



South America Conservation Region: Amazon

PERU: PACAYA-SAMIRIA NATIONAL RESERVE

Turtle, Fish and Palm Co-op Projects Help to Restore Balance to Amazon



Water lilies in the wetness of Peru's Pacaya-Samiria National Reserve are large and strong enough to support the weight of a child. © Lisa Henke/TNC

WATER LILIES ENORMOUS AND strong enough to bear the weight of a child might sound like fairy tale magic. But they are indeed a biological reality in northern Peru's Amazon Basin.

Pacaya-Samiria National Reserve is 5 million acres of humid tropical forests and a mix of streams, riverine forests, marshes, oxbow lakes and other freshwater wetlands. Sizeable enough to almost cover New Jersey, Peru's largest reserve is an island resting on an alluvial plain between the Marañon and Ucayali rivers. The highest point, some 300 feet above sea level, is a distant 2,000 miles from the mouth of the Amazon River.

The reserve's waters harbor gray and pink dolphins, Amazonian manatees, two species of caiman, giant river otters and South American river turtles. Jaguars, spider monkeys and tapirs roam the forests. Pacaya-Samiria is a

haven for 443 bird species, including five of the eight macaws native to Peru, 259 fish species, 97 mammal species, 65 reptile species and 58 amphibian species. Remarkably, it has 13 species of primates and 62 bat species—the highest bat diversity in all of the Americas

Around 90,000 river people, called ribereños, living in some 203 communities in or near the reserve count on its resources for food, shelter and income. Visitors come to the reserve on a four-hour boat trip from the burgeoning city of Iquitos, the provincial capital with a population of 400,000. During the rubber boom 100 years ago, Iquitos was a clearinghouse for millions of tons of rubber being shipped from the Amazon to Europe. "Lonely Planet's" description of Iquitos as friendly, noisy, sassy and slightly manic is dead on.

The Nature Conservancy started working with partners

in the reserve in 1991 to curb threats such as illegal logging of hardwoods, overfishing, unsustainable hunting of large mammals and harvesting of palm fruits and trees, and uncontrolled tourism.

By helping communities to set hunting and fishing limits, the Conservancy has successfully restored some ecological balance in Pacaya-Samiria. An innovative program that forgives Peruvian debt to the United States is pumping \$3.5 million into conservation at the reserve for a 12-year period. And, a cutting-edge study of water flows around the entire reserve will help scientists decide what other measures are needed to protect the reserve and all of the watersheds that feed it. As well, long-term plans call for constructing biological stations within the reserve and finding the funding for an adequate number of park guards.

Palm Pilot Project

Wildlife and villagers rely heavily on two species of palm—the moriche and the chonta. Palm forests cover almost 40 percent of Pacaya-Samiria, so it's not surprising that local residents figured they had an endless supply. But the practice of cutting down entire trees to harvest palm fruits is taking its toll on the forests and the animals that live there.

The Conservancy and local partner Pro Naturaleza have crafted a two-pronged solution to the problem. First, more than a million seedlings have been planted in palm forests. Second, some villagers are now trained to climb palm trees to harvest the fruit. That means villagers can now sustainably harvest the fruits for consumption and for sale.

Fish and Turtles Forever

A taste for side-necked river turtles and fish such as enormous paiches has put those species and others at risk. That prompted the Conservancy to work with local partners to create two community initiatives: fishing cooperatives for adults and a turtle conservation program for adults and schoolchildren.

Families now participate in fishing co-operatives. And local fishermen serve as rangers patrolling certain sections of lakes, rivers and streams that are off limits to subsistence and commercial fishing. Co-ops are establishing fishing seasons, size limits and catch quotas.

Hundreds of schoolchildren have signed up for a turtle conservation program. Thus far, more than a million turtle eggs have been incubated on protected beaches. Hatchlings are released back into the wild each October. Participating communities have permission from the Peruvian government to eat and sell a portion of the egg supply.

Debt-for-Nature Swap

If money grew on trees, Peru's forests most certainly would be nurtured, revered—and left standing. But because that

isn't the case, it's incumbent on conservationists to seek creative solutions to protect natural resources. Enter the complex but effective U.S. Tropical Forest Conservation Act. The congressional act is allowing the Conservancy to transform a \$370,000 investment into \$3.5 million worth of rain-forest protection in Pacaya-Samiria through 2014.

In what's known as a "debt-for-nature swap," the act allows the U.S. Treasury to forgive Peru's debt as long as the money saved is funneled toward conservation projects. By restructuring its debt, the money Peru owes the United States drops from \$28.3 million to \$10.6 million. Peru then agreed to spend \$10.6 million on conservation, which allows the United States to forgive another \$4 million in debt.

The remaining \$6.6 million in U.S. debt is covered with \$5.5 million from the conservation act and \$1.1 million from the Conservancy, World Wildlife Fund and Conservation International. The Conservancy's \$370,000 contribution gives it access to one-third of the \$10.6 million. Payments are disbursed by PROFONANPE, a private, nonprofit environmental fund established in 1994.

Following the Water

Talk about scale. Pacaya-Samiria is a vital part of a drainage area that includes half of Peru and a southern section of Ecuador. Water levels are high during the December through April rainy season, but drop by 15 to 30 feet from May through November. A hydrology modeling project being designed by Conservancy experts in Peru and Wisconsin along with Peruvian partners will help scientists understand the "flood pulse" that washes from the Andes Mountains into the Amazon Basin—a network of tributaries, connected lakes and wetlands.

Scientists study water flow, precipitation, mountain slopes and other geography to understand how water helps natural systems thrive. From there, they can determine sources of stress on the land, and how those stresses can be reduced. For instance, if local people need to farm certain land to earn a living, this sophisticated study can tell them whether shade-grown coffee, pineapples or some other crop would be most compatible.

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