

# Endangered monkeys contribute to science

by Kara Rosania

## SCIENTIFIC NAME

*Lagothrix* spp.

## TAXONOMY

PHYLUM: Chordata

CLASS: Mammalia

ORDER: Primates

FAMILY: Atelinae

## Physical description

Woolly monkeys are large-bodied, muscular primates that inhabit the tropical forests of northwest South America. They weigh around 6–10 kg, with males weighing around 2 kg more than females<sup>1</sup>. The woolly monkey gets its name from its dense, soft fur which ranges in color from brown to black to grey, depending on the species. The palms of their hands are pink in color, and their bellies are black. They have round-shaped heads, prehensile tails, strong shoulders and arms about as long as their legs. The tail has a pad near its end on the distal side for grip and is as long as, or longer than, the head and body combined. Its arms and tail are used together for movement in the trees, where they typically reside. On the ground, they are bipedal, walking on their legs while using their arms and tails for balance.

## Taxonomy

Woolly monkeys were previously described as a single species, *Lagothrix lagotricha*, split into four subspecies: *L. l. lagotricha*, *L. l. cana*, *L. l. poeppigii* and *L. l. lugens*. However, these have more recently been given full species status, a classification that has become widely used. Additionally, the yellow-tailed woolly monkey, (*Oreonax flavicauda*), is considered by some to be a fifth species of *Lagothrix* (*L. flavicauda*)<sup>1</sup>.

## Research résumé

Woolly monkeys have proven important for the study of hepatitis B virus (HBV), which infects approximately one-third of the world's human population. Woolly monkey hepatitis B virus (WMHBV), originally isolated from a hepatitis-infected woolly monkey at a zoo<sup>2</sup>, is the only hepadnavirus of a nonhuman primate with an

established infectious clone. It shares 78% sequence identity and the same genetic organization with human HBV.

Both the woolly monkey and a closely related New World monkey, the spider monkey, are susceptible to WMHBV infection, and chimpanzees are minimally susceptible<sup>3</sup>. The use of these other two species in HBV research has been necessary because the woolly monkey is endangered and thus not available for experimental purposes<sup>2</sup>. Owing to their large size, woolly monkeys are the most frequently hunted primate in the Amazon region<sup>1</sup>. Furthermore, the rate of reproduction for woolly monkeys is considerably lower than that of other frequently hunted mammals in the Amazon region, making them more vulnerable to overhunting<sup>1</sup>. Two *Lagothrix* species

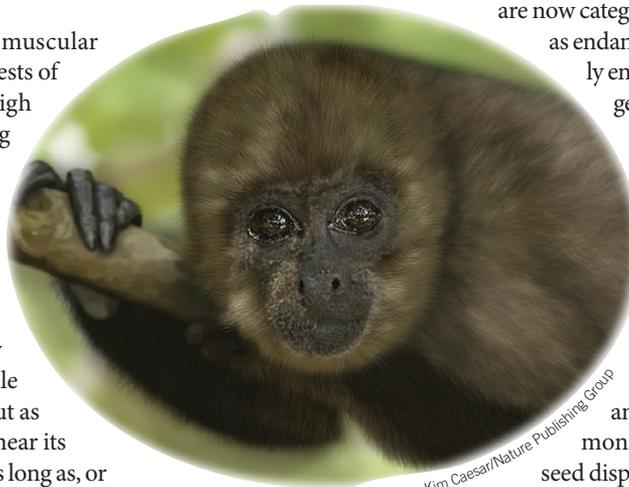
are now categorized as vulnerable, one is categorized as endangered and one is categorized as critically endangered.

Contributing to their endangered status is the limited success of managing woolly monkeys in captivity.

Captive woolly monkeys commonly succumb to hypertension, pregnancy-related complications<sup>4</sup> and *Toxoplasma gondii* infection<sup>5</sup>.

Studies continue to be done with woolly monkeys in their natural habitats, however. Recent examples include studies of ranging behavior and foraging ecology<sup>6</sup>, the role of woolly monkeys as vectors of nutrient cycling via seed dispersal<sup>7</sup> and socioecological studies<sup>8</sup>.

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