

IT'S A JUNGLE OUT THERE

DISCOVERING NEW SPECIES IN THE PERUVIAN AMAZON

FANCY AN EXOTIC HOLIDAY THAT'S MORE SCIENCE EXPERIMENT THAN SELF-INDULGENCE?

GABRIELA MUÑOZ JOINS BIOSPHERE EXPEDITIONS FOR A MORE SUBSTANTIAL SOUTH AMERICAN EXPERIENCE

Three planes, four airports and two boats later, I found myself in the heart of the Peruvian Amazon; 144 kilometres away from Iquitos, the world's largest city that can only be reached by air or river. Dr Alfredo Dosantos Santillán and his team welcomed us—two journalists, one eight-year old and ten nature enthusiasts from Australia, the US, the UK, Poland and Austria—to the Tahuayo River Amazon Research Centre.

Dosantos has spent years in this highland-jungle area, trying to develop different conservation plans for the Peruvian Amazon, which covers 61% of Peru, a South American country that shares borders with Ecuador, Colombia, Brazil, Bolivia and Chile. The researcher usually gets help from international PhD students or local interns who wish to expand their knowledge of the region, but this is the first time he takes volunteers from Biosphere Expeditions, a non-profit organisation specialising in one-of-a-kind nature experiences for science and conservation enthusiasts.

The Área de Conservación Regional Comunal de



The Amazon is home to a huge variety of primates (see opposite). Remain quiet and unthreatening, and almost everywhere you turn, you'll find a little face staring out at you.

Tamshiyacu-Tahuayo (ACRCTT) is considered Peru's first state reserve, it exceeds 1.1 million acres and is roughly the size of the US state of Rhode Island. ACRCTT was first established in 1991, after the local community pledged for the development of a conservation program to save the rare uakari monkey (*Cacajao calvus rubicundus*), a short-tailed, bold primate with a bright red face that is endemic to the region. In 2007, after receiving support from international institutions such as Chicago's Botanic Garden and Rainforest Conservation Fund as well as Yale University's School of Forestry and Environmental Studies, the Tahuayo River Amazon Research Centre (TRARC) was created. However, it was not until 2009 that it became an official conservation area.

Tamshiyacu-Tahuayo is a living museum of natural history, with more than 90 known mammal species roaming around, 2,000 known plant species, 500 documented species of birds, and an estimated 1,400 fish species. With no poachers or loggers in the vicinity, the almost-virgin area offers a unique view into the Amazon, the largest tropical forest in the world and one of the most biologically diverse areas on Earth, which hasn't been adequately studied.

In 2008 primatologist Michael Pereira, who is the scientific advisor to the research centre, built a two-by-two-kilometre grid representative of the Tamshiyacu-Tahuayo area, and it is there where Dosantos and his team are conducting the wildlife monitoring program that will help measure the overall health of the Amazon. This trail is the

largest grid system in the Amazon rainforest, and it is a haven for birds and primates.

Dosantos, who studied at the Universidad Nacional de la Amazonía Peruana, will spend the next five to six years collecting population data on primates and nocturnal mammals, such as pumas, jaguars and margays. "Collecting information to build a database of indicator species will show us how healthy the forest is", explained Dosantos. "For example, a large population of tamarins and a small population of saki tell us the forest is not healthy. Because of their feeding habits, tamarins can even live in farms and plantations; changes in the environment do not affect them, but they do affect other species, such as the saki."

A DAY IN THE JUNGLE

It's 4.30 am and it's dark, humid and warm. We have about 30 minutes to get ready and head to the communal area, where a carb-rich breakfast will be served. There is no hot water, but I don't complain, as the cool drops feel like a soothing balm on my skin. I cover myself in insect repellent, put my rubber boots on and head to the kitchen to grab a cup of coffee.

Outside, the mighty Amazon looks calm, almost like a lake; the early morning sun gives the river a greyish hue. Nun birds and herons fly above. Crickets fine tune their legs and tarantulas hurry back to their burrows, hiding from the light—they will be back at night to hunt and feed on other insects. Bright silver bullet ants walk back to their nest carrying what looks like bread crumbs on their backs. Their name, however, has nothing to do with their colouration; locals say the sting is as painful as being shot by a bullet and the Schmidt Sting Pain Index describes it as "waves of burning, throbbing, all-

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Malika Fettak, our expedition leader, tells us we shouldn't worry, that we would be so lucky to spot a big cat during the day

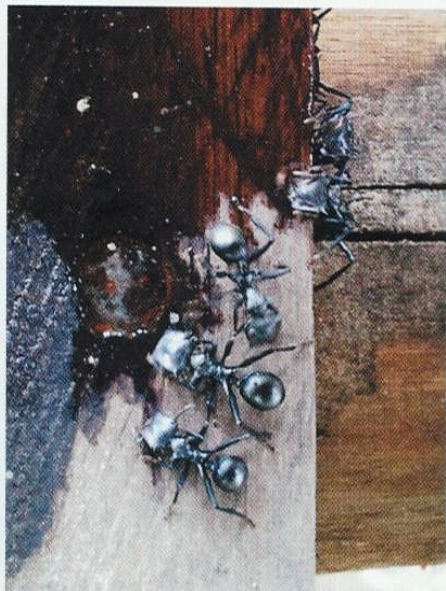
consuming pain that continues unabated for up to 24 hours”.

After breakfast, we are divided into four groups. Dosantos is leading mine. With machete in hand to get rid of unwanted branches and lianas, he walks fast and quietly across the trail grid, almost like a lynx.

For our untrained ears, every sound—a snapping branch, the breeze travelling through the treetops—translates as a monkey or bird. All wasp hives look like a black and coarse-haired saki monkey sleeping on a branch; and certain noises that we cannot identify remind us of the big cats that prowl in the area. Malika Fettak, our expedition leader, tells us we shouldn't worry, that we would be so lucky to spot a big cat during the day as pumas, jaguars and margays hunt at night. “Driving in Iquitos is more dangerous than the forest”, said Fettak to appease our fears.

Dosantos stops at 7.50 in the morning, asking us to be silent. A troop of eight moustached monkeys sways from branch to branch, looking for food—if it weren't for him we would bypass them—their moves are so swift that it is easy to think is just the wind. When one of my fellow explorers hands me the binoculars, I see the monkeys' tiny faces—they do seem to be growing a moustache. The action lasts less than 15 minutes, but we confirm there are eight specimens.

The bullet ant might be more famous for its insanely painful sting, but these humble little black ants still play a vital scavenging role



MEET THE PRIMATES

The Tahuayo River Amazon Research Centre lies between the Tahuayo and Tamshiyacu rivers, some 150 kilometres upriver from Iquitos. TRARC is nested in one of the most biologically diverse areas of the world with pink river dolphins, manatees, monkeys, jaguars, snakes, frogs, and other species yet to be discovered. Most of the 14 species of monkeys surveyed are vulnerable, and the results of Dosantos's research will help develop better conservation programs. Hunting, pollution and habitat loss are a major threat for these species.

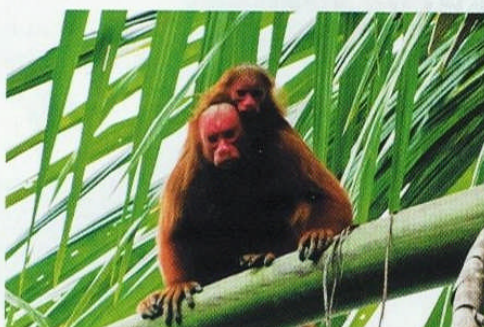


MOUSTACHED TAMARIN

Sanguinus mystax

Found in Brazil and Peru

Status: Least concern



RED UAKARI

Cacajao calveus ucayalii

Found in Brazil and Peru; possibly extinct in Colombia

Status: Vulnerable



MILLER'S MONK SAKI

Pithecia monachus milleri

Found in Colombia and Peru, although it has a poorly known range

Status: Vulnerable

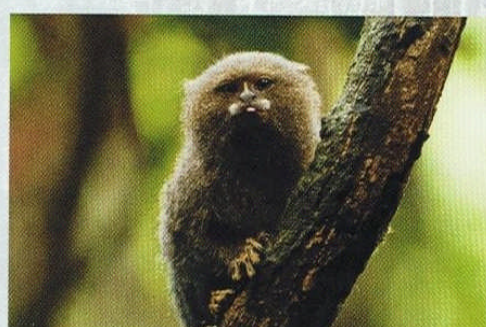


NOISY NIGHT MONKEY

Peruvian red-necked owl monkey

Found in Brazil and Peru

Status: Least Concern

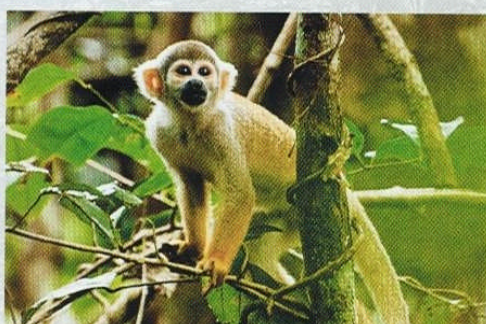


PYGMY MARMOSET

Cebuella pygmaea

Found in Brazil, Colombia, Ecuador and Peru

Status: Least Concern



COMMON SQUIRREL MONKEY

Saimiri sciureus macrodon

Found in Brazil, Colombia, Ecuador, French Guiana, Suriname and Venezuela—although found in Peru, it is not a native species.

Status: Least concerned

Source: TRAC and National Primate Research Centre, University of Wisconsin-Madison.



With renewed energies, we continue our journey. We don't spot more primates that day, but discover the morpho butterfly, a beautiful creature with iridescent blue wings that ranks among the largest butterflies in the world, with a wingspan of up to 20 cm. The blue-winged beauty is a natural engineering miracle as its colour is linked to the minute scales on the back of its wings, which reflect light. The underside of the wings is not as pretty, it has a dull brownish hue that allows them to hide from predators.

Our respect for Dosantos and his team grows as the days go by. Walking on the trail is not easy; you have to be fit, quick and always aware of your surroundings. They have been bitten by many of the



The final fate of the Amazon's frogs is still of huge concern to scientists - viruses and fungal infections have decimated populations

Amazonian creatures we fear, have survived bad cases of malaria and some days they venture into the trail and after six or seven hours of non-stop walking find nothing. "Zero is an acceptable result when it comes to research", Dosantos tells me after just a day of no sightings.

THE SPECIES THAT FELL FROM THE TREE

On a warm August day, a male monkey was sleeping on a branch. The lonely fellow was probably having a nap before resuming his task of finding a suitable partner when one of Biosphere Expeditions' volunteers saw him. There was no one around. She had been walking a bit faster than her team and had to call her teammates, but she got no answer. She called out their names again, and perhaps,



AMAZING AMAZON

The Amazon forest represents half of the Earth's remaining rainforest. The mighty river that nurtures its soil was first explored by Spaniard conquistadores in 1541; Francisco de Orellana led the expedition.

For years Peruvian, Brazilians and Egyptians have held a heated debate as to which is the "world's longest river". Brazilian researchers recently said the length of the Amazon is 6,800 km—the Nile in only 6,650 km, but other measurements suggest the Amazon is 6,400 km. The debate will continue to exist as the measures tend to vary depending on the season.



thinking she had fallen or had had an accident, they hurried to the scene shouting “Are you okay?” The confusion woke up the monkey. He lost his equilibrium and plummeted to the floor. He stood up, took a good look at the volunteers and then quickly climbed back to the tree and ran away.

Dosantos was fascinated by the account. Later on, he told us the description of that monkey didn’t match any of the other 14 species that live in the area. “The report of a titi monkey with white hands was really interesting”, Dosantos explained. “We have two different types of new species: a new one for science, a species that hasn’t been described before; and a new species for the area, a variety that has been described before but hasn’t been reported in a region”.

The monkey that fell from the tree is a collared titi (*Callicebus torquatus*), which is endemic to the Solimoes-Negor interfluvium in Brazil; finding specimens in Tamshiyacu-Tahuayo could mean the discovery of a new species.

Once Dosantos confirms the presence of *C. torquatus*, it will become the 15th known primate species in the area. Winthrop University students who are analysing the population of saki monkeys have also reported a new species of saki. They are working with Dosantos to confirm the results.

And there are more species yet to be discovered. In October 2012, for example, a team of Mexican and



Lianas and other parasitic plants are so successful in this environment, they'll even grow on power lines.



Peruvian researchers found eight new species of mammals in the Tabaconas Namballe National Sanctuary, including a night monkey, shrew opossum and porcupine.

The lack of funding makes it difficult for field biologists to stay in the Amazon for long periods—especially during the wet season, which starts in December and ends in mid-June—but with the help of organisations such as Biosphere Expeditions, scientists may be able to get more financial support and hence develop better research programs.

SOUNDS OF THE GREAT UNKNOWN

At night, the rainforest showcases different jewels. White spiderlings rest on the trees and leaf ants seem to choreograph their moves back to the nest. Owls stare at us. Green frogs croak shamelessly. Caimans are seen in the banks of the river, just a few metres away from the research centre. Bats search for fruit. Dosantos is holding his

machete. We sort of forget that while we are conducting a night survey, the big cats are out there trying to get a meal. Red lights seem to move, but we assume those are a product of our imagination or an effect caused by the torch lights we carry to illuminate the path.

One day before our departure, we head to the jungle and bring back all camera traps. There is nothing in the first six, but in the seventh, we found a margay, a medium-sized feline that can be as swift as a jaguar when hungry.

That night, while trying to embed in my memory the sounds of the Amazonian night, I remember those bright red lights that I saw during the night survey—was it the margay? The humidity and heat have become good friends of mine, they remind me of Sydney on a very hot summer day, and it is then that, feeling at home, I go to sleep. **SCI**

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