



FIELD NOTES 2024
WORDS FROM OUR CEO MARTIN SCHAEFER





2024 ANNUAL LETTER

Dear Friends,

The biodiversity in our world, the diversity of life, is astounding. Recent estimates suggest that there are more than eight million different species of plants, animals, and fungi on Earth. You, I, and the rest of humanity rely on this diversity of life. Through our food, air, and water, the diversity of life sustains us. It also heals us. We find beauty and inspiration in nature. We also derive many of our medicines from nature, medicines that treat everything from cancer to headaches.

Ecuador's rich diversity of life has few, if any, equals. Of the top mega-diverse countries in the world, Ecuador is by far the smallest. This means that the diversity of life here is more concentrated than anywhere else on the planet. In fact, Ecuador is home to more species of plants per square mile than any other country.

Unfortunately, our natural world is threatened. We are facing the sixth mass extinction, and this mass extinction is caused by us.

Right now, however, you have the power to change this trajectory. It is not too late.

While the task at hand may seem monumental, you can make a difference. In fact, individual people can single-handedly prevent endangered species from disappearing forever. That's exactly what people at Jocotoco do every day.

People like Paola Sangolquí, a marine biologist saving wildlife on the Galapagos Islands and in the oceans around them. Or people like Nolberto Ordóñez, a reserve guard protecting the only habitat of a recently discovered hummingbird whose populations are perilously small. Or Fanny Hidalgo, a botanist, uncovering the secrets of growing rare and endemic cloud forest plants. And Robinson Chaquinga, our youngest reserve guard, who discovered a method for propagating an endangered flower, a method that university researchers from across the world could not unlock.

When you give to Jocotoco, you are empowering Jocotoco's family of conservation heroes. You are joining them in the fight to save the diversity of life on this planet.

Will you donate to Jocotoco today to save the world's most important and threatened wildlife from extinction?

FRONT COVER, Plate-billed Mountain-Toucan (*Andigena laminirostris*), Mindo, PC: James Muchmore

INSIDE COVER, *Boana picturata*, Canandé Reserve, PC: James Muchmore

PAOLA SANGOLQUÍ

MARINE CONSERVATION COORDINATOR



Paola was raised in one of the most extraordinary places in the world – the Galapagos Islands. Some of her earliest memories are with her parents and grandparents at the beach, holding hands, splashing in the water.

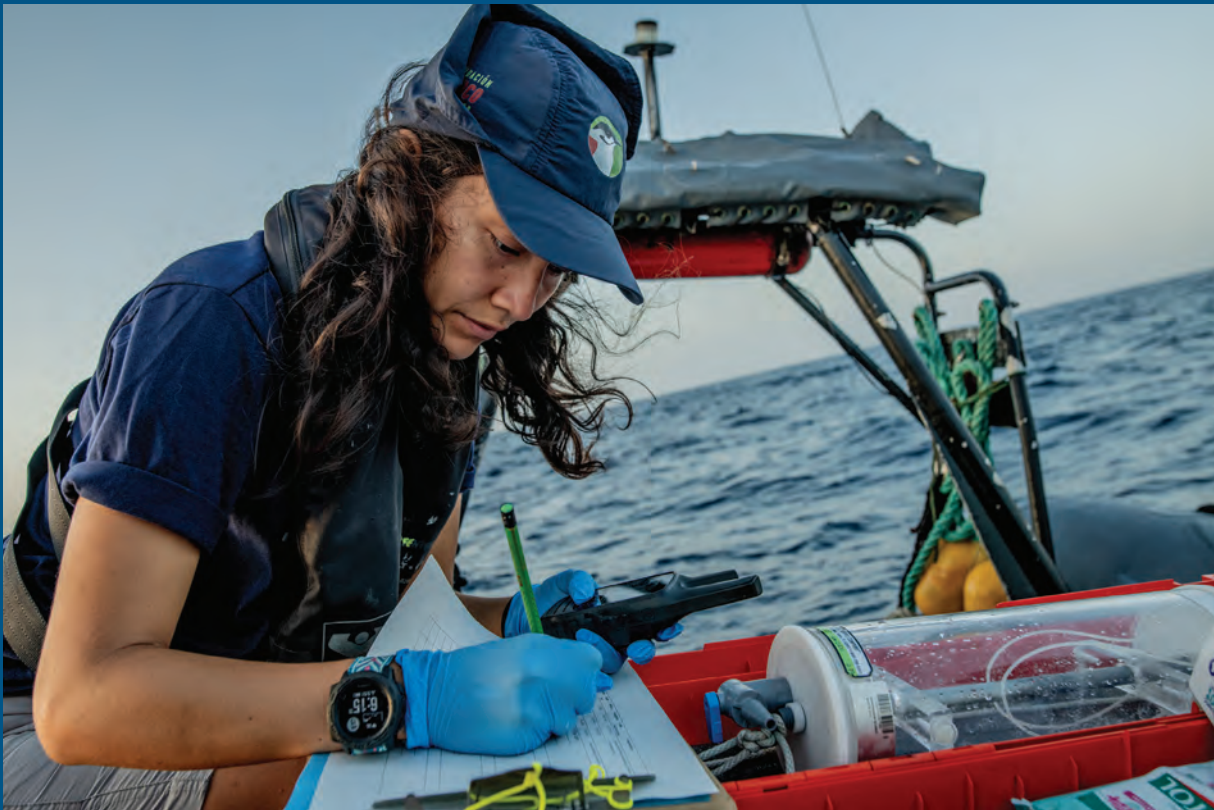
As a young girl, Paola began to explore the islands. She started hiking in the hills outside of her town, alongside giant tortoises. She learned to snorkel, then scuba, encountering massive

whale sharks and manta rays in the deeper waters. She took up surfing, learning to read the energy of the waves alongside sea lions.

Her surroundings were amazing. But she also knew something had changed. Her grandparents told her stories of nearby coral reefs – towering, colorful, teeming with life. Those reefs were by then dead, wiped out by the hot waters of El Niño. The fishers from her

ABOVE, Paola Sangolquí, Galapagos Islands, PC: Tomas Munita / Greenpeace

NEXT PAGE, Paola Sangolquí, Galapagos Islands, PC: Tomas Munita / Greenpeace



town used to catch tuna that were much larger, and more abundant, and closer to shore. She saw photos of birds, birds that could no longer be found on her island.

Paola decided she could help stop this loss, and even reverse it. She became a marine biologist and a researcher. She worked for the Galapagos National Park on land, and she worked alongside the Ecuadorian navy on the ocean. Today, Paola is Jocotoco's Marine Conservation Coordinator.

Paola is part of an incredible team at Jocotoco, a team doing extraordinary work. On any given day you might find Paola meeting with government officials to discuss plans for patrolling the massive marine reserves stretching all the way to Costa Rica. Paola could be writing a proposal to grow climate-resilient corals in underwater nurseries so they can be transplanted to nearby

reefs. She might be meeting with staff to prepare plans for monitoring endangered seabird nesting colonies, like Galapagos Petrels at our reserve on San Cristobal, Waved Albatross on Española, or Galapagos Penguins on Fernandina and Isabela. Or she could be talking with local fishers about how to reduce bycatch to ensure the survival of whales, dolphins, sharks, rays, and sea turtles. In Paola's spare time – late nights and weekends – she is finishing her PhD. All of this, and she is only 30 years old.

Paola is also a mom. She gave birth to Zoe, a beautiful baby girl, three years ago. Paola dreams that Zoe will be able to experience the natural wonders on the Galapagos, like Paola did when she was young. Paola is devoting her life to making sure that dream comes true.







**CLICK HERE OR
SCAN QR CODE
TO DONATE**

WILL YOU DONATE TO REWILD FLOREANA, the sixth largest island in the Galapagos? Together, we will bring back 12 species of endemic wildlife that disappeared from the island generations ago, like the Floreana Giant Tortoise, four of Darwin's finches, and the Floreana Mockingbird. This starts with removing invasive rodents. After years of planning, followed by intensive removal efforts in 2023, we are almost ready to reintroduce the giant tortoise. Earlier this fall, our high-tech monitoring system proved its worth — it detected a tiny population of rodents in the highlands of Floreana. We have to raise \$390,000 by the end of this year to control those invasive rodents. We have already secured \$250,000 of that goal.



FLOREANA



NOLBERTO ORDÓÑEZ

MANAGER OF THE CERRO DE ARCOS RESERVE

It's six in the morning in southern Ecuador, and the sun is just starting to rise on the Amazon, still blocked by the towering Andes. On Nolberto's side of the valley, high above his home, is Cerro de Arcos, Mountain of Arches. Craggy volcanic rocks form spires, cliffs, and natural archways. This is Jocotoco's reserve, home to the recently discovered and critically endangered Blue-throated Hillstar hummingbird, and Nolberto is its protector.

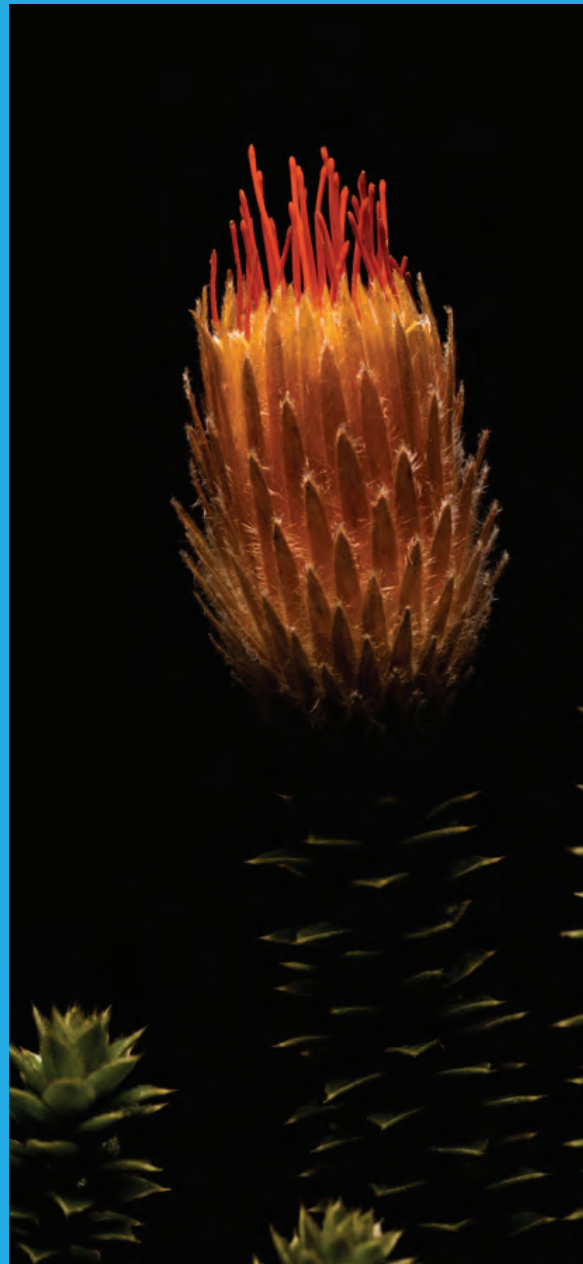
Each morning when Nolberto begins his patrol of the reserve, he mounts his small, brown horse, and heads up the mountain. Nolberto's family has been in this community for generations. As cattle ranchers, they taught him to ride a horse when he was very young.

Low-hanging clouds whip quickly overhead. The wind is cold and constant. The grasses and shrubs of the páramo move together in waves across the top of the mountain. At 12,000 feet (3,600 m), Nolberto is bundled up in multiple layers of warm clothes, his wind-chapped face barely visible behind his hat and scarf.

Nolberto is searching for something extraordinary today – a nest.

The Blue-throated Hillstar was first discovered in late 2017. Its entire range is restricted to the mountains surrounding Nolberto's home, and its total population is estimated to be 80-110 individuals. Jocotoco acted quickly after the discovery, creating the Cerro de Arcos Reserve to protect its habitat in 2020.

At first, no one knew where this tiny hummingbird nested, until researchers discovered its secret – inside the caves and archways of the mountain, hidden from the wind and rain.





Still, very few nests have been located. Nolberto noticed a male Blue-throated Hillstar feeding from a patch of orange Chuquiraga flowers earlier this week, its main nectar source. He saw a female in the same patch just yesterday. This could be a new breeding pair.

Nolberto circled on his horse. Nearby, he saw two large boulders leaning on each other with an opening underneath. Nolberto dismounted and walked slowly towards that opening. Now away from the wind, it became quiet, and still. A small hummingbird zoomed past his ear. Inside the cave, with his flashlight, he saw what he had hoped for: the nest, mounted to the cave wall high off the ground.

He let out a sigh of relief. Nolberto didn't realize it, but he had been holding his breath. Finding this new nest meant that there was hope for the Blue-throated Hillstar.

This October, the Indianapolis Zoo announced that Jocotoco had won a \$1 million prize from the inaugural Saving Species Challenge to protect the Blue-throated Hillstar. Nolberto and the rest of the Jocotoco team will work closely with local communities to ensure the hummingbird's survival and expand the reserve. With Nolberto leading the way, and with you joining us, we know we can succeed because we've done it before. We saved the once critically endangered Pale-headed Brushfinch, reduced to just 50 individuals. Through active management, Jocotoco quickly increased the population fivefold.





FANNY HIDALGO

LABORATORY ASSISTANT IN TAPICHALACA

A dense mist engulfs the forest. Ancient lichens color the tree trunks. Orchids, bromeliads, and vines drip with moisture. This is the Tapichalaca Reserve in the cloud forests of southern Ecuador, and this is where we find Fanny Hidalgo.

Tucked away in a small room under Casa Simpson, the reserve's visitor lodge, is a brand-new laboratory. Because of its small size, we call it the mini-lab. It's in this lab that Fanny leads groundbreaking experiments on propagating rare species of cloud forest plants.

Fanny spends her weekdays at the mini-lab, sleeping at the lodge at night. She returns home only on the weekends when she can spend time with her young son who lives with Fanny's parents in the nearby city of Loja.

Many species of plants in Tapichalaca only exist in this small corner of southern Ecuador, or in Tapichalaca itself. Some of these plants are known from only a few individuals. Fanny's goal is to learn how to grow the rarest plants in her mini-lab, then transplant them in the reserve.

Why do we have to propagate these plants in the min-lab? Many are threatened with extinction. For some species, because of human impacts on their habitat, the wild populations are too small or too fragmented to reproduce naturally on their own. For many orchids, because they are often collected from the forest to be sold, their numbers are decreasing. In the mini-lab, we can propagate these species faster and with higher rates of

success than what happens naturally. We can bring these plants back from the brink.

Fanny has already had success germinating six different species. This includes the *Bomarea longipes*, a critically endangered vine with a beautiful flower that was thought to be extinct for over 100 years, until it was rediscovered in Tapichalaca 20 years ago. Next up for Fanny, she will test ways to propagate seven endangered species of orchids found only in Tapichalaca.

Fanny has always moved around from place to place. Her father was in the military, so Fanny and her siblings were uprooted whenever her father was stationed somewhere new. After receiving her degree, Fanny jumped around from job to job, again moving around to different parts of Ecuador. This put a strain on her, her family, and her young son. At Jocotoco's mini-lab in Tapichalaca, Fanny found stability. She told me that for her, this is more than a job opportunity. It is an opportunity for a new and better life for her, and for her son.





ROBINSON CHAQUINGA

CANANDÉ RESERVE GUARD

Dracontium croatii, a plant that some call bizarre, only exists in Chocó rainforests. Most of the year it resembles a short papaya tree, until its single massive flower unfurls. Its local name in Spanish, camacho culebra, loosely translates to snake flower. People derived medicine from this plant. For generations, its potato-like roots were used to treat snake bites, delaying the spread of the venom until the bite victim could reach a hospital for treatment.

Unfortunately, *Dracontium croatii* is endangered. There are only a few mature, flowering individuals known in the wild. The plant was overharvested for its use to treat snake bites, and much of its forest habitat has disappeared. The Ecuadorian Chocó was entirely forested in 1938, but by 1988, only 50 years later, 95% of the lowland forests in western Ecuador had already been cut. And deforestation continues. On average, the region loses 2.5% of its forests each year.

If we do nothing, the *Dracontium croatii* will slip away into the history books. To prevent this, scientists from around the world studied the plant and developed methods to propagate it from seed. Those methods didn't work.

That's when Robinson Chaquinga stepped up. Robinson began working for Jocotoco two years ago as a guard at our Canandé Reserve in the Chocó. He was only 18 years old, our youngest guard. He has lived his entire life in the community outside of the reserve. His parents were farmers, and Robinson developed a knack for growing plants.

Robinson decided he would try to grow *Dracontium croatii*, to save it from extinction. Scientists believed the nut, which contains two seeds, had to first pass through the digestive track of small animals. Robinson didn't think so. He placed the nut in a dry box for one day, followed by ten days in a sealed Ziplock bag. He then removed the two seeds from the shell and planted them in a special mix of soil and sand. He waited for them to germinate, hoping his method would work. A day passed by. Then a week, and a month. Finally, after four months, tiny green sprouts emerged. He figured out how to grow this rare plant when no one else could.

Robinson now grows *Dracontium croatii* in Jocotoco's nursery at Canandé. To date, we have planted 120 small plants in the reserve, and we have 160 more waiting in the nursery right now. With Robinson's help, a local botanical garden is also growing seedlings and will be able to distribute them beyond our reserve, alleviating the threat that habitat fragmentation poses on this plant. Because of Robinson, there is hope for this amazing and threatened species.







You can protect endangered species in the Chocó by donating to protect and restore their habitat. Together, we will create a 'Ring of Defense' by buffering and connecting existing protected areas to form a contiguous conservation network spanning more than 1.2 million acres (500,000 ha). This will create a wildlife corridor ranging from just than 200 feet above sea level to more than 16,000 feet (50-4,900 m) in elevation, giving plants and animals a chance to survive as climate changes.

Saving nature is not about altruism or philanthropy. It is about our own well-being, our survival.

We are not surrounded by nature – we are an integral part of it. As human beings, our fates are tied to the fate of the natural world. History has proven this to be true. Environmental degradation leads to soil erosion and less rainfall, and ultimately, less food for people. Empires use vast forests to build their houses and ships, and to heat their homes and industries. When those forests disappear, those empires also fade. Across the world, entire civilizations have gone through cycles of boom during times of plenty, and then inevitable doom when they deplete their natural resources.

In Ecuador, the connection between environmental degradation and instability is strong today. Severe droughts have strained the power grid which relies on hydroelectricity. Wildfires are spreading where they were once unheard of. Businesses, agriculture, and everyday life are being disrupted. The rate of people leaving Ecuador is high and is on the rise.

What happens in Ecuador impacts all of us. On the Galapagos Islands, environmental changes are more abrupt than almost anywhere in the world, and we can watch evolution take place in real-time. If wildlife on the Galapagos goes extinct, we lose irreplaceable knowledge about the way our world works. In the Chocó, if we lose *Dracontium croatii*, the snake flower, we lose countless medicines that can be developed with its anti-venom properties. If we lose the Blue-throated Hillstar, or Tapichalaca's rare orchids and vines, we truncate the tree of life. This will change our future in countless and unknown ways.

There are 8 billion people on this planet. If individuals like Paola, Nolberto, Fanny, and Robinson can save species from extinction, so can you. So can millions more just like you.

Ecuador is the world's epicenter of biodiversity, and at Jocotoco, we protect, connect, and restore ecosystems across entire landscapes. On land, we create wildlife corridors stretching from lowland rainforests and dry forests to the tops of Andean mountains, and in the ocean, we protect corridors from the Galapagos Islands to Costa Rica. We restore ancient migratory routes. We expand breeding territories. We reconnect fragments together.

Together, we can halt the sixth mass extinction.

Will you give to Jocotoco today to ensure that future generations – our children and grandchildren – can lead healthy and joyous lives, and experience the wonders of nature, just like you and I have?

With best wishes,



Martin Schaefer, CEO



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Go to our websites and click donate: jocotoco.org.ec or jocotococonservation.org

You can also mail a check payable to:

Jocotoco Conservation Foundation
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We accept gifts of stock, donor advised funds, qualified charitable distributions from your IRA, and gains from crypto currency. You can also join 'The Condors', Jocotoco's Legacy Society, by adding Jocotoco to your estate plans and by including us in your will.

Please contact Jajeane Rose-Burney, Director of Jocotoco US, at **1 (716) 247-1255** or jajeane.rose@jocotoco.org if you have any questions about how to donate.

Jocotoco Conservation Foundation is a US tax-exempt non-profit organization, under the section 501(c)(3) of the Internal Revenue Code. All charitable donations are deductible to the full extent allowed by law. EIN: 83-2027203



Bomarea longipes, Tapichalaca Reserve, PC: Martin Schaefer