

## DRY TROPICAL FOREST: CEIBA'S NEW FRONTIER

The roar of howler monkeys broke the dawn chorus of birds and announced the arrival of a warm sunny day at the Lalo Loor Dry Forest Reserve. I strained my ears to pick up the sound of the surf, pounding the sandy beach less than a kilometer to the west. It was the first night I had spent in the reserve's new field station - a large airy building made of local bamboo and thatch that was completed just a few weeks earlier. The Lalo Loor Dry Forest reserve is located in the Manabí province of Ecuador and is Ceiba's newest "Lands in Private Hands" partnership. Owned by Mr. Loor, an Ecuadorian dairy farmer, the reserve is one of a few tracts of primary forest remaining along this pastoral coastline. Like El Pahuma the objective of the Lalo Loor project

one of the area's largest municipalities. Monica González, a teacher from Quito, delivered an intensive 5-week program training over 60 teachers using a novel "In Your Backyard" methodology. High school teachers from nearby communities attended the sessions, which culminated in field trips with their



*New research and volunteer building nestled in the Loor forest*

is to conserve threatened habitat while empowering local people to earn sustainable incomes and improve their livelihoods. To this end Ceiba, together with the Jatun Sacha Foundation and the help of volunteers, created the first interpretive trail in the region (the "Mariposa" or Butterfly trail), implemented a teacher-training program and planted a tree nursery for future reforestation work. Our goal for next year is to construct a nature center where visitors can view educational exhibits, sign up for guided hikes and sample some of the landowner's delicious homemade yogurt!

### ENVIRONMENTAL EDUCATION

Environmental education is critical to improving living standards and environmental quality in coastal Ecuador, yet local schools lack adequate resources and teachers have little opportunity for professional development. That's why in October 2005 we piloted a teacher-training program in Jama,



*Pacific Pygmy-Owl seen in reforestation plot*

students to the Lalo Loor reserve. The program was very popular among the teachers, and we have been invited to continue the training. Your donations to support this program are making a difference in this biologically and culturally important area!

### FUTURE CONNECTIONS

With less than 2% of its original extent remaining, the coastal dry forest of Ecuador is one of the Earth's most endangered ecosystems. With the Lalo Loor reserve as the center of outreach activities we will continue to involve local communities in our conservation efforts. Currently we are seeking partnerships with other coastal landowners that wish to participate in our Lands in Private Hands program. Our aim is to pursue a community-based conservation approach that will protect the environment while creating opportunities for "green" development, including ecotourism and sustainable agroforestry.

### TREE-LINED CORRIDORS

Ceiba's broader goal in the Manabí region will be to connect a series of remnant forest patches into a continuous forested corridor. Research shows that corridors greatly enhance the survival of mobile wildlife, particularly in the dry forest where annual droughts force animals to travel considerable distances to obtain food and water. To achieve this goal our first step will be linking the Lalo Loor reserve to a nearby patch by reforesting the narrow pasture that separates these two large sites.

## ECUADOR FIELD COURSE SETS NEW MONKEY RECORD!

Have you ever seen a monkey smaller than a squirrel? If you had been on Ceiba's 2005 field course, you would have! One of the year's highlights was a pair of Pygmy Marmosets seen in the heart of the Ecuadorian Amazon. These tiny mammals are one of the world's smallest primates, measuring less than five inches in length! Found only in the Amazon rainforest, they have a remarkable diet: they feed exclusively on tree sap, obtained by biting small gouges in the trunk. A bit like maple syrup collectors, with tails!

In fact, we set a record this year for monkey sightings, with 11 species seen during the course. Ranging from tiny marmosets up to large Woolly and Spider Monkeys, we were fortunate to see multiple troops crashing through the treetops on nearly every day we spent in the rainforest. We also were able to observe Night Monkeys under a full moon on the Tiputini River!

But let's start at the beginning. 2005 marked the fifth anniversary of Ceiba's summer course, "Tropical Ecosystems: Andes to Amazon." We embarked on our expedition in the high Andean city of Quito, where a diverse group of students from the US, Canada, Holland and Ecuador assembled. Our first destination was the El Pahuma Orchid Reserve, where we explored the misty, mossy, mountainous terrain of the Andean cloud forest. There, we learned standard botanical

techniques for collecting and identifying plant samples, one of many field methods we emphasize in our course.

From the mountains we descended to the Pacific coast to visit Ceiba's newest reserve, the Lalo Llor Dry Forest. Tarantulas, army ants, lizards, birds and howler monkeys greeted us as we

walked over dry and crackling leaf litter. There we practiced methods for sampling and identifying insects -- catching an enormous stag beetle in the process! -- and compared their diversity between pasture and forest habitats.

The following days were spent in Quito, and exploring the high altitude (over 14,000 feet!) tundra-like ecosystem known as páramo. Icy winds and chilling sleet blasted us as soon as we left our warm bus. We quickly appreciated the challenges plants and animals face trying to survive in this unique ecosystem. But the scenery was stunning and everyone had a terrific time (even if we couldn't feel our fingers and toes!).

The next morning is always the most hotly anticipated of the course: the day we descend into the rainforest. We spent ten days at the isolated Tiputini

Biodiversity Station learning to identify its plants and animals, paddling its lagoon and climbing its lofty canopy tower to gain an unmatched view over the top of this phenomenal forest. The Pygmy Marmosets were the big highlight, but everyone had a favorite: from the Ornate Snail-eating Snake to the Turnip-tailed Gecko, the giant Paiche fish to Piranas, from the Black Caimans (crops) to the nocturnal Kinkajou, there were plenty of fantastic sightings. Nobody wanted to leave when it came time to depart this remote and pristine Amazon rainforest site!

Next year we're expanding the course to four weeks, giving students extra time at the coast and in the rainforest; we expect to see more monkeys, snakes, lizards and, just maybe, a jaguar! We feel our students learn more than biology, they are immersed in a rich new culture. Just listen to one of our 2005 participants:

*"My experiences throughout this course were the type that have improved my perception, and will benefit me for the rest of my life."*

**Interested in joining this educational adventure?** For details, please visit us online at [www.ceiba.org/courses.htm](http://www.ceiba.org/courses.htm).



*Seven Students Staring - our first look at monkeys*

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## EL PAHUMA ORCHID RESERVE: UNDER NEW MANAGEMENT

After nearly eight years as Ceiba's central conservation project, day-to-day management of the El Pahuma reserve is now in the hands of the landowners, the Lima family. Ruth Lima serves as the manager, Rene as guide, Roberto as park ranger, and the family's children help out everywhere, from the kitchen to the trails to the botanical garden! Staff from Ceiba still provide regular advice, and annually review the site to assure compliance with conservation agreements, but we are pleased to announce that the project has achieved its long-held goal of producing a steady and sustainable income to the Lima family.

Over 6000 visitors walked the botanical garden and trails of El Pahuma last year, and we expect this number to double in the next twelve months. School trips made up nearly a third of all visitors, with national and international adults comprising the rest. Clearly the reserve is becoming a popular destination for all age groups! Now with a new restaurant -- conceived and financed entirely by the reserve's owners -- El Pahuma has captured the interest of international tourists as well as Ecuadorian families looking for a superb weekend excursion.

### CLOUD FOREST CLEARING FORESTALLED

Last year the owners of 300 ha (750 acre) of cloud forest on El Pahuma's southern border announced they would clear the land for cattle. Ceiba embarked on an emergency fund raising effort to purchase the land, and opened a dialogue to encourage the



### CEIBA IS PLEASED TO THANK OUR SUPPORTERS AND CONTRIBUTORS

- American Orchid Society
- Fauna and Flora International
- The Greenstone Foundation
- Liz Claiborne & Art Ortenberg Foundation
- Meyer Family Fund of Central Indiana Foundation
- Massachusetts Orchid Society
- Missouri Botanical Garden
- The National Herbarium of Ecuador
- New Hampshire Orchid Society
- Quito Orchid Society
- San Diego County Orchid Society
- Twin States Orchid Society
- Universidad San Francisco de Quito
- World Parks

and our generous individual donors!

landowners to conserve their property. To our delight they decided to delay the sale and explore possibilities for protecting the forest on their own. A Dutch conservation organization now pays them a nominal "rent" until a permanent solution can be found. Ceiba is exploring establishment of an escrow fund for generating sustainable payments to these and other landowners, in exchange for a commitment to habitat protection.

### BEAR'S DEN RECEIVES TOTAL MAKEOVER

To accommodate increased demand for lodging in the reserve's upper cloud forest, El Pahuma undertook a thorough overhaul of the Bear's Den cabin, a rustic cabin located at 2400 m (7900 ft)



*Bear's Den Cabin, perched in El Pahuma's high cloud forest*

of elevation that can house up to 12 researchers, students and intrepid explorers. The cabin provides access to the highest parts of the reserve where spectacled bears, mountain toucans and other cloud forest denizens reside. Come see for yourself!

### PAHUMA LAUDED IN ORCHID JOURNAL

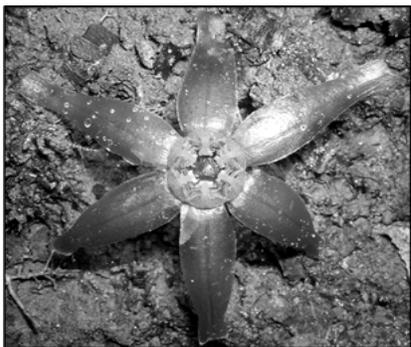
Dr. Philip Seaton, head of the orchid specialist group for the World Conservation Union (IUCN), visited El Pahuma several years ago and penned a glowing account of his trip. Published in the October 2005 issue of *Orchids*, the journal of the American Orchid Society, his article contains stunning photos of the reserve's orchids and an upbeat assessment of the project:

*"While we frequently despair at the loss of tropical forest around the globe, El Pahuma provides a model of what can be achieved with a little imagination ... and a great deal of commitment."*

We are proud to have received praise from such a respected source! If you'd like to get involved at El Pahuma as a volunteer, researcher or visitor, see [www.ceiba.org/elpahuma.htm](http://www.ceiba.org/elpahuma.htm).

## UNIQUE PLANT SPECIES DISCOVERED!

During a recent trip to Ecuador's Amazon rainforest, Ceiba president Catherine Woodward and Boston University professor Kelly Swing stumbled upon a strange little plant. Visible only as a small flower lying close to the soil surface, this plant feeds on underground debris -- more like a mushroom than a plant -- flowering infrequently to reproduce. International experts assigned the plant a brand new genus! The scientific name of *Tiputinia foetida* refers to the Tiputini River, site of the discovery, and to the foul odor used to attract insect pollinators.



*New to science: Tiputinia foetida*

## NEW ECUADOR PROJECT MANAGER

Ceiba is pleased to present Daniel King as our new project manager in Ecuador. A graduate of the Universidad San Francisco de Quito and former ecotourism guide, Daniel first worked with Ceiba providing capacity building to El Pahuma's reserve manager. He now brings his energy and creativity to the role of general manager for all our projects in Ecuador.



## VOLUNTEER AND INTERN UPDATES

Our work depends on the contribution of many volunteers and interns. This year we'd like to extend special thanks to:

- The White Family, four of them, spent weeks at El Pahuma developing a brand-new trail to our tallest waterfall.
- Maria Eley, a field course student, committed a month to improving El Pahuma's orchid botanical garden.
- Caroline Douglas exerted invaluable effort collecting data and images for Ceiba's orchid book, due out next year.
- Caitlin Langlois, a Canada Corps scholarship recipient, worked for months at the Lalo Loor reserve helping develop our regional environmental education program.

Spend time in the tropics and contribute to conservation! Come to Ecuador and volunteer with us -- just go to [www.ceiba.org/volunteer.htm](http://www.ceiba.org/volunteer.htm) or write [volunteer@ceiba.org](mailto:volunteer@ceiba.org) for details.

## THE CALL OF THE DRY FOREST

We all know something about the biological wonders of tropical rainforests, but what about dry forests? Although they are more threatened globally, tropical dry forests are underrepresented in science and the media. Ceiba is working to change that by attracting researchers to the Lalo Loor reserve, where ongoing inventories illuminate its amazing biodiversity:

Paul Hamilton (USA) in his 5-year study, is uncovering a rich community of frogs, lizards and snakes. His photographs, including many species new to science, can be viewed at [www.lizardchasers.org](http://www.lizardchasers.org). Despite annual droughts, this forest is rich in amphibians and reptiles that have special adaptations to survive the dry season.

Luis Madrid (Ecuador) sampled the bird diversity of the Loor reserve. His results indicate the reserve protects endemic and threatened species like the Gray-backed Hawk and Red-masked Parakeet, among others.

Joe Meisel (USA) will lead survey teams to the Loor reserve and nearby forest patches to search for endangered birds like the Esmeraldas Woodstar. Made possible by a grant from the San Diego County Orchid Society, these surveys will help prioritize other forests patches for conservation.

Species lists for the Lalo Loor Dry Forest Reserve now are available online, along with information for prospective researchers (see [www.ceiba.org/loor.htm](http://www.ceiba.org/loor.htm)).

Visit the Lalo Loor Dry Forest Reserve for great hiking, birdwatching and nearby beach-combing along Ecuador's wild and scenic Pacific coast! See [www.ceiba.org/loor.htm](http://www.ceiba.org/loor.htm) for details.

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