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Source: Neotropical Primates, 16(1) : 32-34

Published By: Conservation International

URL: https://doi.org/10.1896/044.016.0107

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Hunting Strategy of the Margay (*Leopardus wiedii*) to Attract the Wild Pied Tamarin (*Saguinus bicolor*)

Fabiano de Oliveira Calleia
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Introduction

Wild primate predation has been widely reported for various Neotropical cat species. Apparently, prey body size and predator body size are related, with large cats preying mainly on large primates. Remains from different species of primates have been observed in scats of different Neotropical cat species (Table 1). According to Cabrera and Yeppes (1940), primates are the favorite prey of *Puma yaguaroundi* in some regions of Central America. More recently, Miranda *et al.* (2005), found fingers and nails from *Alouatta guariba clamitans* in two fecal samples from *Leopardus pardalis* and suggests that the ocelot may be a potential predator of all Neotropical primates.

In this study, we focus on a hunting technique by the margay, *Leopardus weidii*. Morphologically, margays have arboreal adaptations, but there are no published reports of the predation strategy of wild margays. The few studies on the margay suggest that its diet is mainly composed of arboreal mammals. Mondolfi (1986) analyzed the stomach contents of margay from Venezuela and found remains of squirrel (*Sciurus granatensis*) and the wedge-capped capuchin monkey (*Cebus olivaceus*-cited as *nigrivittatus*, a junior synonym). Margay prey species in Guyana were also arboreal mammals (Beebe 1925). In captivity, margays were observed preying on *Saguinus niger* (Oliveira, 1998).

In the course of our field research on felids, we interviewed local Amazon jungle inhabitants (woodsmen and mestizo indians) in different regions of central Amazonia to learn about the biodiversity of local habitats, and in particular, the natural history of Neotropical cat species, including their prey capture techniques. Interestingly, several of the interviewees described a common predation strategy by Neotropical cats as attracting their prey by mimicking the prey species' vocalizations. More than a dozen reports of *Puma concolor*, *Panthera onca* and *Leopardus pardalis* mimicking vocalizations of agoutis (*Dasyprocta* spp.), tinamous or nambús (*Crypturellus* sp.) and solitary tinamous or macucos (*Tinamus* sp.) were made in different river basins (Madeira, Juruá and Purus) (Table 2). Until now, no scientific observations of this type of behavior have been published

Table 1. Review of primates predated by Neotropical cat species.

Predator	Prey	Location	Citation
Panthera onca	*Ateles belzebuth*	La Macarena, Colombia	Matsuda and Izawa (2008)
	Alouatta seniculus	Venezuela	Peetz *et al.* (1992)
	Brachyteles arachnoides	Intervales State Park, Southeast Brazil	Olmos (1994)
	Ateles [paniscus] chamek	Perú	Emmons (1987)
Puma concolor	*Ateles geoffroyi*	Corcovado National Park, Costa Rica	Chinchilla (1997)
	Ateles geoffroyi	Maya Biosphere Reserve, Guatemala	Novack *et al.* (2005)
	Ateles Belzebuth	La Macarena, Colombia	Matsuda and Izawa (2008)
	Alouatta pigra	Maya Biosphere Reserve, Guatemala	Novack *et al.* (2005)
	Alouatta caraya	Mutum Island, Southern Brazil	Ludwig *et al.* (2007)
	Ateles chamek	Perú	Emmons (1987)
Leopardus pardalis	*Saguinus* spp.		Goldizen (1987)
	Saguinus nigricollis	Colombia	Izawa (1978)
	Alouatta guariba	Caratinga Biological Station, Southeast Brazil	Bianchi & Mendes (2007)
	Brachyteles hypoxanthus	Caratinga Biological Station, Southeast Brazil	Bianchi & Mendes (2007)
	Cebus apella nigritus	Caratinga Biological Station, Southeast Brazil	Bianchi & Mendes (2007)
	Alouatta g. clamitans	Chácara Payquere, Southern Brazil	Miranda et al (2005)
	Saguinus fuscicollis	Perú	Emmons (1987)
	Saimiri sciureus	Perú	Emmons (1987)
Puma yaguaroundi	Primates		Cabrera & Yeppes (1940)
	Callithrix jacchus	Paraíba State, Northeast Brazil	Ximenes (1982)
Leopardus wiedii	*Cebus olivaceus*	Venezuela	Mondolfi (1986)
	Saguinus niger	(in captivity)	Oliveira (1998)
	Cebus apella	British Guiana	Beebe (1925)

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for Neotropical felids. Here we report the first field observation of margay mimicking behavior, recorded during field research on the primate pied tamarin (*Saguinus bicolor*) at the Reserva Florestal Adolpho Ducke (59 56' 15,71556" W, 02 56' 25,75037" S) in Manaus, Brazil (for a description of the area, see Ribeiro *et al.*, 1999). In this brief report we suggest that *L. wiedii* uses a mimicking strategy to capture its prey. Our record confirms the reliability of the information provided by the local Amazonian inhabitants.

On October 12, 2005, at 9:13 am, a group of eight pied tamarins monitored by telemetry was feeding in a Moraceae (*Ficus* sp.). A large vine at 15 meters height connected the surrounding trees to the fig tree. At 9:18 am, a margay attracted the attention of a tamarin sentinel (Gordo *et al.*, 2005) by producing calls similar to those emitted by pied tamarin pups. The adult male sentinel climbed up and down the tree to investigate the calls coming from behind the liana tangles. It assumed a surveillance position and, using specific calls, warned the group about the foreign calls. At 9:22 am we observed movements in the vine and keep hearing the call imitations. At 9:29 am three pied tamarin individuals were feeding on *Ficus* sp. while the tamarin sentinel was keeping surveillance. At 9:40 am, four pied tamarins climbed up and down the Moraceae in response to the repeated aggressive calls from the tamarin sentinel. At that moment, was observed a cat with small body but big feet, huge eyes and a long tail walking down the trunk of a tree (like a squirrel); it quickly jumped to a liana that was connected to the fig tree and moved toward where the tamarins were feeding, about 15 meters away. At this moment, the sentinel emitted a high scream as the predator approached the group; and the group fled immediately.

In our observations, the strategy used by *Leopardus wiedii* to imitate its prey was not effective in catching *Saguinus bicolor*. However, we suggest that this strategy is very effective in attracting prey, facilitating the attack and reducing energy expenditure during a possible pursuit. Curiously, all the potential prey (agoutis, macucos, and nambus) cited by the Amazonian inhabitants produce extremely acute vocalizations, which possibly match the potential repertoire of felines. In addition, all the aforementioned potential prey species use vocalizations in intra-specific territorial demarcation. This increases the cats' chance of success in attracting prey by imitation.

Acknowledgments

We thank INPA (Instituto Nacional de Pesquisas da Amazônia) for permission to carry out fieldwork at the Reserva Florestal Adolpho Ducke. The observations reported here were made during a study supported by grant from PROBIO – MMA but we also wish to thank CNPq to provided financial support to Fabiano Calleia and the Wildlife Conservation Society (WCS) and Conservation Leadership Program (CLP) for provided financial support to Fabio Röhe. We are deeply indebted to several collaborators for their inestimable help in the fieldwork (Projeto Sauim-de-Coleira) supported by PROBIO/MMA, FNMA/MMA, WCS, CI, Durrell Wildlife Conservation Trust Apenheul Primate Conservation Trust, Shaldon Wildlife Trust, La Palmyre Zoo, Newquay Zoo, and Philadelphia Zoo. We thank M. Benchimol for comments in the manuscript and B. G. Luize for the interview in Purus River.

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Table 2. Reports of mimicking vocalizations of *Puma concolor*, *Panthera onca* and *Leopardus pardalis.*

Location	Cat Species	Prey Species Imitated
Rio Madeira/2005*	*Panthera onca*	*Dasyprocta fuliginosa*
Rio Aripuaná/2005*	*Panthera onca*	*Crypturellus* sp.
Rio Aripuaná/2005*	*Puma concolor*	*Dasyprocta* sp.
Rio Aripuaná/2005*	*Leopardus pardalis*	*Crypturellus* sp.
Rio Juruá/2004	*Leopardus pardalis*	*Crypturellus* sp.
Rio Juruá/2004	*Puma concolor*	*Crypturellus* sp.; *Tinamus* sp.
Rio Javarí/2009	*Panthera onca*	*Crypturellus* sp.
Rio Purus/2009	*Leopardus* sp.	*Crypturellus undulatus*
Rio Urubu/2006	*Puma concolor*	*Dasyprocta leporina*
Atlantic Forest/2003**	*Puma concolor*	*Crypturellus obsoletus*

*see Röhe 2007 for a description of the area.

** Atlantic Forest location is Serra de Paranapiacaba, São Paulo State, Brazil (see Röhe *et al.* 2003; Tófoli *et al.* 2009).

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Peruvian Red Uakari Monkeys (*Cacajao calvus ucayalii*) in the Pacaya-Samiria National Reserve — A Range Extension Across a Major River Barrier

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Maribel Recharte
Pablo Puertas
Richard Bodmer

According to Hershkovitz (1987) *Cacajao calvus ucayalii*, listed as Vulnerable by the IUCN, (Veiga & Bowler, 2008) is distributed from the east bank of the Rio Ucayali in an easterly direction to the Rio Yavarí and from the Rio Amazonas in the north to the Rio Urubamba in the south. Hershkovitz (1987) also includes the east bank of the lower Yavarí in Brazil, but its presence there has not been confirmed and it is possible that museum specimens marked as collected on the Brazilian bank of the Yavarí actually came from the Peruvian side where this primate is locally abundant. Surveys conducted between 1979 and 1986 (Aquino 1988) showed that the range was much reduced, hunting having exterminated the species in several areas. Aquino (1988) suggested that the southern limit is now probably the Rio Sheshea and that populations close to the Rios Ucayali and Amazonas have also been reduced and in some areas populations have been exterminated (Fig. 1). Populations of *Cacajao calvus* observed by Peres (1997) on the upper Rio Juruá and unconfirmed reports by Fernandes (1990) in the Brazilian state of Acre on the upper Juruá and Purus are either of *Cacajao calvus novaesi* or *Cacajao calvus ucayalii*, which would extend the known ranges of either of these subspecies.

The Rio Ucayali is the largest tributary of the Rio Amazonas and at 400–1,200m wide presents a significant barrier to primate populations. However, the constantly-changing course of the river means that very large islands of forest

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