

First record of the Peruvian yellow-tailed woolly monkey *Lagothrix flavicauda* in the Región Junín, Peru

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SUPPLEMENTARY MATERIAL 1 Other primates observed in the forests around San Antonio.

In addition to *Lagothrix flavicauda*, we observed the black-faced black spider monkey *Ateles chamek*, the Marañón white-fronted capuchin *Cebus yuracus*, the large-headed capuchin *Sapajus macrocephalus* and an unknown uakari species (resembling *Cacajao calvus*, which we only observed once (Supplementary Table 1, Supplementary Fig. 1). All species were observed between 1,437 and 1,746 m, with an average elevation of 1,622 m between all troops detected. It would be advantageous to conduct additional surveys in this area across different seasons, to further study primate seasonal habitat usage and abundances in comparison to our initial observations between September and December. The two individuals of *C. calvus* were initially seen foraging alongside a group of *C. yuracus* on a high ridge. When the troops became aware of our presence each troop fled in the opposite direction from each other. The *C. yuracus* troop went down slope towards a tributary of the Pampa Hermosa River and the troop of *C. calvus* fled upslope. Based on the tree movement upon fleeing, we recognised that there were more individuals of *C. calvus* than we could accurately count. Due to the docked tail, thick reddish-blond pelage, and baldhead it was easy to distinguish the *C. calvus* from *C. yuracus*. *C. calvus* has never been documented in the montane forests of Junín, but has been recorded in San Martín at roughly 1,400 m (Vermeer et al., 2013), creating additional research questions regarding its presence in this area.

Although the presence of yellow-tailed woolly monkeys in the forests surrounding San Antonio is certainly the most surprising aspect of this survey, our observations suggest that further studies of the larger primate community are warranted. The discovery of *C. calvus* is intriguing, as this species is typically associated with lowland rainforest (Bowler et al., 2009), but has been recorded as high as 1,421 m in the montane forests of northern Peru (Vermeer et al. 2013). It is crucial to document this relatively unique uakari population through photographs and behavioural observations to compare it to lowland populations. Collection of fecal samples can allow for comparative genetics research between the montane population in Junín versus other more lowland Peruvian uakari species, which could yield interesting results. Given the geographic range and altitude of the site at San Antonio, it is possible that an Andean night monkey (*Aotus* sp.) could be present. Uncertainty still remains regarding the presence of grey woolly monkeys (*Lagothrix lagotricha tschudii*) in this region. Grey woolly monkeys have been observed in key habitats between our current observations and northern populations of *L. flavicauda*, such as the Yanachaga Chemillen National Park (Luna Celino, 2014) and the Pampa

Hermosa National Sanctuary (Cervantes-Zeballos, personal communication), and Aquino et al. (2019) recently expanded their range into areas that might clearly overlap with southern populations of *L. flavicauda*. More surveys in the area could help clarify the biogeography and potential range overlap and competitive exclusion of *L. flavicauda* with *L. l. tschudii*.

SUPPLEMENTARY TABLE 1 Troops of sympatric primates observed in the forests around San Antonio.

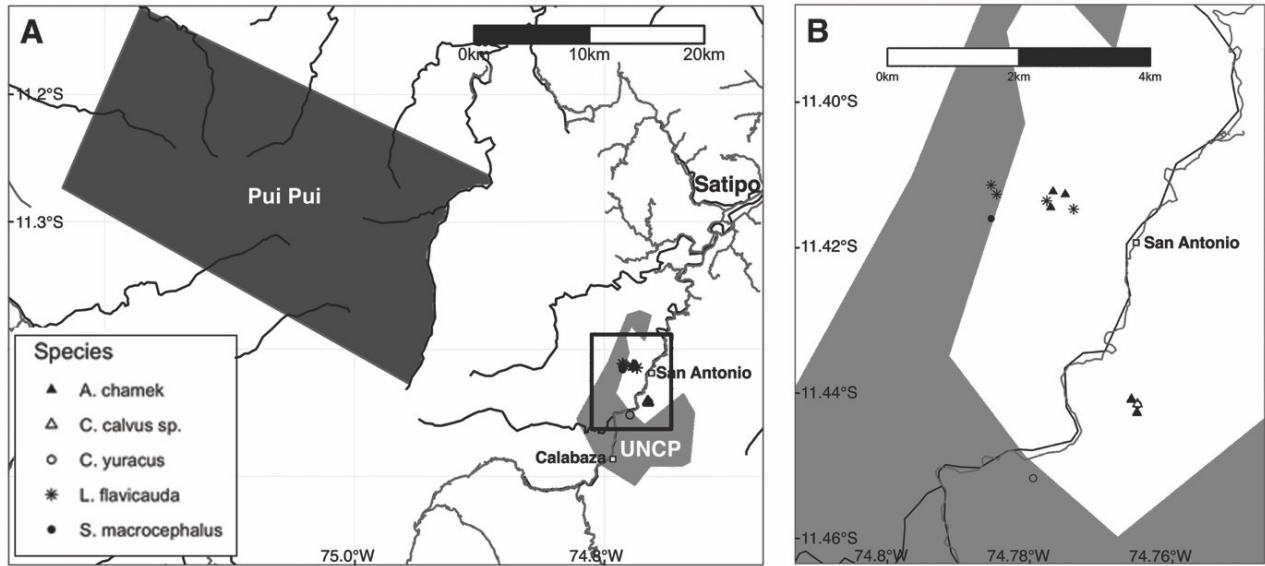
	Elevation (m)	Date	Time	Individuals	Latitude	Longitude
<i>Ateles chamek</i>	1450	9/27/18	08:06	1	-74.7750468	-11.4126455
<i>A. chamek</i>	1460	10/16/18	09:08	5	-74.7767612	-11.412267
<i>A. chamek</i>	1647	10/11/18	10:31	1	-74.765811	-11.4409269
<i>A. chamek</i>	1651	10/11/18	10:35	12	-74.7657653	-11.4407641
<i>A. chamek</i>	1717	11/2/18	10:54	4	-74.7649936	-11.4426174
<i>A. chamek</i>	1739	11/10/18	10:45	1	-74.7649844	-11.4427712
<i>A. chamek</i>	1604	12/28/18	11:51	4+	-74.7770822	-11.4144414
<i>Cacajao calvus</i>	1668	10/3/18	12:18	2+	-74.7649212	-11.4415231
<i>Cebus yuracus</i>	1548	11/1/18	10:11	3+	-74.7795633	-11.4517086
<i>C. yuracus</i>	1669	10/3/18	12:20	2+	-74.7648937	-11.4415864
<i>Sapajus macrocephalus</i>	1722	12/28/18	12:15	1	-74.7854568	-11.4159859

SUPPLEMENTARY TABLE 2 Published records of *Lagothrix flavicauda* in the wild, with sources.

Site	Region	Latitude	Longitude	Elevation	Citation
San Antonio	Junin	-11.4113691	-74.7854612	1746	This paper.
Playa Azul,	San				
BPAM	Martin	-5.659611	-77.676972	1545	DeLuycker et al., 2007
Gocta					
Waterfalls	Amazonas	-6.039306	-77.888278	1800	DeLuycker et al., 2007
Tingo de	San				
Uchiza	Martin	-8.479733	-76.59025	1084	Allgas et al., 2014
	San				
Shunte	Martin	-8.411306	-76.718639	1560	Shanee, 2011
	La				
Ongon	Libertad	-8.196761	-77.094227	2400	Parker & Barkley, 1981
Bardeles		-	-		
Forest	Huanuco	8.608222021	76.67684435	1485	Aquino et al., 2015
Yanajanca		-	-		
Forest	Huanuco	8.608222021	76.67684435	1620	Aquino et al., 2015
Santa Rosa		-	-		
del Oso	Huanuco	-8.61307694	76.69548046	1705	Aquino et al., 2016a
San Antonio		-	-		
de Padua	Huanuco	-8.61558932	76.50007745	1650	Aquino et al., 2016a
		-	-		
Alto Azul	Huanuco	8.925323389	-76.3236612	1223	Aquino et al., 2016a
		-	-		
Oso Mayo	Huanuco	9.757773201	75.67887732	2079	Aquino et al., 2016b
		-	-		
Palizada	Huanuco	9.729971449	75.67895787	1705	Aquino et al., 2016b
	San				
Hoja Grande	Martin	-8.161667	-76.873611	1833	Aquino et al. 2017
	San				
Shunte	Martin	-8.441389	-76.831667	1843	Aquino et al. 2017
Tingo de	San				
Uchiza	Martin	-8.476944	-76.581667	1061	Aquino et al. 2017
San Antonio	Huanuco	-8.615556	-76.500278	1633	Aquino et al. 2017
Libertad	Huanuco	-9.738333	-75.671389	1673	Aquino et al. 2017
Peroles	Amazonas	-5.665806	-77.91	2140	Shanee, 2011
Berlin	Amazonas	-5.919083	-78.4125	2500	Shanee, 2011
Comboca	Amazonas	-5.064	-78.067833	2000	Shanee, 2011
Santo Tomas	Amazonas	-6.342972	-77.519222	2650	Shanee, 2011
Guayacil	Amazonas	-5.669	-78.265028	1840	Shanee, 2011
Hierba Buena	Amazonas	-5.795444	-77.786861	2530	Shanee, 2011
San					
Geronimo	Amazonas	-5.993917	-78.000417	2200	Shanee, 2011
Vilcaniza	Amazonas	-5.811028	-77.873194	2420	Shanee, 2011
Arenal	Amazonas	-5.977861	-77.732778	2440	Shanee, 2011
Shipasbamba	Amazonas	-5.909806	-77.980639	2300	Shanee, 2011
Abra Patricia	Amazonas	-5.697861	-77.810722	2100	Shanee, 2011

Copallin	Amazonas	-5.641667	-78.251	2320	Shanee, 2011
Rio Blanco	Amazonas	-5.575667	-77.9	1830	Shanee, 2011
El Toro	Amazonas	-5.637139	-77.908917	2110	Shanee, 2011
Agua Dulce	Amazonas	-5.66525	-77.902111	2270	Shanee, 2011
El Gato	Amazonas	-5.690861	-77.900028	2230	Shanee, 2011
La Esperanza	Amazonas	-5.689139	-77.906194	2150	Shanee, 2011
San Isidro	Amazonas	-5.72825	-77.912667	1830	Shanee, 2011
Wilca	Amazonas	-5.923917	-77.741	2480	Shanee, 2011
Nuevo Bolivar/Alto	San				
Huyabamba	Martin	-7.320639	-77.460972	2400	Shanee, 2011
Colca	San				
	Martin	-5.894694	-77.387556	1800	Shanee, 2011
Vista Alegre	San				
	Martin	-6.124583	-77.289528	1610	Shanee, 2011
Paitoja	San				
Nuevo	Martin	-6.361667	-77.081139	1790	Shanee, 2011
Mendoza	San				
Cueva/Alto	Martin	-6.451861	-77.096194	1800	Shanee, 2011
Huyabamba	San				
	Martin	-7.351528	-77.454139	1500	Shanee, 2011
La Victoria	San				
	Martin	-8.38075	-76.751333	1650	Shanee, 2011
Chofersito	San				
	Martin	-5.671806	-77.764528	1950	Shanee, 2011
El Afluente	San				
	Martin	-5.668	-77.746528	1760	Shanee, 2011
Olleros	San				
San Pedro de	Martin	-5.962083	-77.593917	2610	Shanee, 2011
Chonta	Huanuco	-8.656389	-76.874972	2450	Shanee, 2011
Ajenco	Huanuco	-8.651778	-76.791111	2020	Shanee, 2011
Poroto	La				
Puerto de	Libertad	-8.11725	-77.141167	1840	Shanee, 2011
Monte	La				
	Libertad	-8.141889	-77.184722	2800	Shanee, 2011
La Grama	San				
	Martin	-6.724917	-77.672361	NA	Shanee, 2011
Metal	San				
	Martin	-8.492083	-76.62575	NA	Shanee, 2011
Uchiza	San				
Laguna de los	Martin	-8.379806	-76.848694	NA	Shanee, 2011
Condores	San				
Bosque	Martin	-6.846806	-77.614389	NA	Shanee, 2011
Javier Tello	Amazonas	-6.716556	-77.658056	NA	Shanee, 2011
Leimebamba	Amazonas	-6.44075	-77.405472	NA	Shanee, 2011
Corosha	Amazonas	-5.8309456	-77.821897	NA	Cornejo, pers. comm.

SUPPLEMENTARY FIGURE 1 Locations where each species of primate was encountered, along with (A) Bosque de Protección Pui Pui in dark grey, and UNCP ACC in light grey, with rivers in black and roads in dark grey; and (B) close-up of primate sightings (species legend in lower left corner), with the Pampa Hermosa River and Road 24A.



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