

# Notes on the Natural History, Distribution and Conservation Status of the Andean Night Monkey, *Aotus miconax* Thomas, 1927

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**Abstract:** The Andean night monkey *Aotus miconax* is found only in Peru's northeastern cloud forests, and is one of the country's three endemic primate species. Very little is known of this species; today largely limited to the records of Butchart *et al.* (1995) and a few museum specimens. Between 2005 and 2007, we observed *A. miconax* in various localities in the regions of Amazonas and San Martín, and recorded what we could of its natural history, distribution and conservation status. The Andean night monkey was observed to live in groups of two to four individuals, using sleeping sites at heights of 6 to 9 m. We have confirmed the presence of the species in 10 additional localities in Amazonas and San Martín, all between 900 and 2,788 m above sea level. It was recorded in various forests types, from primary to relict. Even though it is not hunted directly and can survive in disturbed habitats, the extremely high rate of deforestation in this area is threatening its long term survival. Research on the biology, natural history and ecological requirements of this species are much needed.

**Key words:** Andean night monkey, *Aotus miconax*, primate conservation, Tropical Andes, cloud forest, deforestation

**Resumén:** El mono nocturno andino es encontrado solo en los bosques montaños del nororiente del Perú, siendo uno de los tres primates endémicos del país. Aparte de los avistamientos de Butchart *et al.* en 1995 y unos pocos especímenes de museos, esta especie permanece desconocida. Entre 2005 y 2007, ocasionalmente observamos *A. miconax* en varias localidades de las regiones de Amazonas y San Martín, obteniendo información sobre su historia natural, distribución y estado de conservación. El mono nocturno andino fue observado en grupos de dos a cuatro individuos, usando sitios de dormir entre seis y nueve metros de altitud. Hemos confirmado la presencia de esta especie en diez localidades adicionales en Amazonas y San Martín, entre 900 y 2,788 m sobre el nivel del mar, registrando la especie en una variedad de hábitats, desde bosques primarios a bosques relictos. Pese a que la especie no es cazada directamente y puede sobrevivir en hábitats perturbados, la extremadamente alta tasa de deforestación de estas áreas se encuentra amenazando su supervivencia a largo plazo. Es necesario realizar investigaciones sobre la biología, historia natural y requerimientos de esta especie.

**Pabras claves:** Mono nocturno andino, *Aotus miconax*, conservación de primates, Andes tropical, bosque nublado, deforestación

## Introduction

The cloud forests of northeastern Peru are part of the Tropical Andes biodiversity hotspot, and home to three endemic Peruvian primates: the Andean night monkey (*Aotus miconax*), the Andean titi monkey (*Callicebus oenanthe*), and the Peruvian yellow-tailed woolly monkey (*Oreonax flavicauda*) (see Aquino and Encarnación 1994; Pacheco 2002; Rylands *et al.* 1995). The Andean night monkey is known only from collections by E. Heller in the region of Huánuco (Aquino and Encarnación 1994), and R. W. Hendeel in the region of San Martín (Thomas 1927). It is believed to occur in a very restricted area, west and south of the Río Huallaga,

to about 10°S on the eastern slope of the Andean highlands, in the departments of Amazonas, San Martín, La Libertad and Huánuco (Ford 1994; Hershkovitz 1983). It is sympatric with the two other endemic Peruvian primates. *Aotus miconax* belongs to the “red neck group” of night monkeys. (Hershkovitz 1983), presenting many similarities with *A. nancymaae* but, due to the lack of available information, no conclusive taxonomic arrangements could be provided by Hershkovitz (1983) or Ford (1994). It is categorized as Vulnerable on the IUCN Red List of Threatened Species (IUCN 2008), and as “Endangered” by Peruvian Law (Decreto Supremo 34-2004-AG; see Heymann 2004).

Besides museum specimens and field sightings by Butchart *et al.* (1995), nothing is known of its biology and natural history. In this note we are presenting some observations on the natural history of the species, as well as some remarks on the distribution and conservation status of this primate endemic to Peru.

## Natural History Observations

### Site 1. Abra Patricia–Alto Nieva

We occasionally saw *A. miconax* during the course of a study on the ecology and behavior of the yellow-tailed woolly monkey, *O. flavicauda*, in the Private Reserve Abra Patricia–Alto Nieva in the department of Amazonas (Cornejo in prep.). This reserve of 2,065 ha has primary and secondary cloud forest, with some small human settlements around it. We saw them 11 times in all, between the months of March and June 2007; the contact time ranged from seven to 33 minutes. *A. miconax* was observed in both primary cloud forest and in disturbed forest fragments very close to human settlements, between 1,980 and 2,348 m above sea level. Group size ranged from two to four, with an infant observed once (Table 1). Two sleeping sites were identified. We observed one group when entering a sleeping site at 06:05, and another group when leaving it at 18:15. One of the trees was of the genus *Ficus* (Moraceae) and the other *Ocotea* (Lauraceae). Both were heavily covered by epiphytes, climbers and vines, with the sleeping sites located at heights of 7 m and 9 m, respectively, among branches, epiphytes and vine tangles. Individuals were also observed eating fruits from the genus *Ficus* and flowers from an undetermined tree of the Melastomataceae family.

During one sighting, we saw two individuals moving approximately 10 m from a group of resting *O. flavicauda*, with no sign of reaction from either group regarding the presence of the other species. Another sighting was during daylight at 15:18. The night monkeys were moving through the tree branches until they settled in a *Cecropia* tree. After noticing our presence, they quickly fled. There was no apparent human disturbance prior to the encounter that may have caused the group to be out of its sleeping site.

### Site 2. Huiquilla

We observed *A. miconax* twice during a biological assessment in the Private Reserve Huiquilla, also in the department of Amazonas, between July and August 2006. This protected area of 1,000 ha is of both primary and secondary cloud forest. One group had two and the other five individuals (Table 1). They were in primary forest at 2,681 and 2,788 m above sea level. The first encounter took place during the day, when a local field assistant shook the vines of their sleeping tree, and made them leave. The second group we saw leaving its sleeping tree between 18:20 and 18:40. It soon moved to an undetermined tree of the family Solanaceae to feed on fruits. The sleeping sites were at heights of 6 m and 8 m and consisted of very dense tangles of vines, epiphytes, climbers, and branches.

## Distribution of *Aotus miconax* in the Departments of Amazonas and San Martín

*Aotus miconax* was described by Oldfield Thomas (Thomas, 1927a) from specimens collected by R.W. Hendeel in the area of San Nicolas (in a valley called Huayabamba) in

**Table 1.** Sightings of *Aotus miconax*.

Date	Minimum group size	Adults	Infants/ juveniles	Time	Contact duration (minutes)	Activity	Altitude (m asl)	Average height of displacement	Notes	Locality
27 March 2007	2	2	-	20:33	33	Eating <i>Ficus</i> sp. fruits	1980	6		Abra Patricia
5 April 2007	3	3	-	19:15	10	Moving	2199	8		Abra Patricia
14 April 2007	4	4?	-	18:15	14	Leaving sleeping tree	2055	7	Possibly 1 juvenile	Abra Patricia
27 April 2007	4	4?	-	18:28	18	Moving	2245	8	Possibly 1 juvenile	Abra Patricia
30 April 2007	2	2	-	18:47	17	Moving, near <i>O. flavicauda</i>	2033	11		Abra Patricia
2 May 2007	2	2	-	6:05	25	Reaching sleeping tree	2198	9		Abra Patricia
3 May 2007	2	2	-	5:58	15	Eating flowers (Melastomataceae)	2314	14		Abra Patricia
3 May 2007	3	2	1	15:18	7	Moving	2257	11	Independent infant	Abra Patricia
25 May 2007	2?		-	21:14	7	Moving, vocalizing	2286	14		Abra Patricia
4 June 2007	3	3	-	6:05	22	Moving	2340	7		Abra Patricia
7 June 2007	2?	2?	-	2:35	9	Moving, vocalizing	2348	10		Abra Patricia
1 August 2006	2	2	-	10:00*	8	-	2681	9		Huiquilla

\* Individuals forced to get out of sleeping tree

Peru's Department of Amazonas. Soon after this first collection, R. W. Hendee provided another specimen from Tingo María, in the Department of Huánuco (Thomas, 1927b). Other records of *A. miconax* were identified by Hershkovitz (1983) in his revision of the genus. He attributed specimens collected by E. Heller in 1922 along the Río Chinchao and from Tingo María, Huánuco (Field Museum of Natural History, Chicago) to *A. miconax*. *Aotus miconax* is also known from sightings

in Comboca and San Cristóbal in Amazonas by Butchart *et al.* (1995). Mittermeier *et al.* (1975) and Leo Luna (1984) reported the presence of night monkeys (referred to then as *A. trivirgatus*) in the cloud forests of Pedro Ruiz Gallo and Venceremos, and these are probably referable to *A. miconax*. Tingo María is also the locality of some *A. nigriceps* collections, so whether these two species are sympatric in this area remains unknown.

Further information on the occurrence of this species (sightings and interviews with local people) was collected during the course of faunal evaluations in the departments of San Martín and Amazonas between August and November of 2005. The surveys included a range of habitats between 900 and 2,600 m above sea level (Table 1). In San Martín, the presence of night monkeys was confirmed in the areas of Los Chilchos and Mashuyacu to the west, very close to the boundary with the department of Amazonas; and in the south, in the Río Tocache basin, from the Río Grueso to near the boundary with the department of La Libertad. In Amazonas, the species has been recorded in the eastern forests at the border with San Martín, from the headwaters of Los Chilchos and the Río Verde in the south, to the basin of the Río Nieva in the north, above 1,300 m above sea level. In the central area, the species occurs in the forests on the left bank of the Río Utcubamba, from Choccta to the headwaters of the Río Imaza in the north (Fig. 1).

*Aotus miconax* was seen to use a variety of habitats at all sites: primary and secondary montane forests on steep and very steep slopes; the ecotone with timberline forests, and relict forests.

### Conservation Status

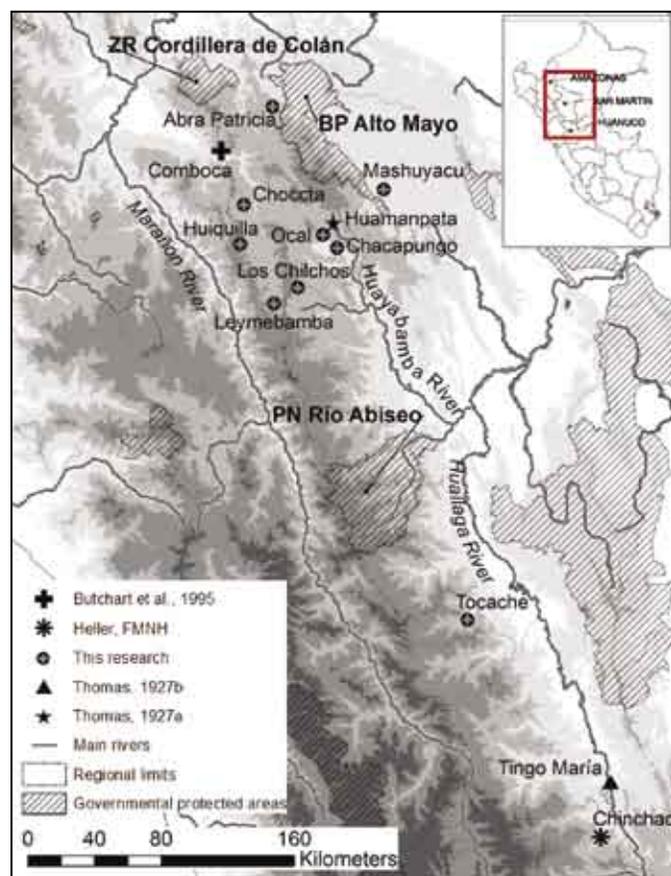
Locally known as “tutacho” or “mono de noche”, *Aotus miconax* occurs in the governmental protected areas Parque Nacional Río Abiseo (274,520 ha, Aquino and Encarnación 1994) and possibly in the Zona Reservada Cordillera de Colán (64,115 ha, Butchart *et al.* 1995). Here the species has now been recorded in Bosque de Protección Alto Mayo (182,000 ha, local informants, near the town of Alto Nieva), the private reserves Abra Patricia–Alto Nieva (2,065 ha) and Huiquilla (1,000 ha), and in the Municipal Reserve Cuenca del Río Huamanpata (23,097 ha).

Being small and having pungent subcaudal scent glands, night monkeys are not hunted for food (Aquino and Encarnación 1994). Nonetheless, a skin was collected from a hunter living in the surroundings of the Abra Patricia–Alto Nieva reserve, and we have recorded at least four families with pets of *A. miconax* in the last two years. Butchart *et al.* (1995) also reported a pet in a village near the Zona Reservada Cordillera de Colán. Local people claim they do not hunt *A. miconax*, neither for the pet trade or food, nor because they eat their crops (as do *Cebus albifrons* and *O. flavicauda*). Individuals are caught, however, when their sleeping trees are cut down when clearing the forest for pasture or crops. They are usually then kept as pets, but tend to die within a few weeks.

**Table 2.** Records of *Aotus miconax*.

Locality	Altitude (m asl)	Type of Record <sup>1</sup>	Source
Abra Patricia	1980–2348	O, R, C	This paper
Chacapungo	~1550	O	This paper
Choccta	~2500	R	This paper
Comboca and San Cristóbal	1860–2300	O	Butchart <i>et al.</i> , 1995
Huamanpata	2460	C	This paper
Huayabamba	~2200	C	Thomas, 1927a
Huiquilla	2681, 2788	O, R	This paper
Leymebamba	~2250	R	This paper
Los Chilchos	~2400	R	This paper
Mashuyacu	~900	C	This paper
Ocal	~2650	R	This paper
Río Chinchao	~1350	C	Heller's collection, FMNH
Tingo María	~800	C	Thomas, 1927b
Tocache	~1350	O	This paper

<sup>1</sup>O=Observed, R=Report from local people, C=Collected from hunters



**Figure 1.** Localities where *A. miconax* has been recorded.

Most of the primary cloud forest in the range of *A. miconax* has been destroyed and replaced by croplands and pastures. These forests were virtually inaccessible until the 70s, when highway construction was begun, traversing the departments of Amazonas and San Martín (Leo Luna 1984). This highway allows the immigration of thousands of people with agriculture and livestock practices incompatible with the characteristics of cloud forest soils. As a result, Amazonas and San Martín have the highest rates of deforestation and immigration in Peru (Elgegren 2005; Peru, INEI 2006). Although *A. miconax* is common where it occurs, and can persist in disturbed, secondary and relict forests, some areas of its supposed historical distribution are so deeply disturbed that the species has become locally extinct. The extremely high rates of deforestation pose a very real threat of the irreversible loss of this ecosystem, where not even officially protected areas provide guarantee for appropriate conservation of these forests. Urgent conservation measures are needed to protect these forests and the species they harbor. Further research on the habitats, range, habits and status of *A. miconax* is needed.

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### Literature cited

- Aquino, R. and Encarnación, F. 1994. Primates of Peru. *Primate Report* 40: 1–127.
- Butchart, S. H. M., R. Barnes, C. W. N. Davies, M. Fernandez and N. Seddon. 1995. Observations of two threatened primates in the Peruvian Andes. *Primate Conserv.* (16): 15–19.
- Elgegren, J. J. 2005. La Deforestación en el Perú. Website: <[http://www.conam.gob.pe/documentos/TallerAnálisis\\_Ambiental/La\\_Deforestacion\\_en\\_el\\_Peru.pdf](http://www.conam.gob.pe/documentos/TallerAnálisis_Ambiental/La_Deforestacion_en_el_Peru.pdf)>. Accessed on 2 July 2008.
- Ford, S. M. 1994. Taxonomy and distribution of the owl monkey. In: *Aotus: The Owl Monkey*, J. F. Baer, R. E. Weller and I. Kakoma (eds.), pp.1–57. Alan R. Liss, New York.
- Groves, C. P. 2001. *Primate Taxonomy*. Smithsonian Institution Press, Washington, DC.
- Hershkovitz, P. 1983. Two new species of night monkeys, genus *Aotus* (Cebidae, Platyrrhini): a preliminary report on *Aotus* taxonomy. *Am. J. Primatol.* 4: 209–243.
- Heymann, E. W. 2004. Conservation categories of Peruvian primates—Categorías de conservación de los primates peruanos. *Neotrop. Primates* 12: 154–155.
- IUCN. 2008. *2008 IUCN Red List of Threatened Species*. International Union for the Conservation of Nature and Natural Resources (IUCN), Species Survival Commission (SSC), Gland, Switzerland, and Cambridge, UK. Available at: <<http://www.iucnredlist.org>>. Accessed on 12 October 2007.
- Leo Luna, M. 1984. The Effects of Hunting, Selective Logging and Clear-Cutting on the Conservation of the Yellow-Tailed Woolly Monkey (*Lagothrix flavicauda*). Master's thesis, University of Florida, Gainesville.
- Mittermeier, R. A., H. de Macedo-Ruiz and A. Luscombe. 1975. A woolly monkey rediscovered in Peru. *Oryx* 13: 41–46.
- Pacheco, V. 2002. Mamíferos del Perú. In: *Diversidad y Conservación de los Mamíferos Neotropicales*, G. Ceballos and J. Simonetti (eds.), pp.503–550. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO)—Universidad Nacional Autónoma de México (UNAM), México, DF.
- Peru, INEI. 2006. Instituto Nacional de Estadística e Informática (INEI), Lima, Peru. Website: <<http://www.inei.gob.pe/>>. Accessed 1 February 2008.
- Rylands, A. B. 1995. A species list for the New World primates (Platyrrhini): distribution by country, endemism, and conservation status according to the Mace-Land system. *Neotrop. Primates* 3(suppl.): 113–160.
- Thomas, O. 1927a. The Godman-Thomas Expedition to Peru. On mammals collected by Mr. R. W. Hende in the Province of San Martín, N. Peru, mostly at Yurac Yacu. *Ann. Mag. Nat. Hist., Ser. 9*, 19:361–375.
- Thomas, O. 1927b. The Godman-Thomas Expedition to Peru. On mammals from the Upper Huallaga and neighbouring highlands. *Ann. Mag. Nat. Hist., Ser. 9*, 20: 594–608.

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