TERRESTRIAL BEHAVIOR OF A SOLITARY FEMALE SPIDER MONKEY (A*TELES CHAMEK*) ON A BEACH IN MANU NATIONAL PARK, PERU

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Abstract

While predominantly arboreal, spider monkeys of various species sometimes have been observed descending to the ground. Individuals of *Ateles chamek* have been reported to access some kind of food resources (rotten wood or salt licks) on the ground. We describe the terrestrial behavior of an adult female *Ateles chamek* (Peruvian spider monkey) on a sandy bank of the Pinquén River, Manu, Peru. This behavior lasted several minutes, with sequences of walking on four legs, pausing, and standing upright on the hind legs. The probability that she was a pet is very low due to the location being remote from population centers. The possibility of the individual looking for water to drink directly from the river is not discarded but due to the low water level and short distance between the two banks of the river, it is believed that this solitary adult female (migrant sex in the species) had intentions to cross the river, and that our presence ultimately influenced her decision not to cross.

Keywords: Atelidae, beach, bipedalism, terrestrial behavior, Pinquén River

Abstract

Aunque predominantemente arborícolas, a veces se han observado a monos araña de varias especies descender directamente al suelo. Se han reportado individuos de *Ateles chamek* bajarse para acceder a algún tipo de recursos alimenticios (madera podrida o lamederos de sal). Reportamos y describimos el comportamiento terrestre de una hembra adulta *Ateles chamek* (mono araña peruano) en una orilla arenosa del río Pinquén, Manu, Perú. Este comportamiento duró varios minutos, con secuencias de caminar sobre cuatro patas, hacer pausas y ponerse de pie sobre las patas traseras (postura similar a la humana). La probabilidad de que fue mascota es muy baja debido a la lejanía de los centros poblados. La razon de buscar agua para tomar directo del rio no se descarta pero creemos que debido al nivel bajo del agua, distancia corta entre extremos del rio se cree que esta hembra adulta solitaria (sexo migrante en la especie) tuvo intenciones de cruzar el rio, pero que nuestra presencia al final influyo en su decisión de no cruzar.

Palabras clave: Mono araña, playa, comportamiento terrestre, río Pinquén

Introduction

The Black-faced Spider Monkey (*Ateles chamek*), also known locally in Peru as *Maquisapa* (Primates: Atelinae), is an Endangered species (Cornejo et al., 2018) whose population size is decreasing through loss of area of occupancy and extent of occurrence due to habitat loss and degradation, in addition to threats faced from hunting (van Roosmalen and Klein, 1988; Peres, 1990; Parry et al., 2007). It is a relatively common species in areas where it is not hunted for its meat (Konstant and Rylands, 2013). This species inhabits the canopies of Neotropical forests in Bolivia, Brazil and Peru and primarily consumes ripe fruit (Di Fiore et al., 2008). Primates from the *Ateles* genus prefer to use high strata such as the canopy and emergent layer (van Roosmalen, 1985; Mendes Pontes, 1997; Wallace, 2008). Terrestrial behavior in *Ateles* is aimed at obtaining mineral resources from the clay lick and drinking water (Izawa, 1993; Campbell et al., 2005; Blake et al., 2010; Link et al., 2011). Previous studies report terrestrial behavior of *Ateles chamek* in Cocha Cashu (Campbell et al., 2005). However, in a study on the reintroduction of spider monkeys, land use represented 2.7% of the activity pattern during the adaptation period due to the fact that during the first weeks they are learning to use the forest, climbing up progressively to the higher canopy (Bello, 2018).

Here, we report and describe the terrestrial behavior of a female individual of *Ateles chamek* on a sandy beach in the river bank of the Manu National Park in Madre de Dios region, Peru. During an excursion in September 2021, at the intersection between the Pinquén River and Manu River in Manu National Park, Manu, Madre de Dios, Peru (-12.182, -71.019) (Fig. 1) we observed an individual spider monkey descending to the ground and exhibiting terrestrial behavior. Using a camera with

a 500mm lens + a smartphone, pictures and videos have been recorded. Analysis of the collected material was carried out to describe this event, and to discuss the possible causes of this behavior. We considered the proximity of population centers or communities, seasonality, river width and water level.

We analyzed a video of 244 seconds (approximately 4 minutes) taken on September 14th 2021 of an adult female on the left bank of the Pinquén River. The video records the major part of the terrestrial behavior of the animal.

The individual was first spotted by the group from the boat at 16:42. She was in the trees at the edge of the forest on the left side of the river. She was apparently on her own (no other individual seen). She took time scanning the environment, shaking the branches, perhaps making sure that there were no predators nearby; similar behavior for spider monkeys has been described (Campell et al., 2005). The river current was very slow at this location, therefore the boat driver switched the engine off to better observe with as little noise as possible to minimize disturbance of the individual. Four minutes after the beginning of the observation, the spider monkey decided to descend from the trees. First hidden behind trees, she then reappeared on the beach. At this point a video was recorded. During this period the animal walked on all four legs at a medium pace with her tail rolled up (Figure 2), paused several times and stood up several times on her back legs (Figure 3), then continued to walk on all four legs. The duration of the terrestrial behavior recording was of 244 seconds and consists of 63.5% walking on four legs, 20% standing on four legs and 16.5% standing up on her back legs. In Table 1, we provide the minimum and maximum duration of each of the events that were part of this sequence of terrestrial behavior. Even though bipedal locomotion has already been reported (Machnicki et al., 2016), in our case, the female never walked bipedally. When standing in bipedal posture, she almost always used her tail as a support for standing upright.

Based on data provided by the World Bank (2023) on their Climate Change Knowledge Portal, the precipitation for July, August and September had been very low in the Madre de Dios region in 2021. The levels of precipitation for those months were respectively 17.08, 35.94 and 58.53 mm, as compared to mean values of 73.35, 70.45 and 92.15 mm (for those months, from data collected by the World Bank (2023) from 1991 to 2020).

Using freely available satellite imagery for this period (Planet.com, 2022), the approximate distance from the monkey to the other side of the Pinquén River was estimated to be 70 m and from that point to the other side of the Manu River to another, larger beach was 400 m.

Table 2 provides details of the distances and hours of travel by boat (with a 60hp engine) from the location where the monkey was spotted to the populated areas, lodges or camp sites.

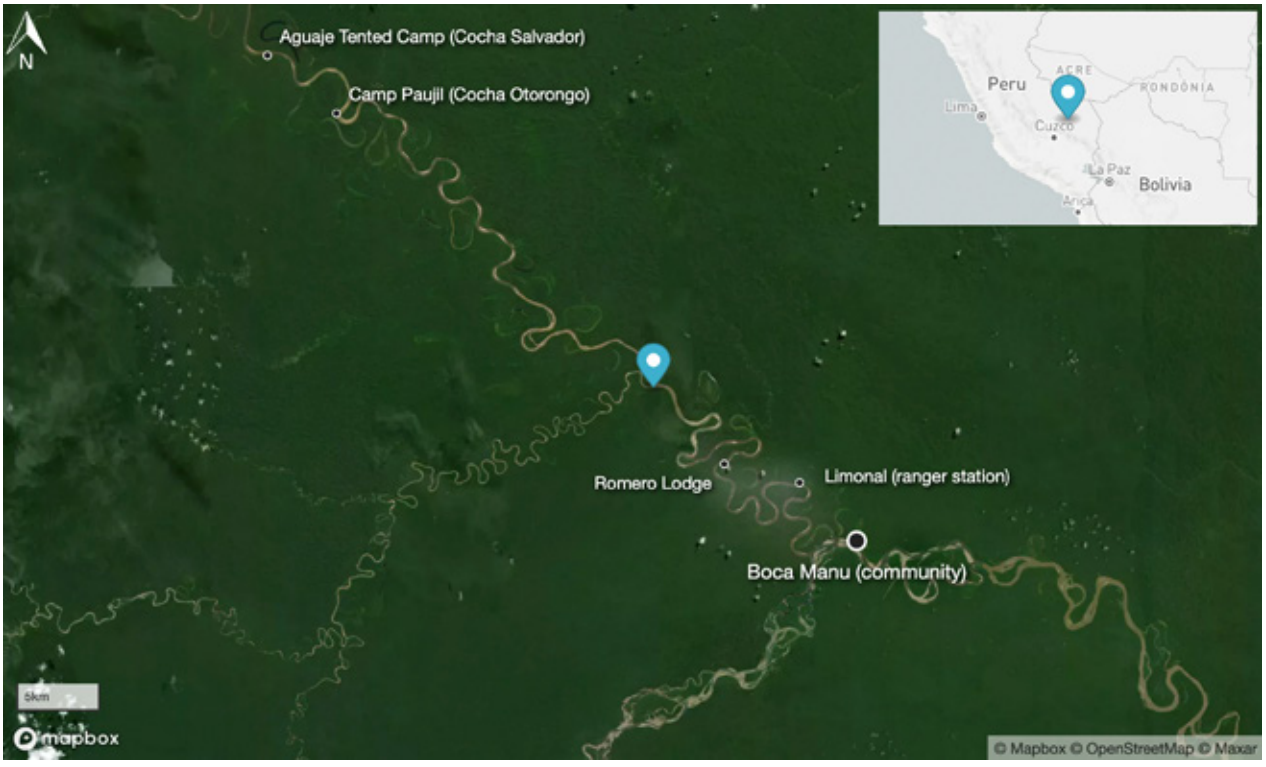

Figure 1. Field location of the sighting of *Ateles chamek*, walking on a beach in Parque Nacional del Manú - Madre de Dios, Perú.

Although spider monkeys are highly arboreal, when needed, they can use the ground for eating soil or drinking water, and to escape attacks from conspecifics or play a chase game (Campbell et al., 2005, Machnicki et al., 2016). Even reintroduced spider monkeys have been observed on the ground only 2.7% of the time, and this behavior was more frequently observed in individuals who showed difficulties in adaptation during the initial weeks after their release (Bello, 2018). The animal we observed on the open beach was significantly more exposed than it would have been on the ground in the forest where it would have been able to climb trees quickly. Descent to the ground increases risks of predation, and there have been documented attempted predation events by large felines on primates at clay licks (Matsuda and Izawa, 2008), but other terrestrial animals like peccaries are also a threat (Bello et al., 2021). In our observations, the animal was vigilant but quiet at all times: walking back and forth, but occasionally pausing and eventually standing on her hind legs to observe her surroundings.

Table 1. Duration (in seconds) of the different types of the terrestrial behavior. The monkey left the beach and returned to the forest at 16:52 at the same location she had first been spotted.

0	Four-legged Stance	Bipedal Stance	Walking on Four Legs
N	11	5	16
Min	1	2	1
Max	10	13	32
Sum	49	40	155
Mean	4.454545	8	9.6875
Std. Dev.	2.876235	5.147815	7.726308

Despite our presence, the animal did not appear to feel threatened, and when she emerged onto the beach we considered the possibility that she was or had been a pet. However, when analyzing the distance between the lodge and the village centers, the closest area of human habitation was Romero Lodge (not permanently occupied), which is 6 km away in a straight line, but on the other side of the Manu River. In the Peruvian Amazon, it is common but illegal for tourism companies to use wild animals as attractions (Shanee and Shanee, 2021; Bello, pers. obs.). None of the tourism companies within Manu National Park are likely to have wild animals as pets. It is illegal and the penalties are dissuasive (SERNANP, 2019). Some Indigenous communities do keep wild animals as pets and also consume spider monkey meat (Rosin and Swamy, 2013). After hunting a mother, they may keep her young as a pet, but when the animal matures it may be "released or abandoned in the forest" when it becomes too large and annoying. However, the probability of survival in the wild for spider monkeys that have been kept as pets for several years is very low (Bello, 2108).

A second explanation could be that the monkey was looking for water. The event occurred during the dry season, and the region was particularly dry at the time of the observation. The lack of rain could have pushed the monkey to seek water from the river. It is unusual that the monkey would choose a water source so far from the protection of the trees. However, in Bolivia *Alouatta* sp. was observed drinking from the beach at the edge

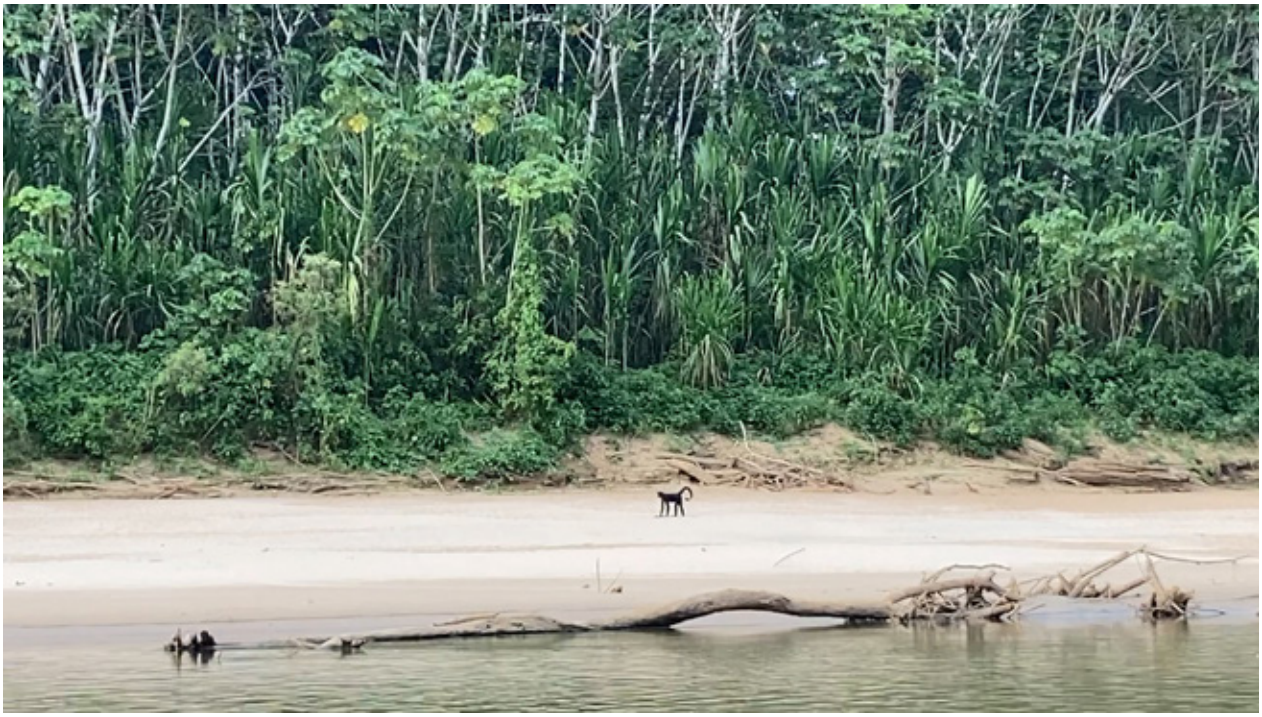

Figure 2. Spider monkey, *Ateles chamek*, in a four-legged stance on a beach in Parque Nacional del Manu, Madre de Dios, Peru.

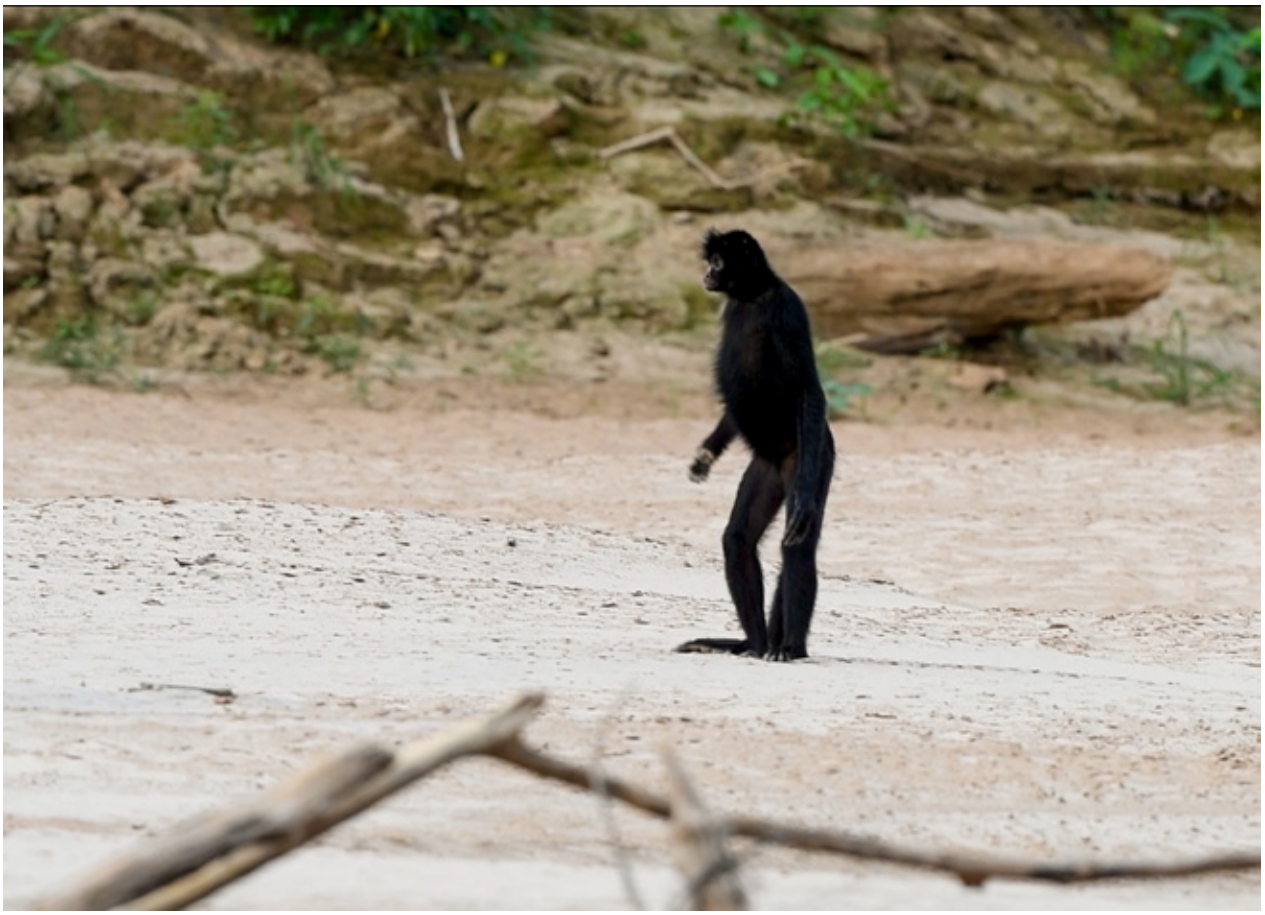

Figure 3. Spider monkey, *Ateles chamek*, standing bipedally, in Parque Nacional del Manu, Madre de Dios, Peru.

Table 2. Distance from spider monkey sighting to communities and lodges.

Community / Lodge	Dist. as the crow flies (km)	Dist. along river (km)	Travel time by boat (hours)
Boca Manu	15	45	3
Romero Lodge	6	20	1
Limonal (Park Ranger Post)	10.5	33	2
Aguaje Tented Camp (Cocha Salvador)	29	50	5
Camp Paujil (Cocha Otorongo)	24	42	4

of the forest on the Intenez River during the dry season (Wallace et al., 1999). Perhaps the monkey did not feel safe enough to approach the water's edge because of our presence, and instead went back and forth on the beach.

Another reason this adult female was found alone may be that, in the genus *Ateles*, young adult females often migrate in search of other groups (Link et al., 2018), even traveling long distances looking for a new group to join (Shimooka et al., 2008). Although we can't be certain, she appeared to be a nulliparous female. Perhaps she walked along the beach because she was trying to cross the river in order to search for and join another group of spider monkeys. The distance from the beach to the other side of the river was about 70 m. Spider monkeys are able to swim and cross slow-moving rivers (Collins and Dubach, 2000; Goldani et al., 2006; Chavez and Stoner, 2010; Valle, 2014; dos Santos-Filho et al., 2017), and larger species like *Ateles chamek* are less affected by ecological barriers (Ayres and Clutton-Brock, 1992). The emergent beach, slow current, and short distance between both edges of the river during the dry season may have allowed a river crossing, but the presence of the boat may have influenced her decision not to cross.

Acknowledgments

The video recordings were shot by Nicole Van Zutphen (Canada), Michael Pentland (U.K.), Pierre Giraud (France), then assembled and edited by Pierre Giraud. The final revision of the English spelling and wording was carried out by Nicole Van Zutphen, Timothy Jacob Campbell (USA) and Michael Pentland. We would like to thank the guide Berner Torres Perez (Peru) as well as the boat driver and incredible observer Tomas Chu Laureano (Peru) of the Diamante community. Very special thanks

go to Crees Foundation and Crees Manú SAC (Peru) for giving us the opportunity to visit the Manu National Park.

Video

The video showing the behavior is available online: https://tinyurl.com/ateles-beach.

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