



South America Conservation Region: Northern Tropical Andes

ECUADOR: PODOCARPUS NATIONAL PARK

*Collaborating With Communities to Protect
Rivers and Forests of Treasured Bird Haven*



The Bombuscaro River is one of 28 watersheds flowing in or near Podocarpus, which harbors at least 600 bird species. © ARCOIRIS

THE WORD PODOCARPUS should translate to bird heaven. About 40 percent of Ecuador's 1,600 bird species, including red-faced parrots and solitary eagles, count on Podocarpus National Park for food and shelter. Actually, the park was created in 1982 to shelter the largest remaining forest of three species of the tree genus Podocarpus. Commonly referred to as "Romerillo," Podocarpus is the only native conifer in the Ecuadorian Andes.

Tucked in southern Ecuador near the Peruvian border and spanning 360,000 acres, Podocarpus includes foothill forests, cloud forests, high grasslands and a series of small Andean lakes. It's roughly one-sixth the size of Yellowstone National Park. Huge scrapes of exposed volcanic rockface stand out among steep, green mountainsides.

Migrants such as broad-winged hawks, chimney swifts,

eastern kingbirds and Swainson's thrushes fly between South and North America. That winged exchange cemented a conservation bond between Podocarpus and Pennsylvania's Pocono Mountains, two Nature Conservancy projects sharing at least a dozen migratory birds.

The link was spurred by the 1997 discovery of a new bird species, the Jcotoco antpitta, on the edge of Podocarpus by American ornithologist Robert Ridgely. Ridgely, co-author of "The Birds of Ecuador: Field Guide," is a former member of the Conservancy's board of trustees in Pennsylvania. It's estimated that of the 67 bird species shared by Pennsylvania and Ecuador, 32 are found in both the Poconos and Podocarpus.

Just as some forests rely on fire to stimulate new growth, the vertical forests of Podocarpus depend on naturally generated landslides. The slipping away of the old

earth exposes bare dirt where seeds can germinate and be guaranteed sunlight

Logging, subsistence agriculture, commercial crops such as pineapples, livestock grazing and small-scale and industrial gold mining dominate the area economy. These activities destroy habitat for birds and mammals such as the spectacled bear (South America's only bear species), Andean cat, mountain tapir, marsupial mouse and long-nosed/long-tongued bat. About 97 percent of the park's animals are invertebrates.

Gold mining causes mercury pollution of streams and the four major rivers, the Catamayo, Chinchipe, Zamora and Nangaritza. Deforestation has caused erosion and made portions of Loja province a partial desert. Mudslides are common after heavy rains.

Ameliorating these threats has prompted the Conservancy and in-country partner Fundación Ecológica Arcoiris to engage the entire Podocarpus region in far-reaching environmental education programs centered around natural resource management. Initiatives include training park guards, installing interpretive centers and hiking trails, and teaching local people to monitor water quality indicators and bird populations.

For the Birds

Abundant water and forests at elevations ranging from 3,300 to 11,500 feet make Podocarpus a haven for at least 600 bird species. It's the only protected area in the world where both the endangered bearded guan and the endemic white-breasted parakeet live.

It's also home to 10 species of parrots, 61 hummingbird species, 83 tanager species, as well as the Andean cock-of-the-rock, black and chestnut eagle, gray-breasted mountain toucan, orange-banded flycatcher and rainbow starfrontlet.

The mayor of Zamora has taken an active role in promoting his community as "The City of Birds." Part of the Conservancy-Arcoiris partnership is about boosting bird research. Regularly scheduled bird inventories; studies of nesting sites and patterns; and the monitoring of the relationship between migrant birds and water quality and quantity are a few of the current projects.

Good to the Last Drop

Podocarpus is a veritable water factory. As the director of Conservancy partner Arcoiris explains: "Arcoiris means rainbow. Drops of water are necessary for rainbow formations. Water is life, and Podocarpus for us is water."

Seven major rivers run northeast until they unite with the Amazon River; four other major rivers in the southeast feed the Marañon, which flows to the Amazon; and seven

central and southeastern rivers unite to form the Catamayo-Chira River, which flows west to the Pacific Ocean.

Communities around Podocarpus, including the 1.23 million people of the largest city of Loja, draw their water from the four rivers with headwaters in the national park. Unlike most other Andean watersheds, underground springs here are replenished by rain water filtered directly through the forest floor. Until recently, farmers counted on an inefficient series of gravity-fed channels to irrigate crops and provide water for their animals. Conservancy partner Arcoiris has helped communities conserve water by introducing a more efficient gravity-fed sprinkler system.

Plans are in the works for the Conservancy to work with local partners to set up water conservation funds in the communities of Loja and Zamora. The idea is to model the funds after a successful pilot project the Conservancy initiated at the Condor Bioreserve in northern Ecuador. There, regular contributions from the local water company, electric company and the National Brewery keep the fund steady. The goal is to generate enough interest annually from the funds to finance watershed conservation projects in perpetuity.

Saving Energy

Commercial logging contributes hugely to deforestation, making life more challenging for the endangered spectacled bear. But almost equally destructive are the cutting and gathering of wood by local people for cooking and for heating their homes and schoolhouses.

With help from the Conservancy, partner organization Arcoiris is funding a program to provide fuel-efficient stoves in the homes three small, remote and rural communities—El Libano, La Campana and Zamora Huaycu. The wood-burning stoves, which cost about \$100 apiece, are reducing use of wood by half. This measure keeps more trees standing and saves homeowners time. These communities in the high Andes are so remote that they can only be accessed on foot or by mule.

All three communities also have received varying levels of assistance with growing gardens, composting, nutrition, animal breeding and cattle management.

contact information

Anna Gibson
South America Conservation Region
4245 N. Fairfax Drive, Suite 100
Arlington, Virginia 22203-1606
phone: (703) 841-4109
email: agibson@tnc.org
nature.org