay (*Leopardus wiedii*, Sunquist & Sunquist, 2002; Ried, 2009; Bianchi *et al.*, 2011). Although it is known that jaguars can descend from a tree running as fast as leopards from Africa and Asia, they cannot rotate their joints 180 degrees like the margay (Hunter, 2011).

It may be that the first author's (OO) reaction during the sighting was not the most appropriate, but given the size and presence of the animal *in situ*, it was very difficult to think clearly about such a situation. Hoogesteijn *et al.* (2016) has recommended the following actions at the time of an encounter with a jaguar: keep calm (do not shout or make sudden movements) and avoid running or turning your back on the animal (to get away, you must walk slowly backwards at a safe distance of 30 to 40 m). Although there are very few documented cases of jaguar attacks on humans (see Rabinowitz, 2005; Campos-Neto *et al.*, 2011; Iserson & Francis, 2015; Hoogesteijn *et al.*, 2016), there are no known cases of jaguars that deliberately stalked to kill and consume human beings (Hoogesteijn *et al.*, 2016; Moreno *et al.*, 2020). Jaguar's "attacks" on humans are triggered mainly by provocation or accidents with specimens in captivity. In some cases, they can happen due to intrinsic aspects of the animal related to the defense of its cubs, "heat status", the presence of its natural prey and by hunting with dogs, to which the jaguar (or puma), in response to stressors causes accidental attacks (Moreno *pers. obs.*). The jaguar, unlike its other congeners, has the tendency to avoid confrontation with humans (Hoogesteijn *et al.*, 2016; Moreno *et al.*, 2016b, 2020), and that is exactly our experience in the sighting described here.

The jaguar, erroneously popularly known in the country as "tiger", has historically carried a bad reputation and become part of local myths (mainly the melanistic jaguar due to its dark coloration) (Moreno *et al.*, 2020). This prejudice must be suppressed using environmental education and outreach as tool within communities that live near its habitats. The many folk tales about man-eating jaguars in Panama may represent a social construct driven by highly repetitive and inflated stories that lack officially documented reports (Moreno *pers. obs.*), as it has happened in other Latin American countries (Marchini, 2014; Kelly, 2019).

## ACKNOWLEDGEMENTS

We are very grateful to Asociación Adopta el Bosque Panamá-Adopt a Panama Rainforest Association (ADOPTA) and Ministerio de Ambiente (MiAmbiente) for financing the field work. Special thanks go to Prof. Jerry Harrison and Dr. Julio Castillo for their revisions and suggestions and Jeraldín Vergara (University of Panama) for the illustrations. Both OO and RQ thank Rodolfo Flores and Abel Batista for encouraging the publication of this contribution.

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***Citar como:*** Ortiz, O., Quijano, R., Fuentes, R., Berguido, G. & Moreno, R. 2020. Report of a serendipitous encounter with a melanistic Jaguar in Darién (3 May 2019). *Mesoamericana* 24(1):34-40.