

Saving the Ecuadorian Chocó

Goal: to secure enough lowland Chocó forest to ensure its long-term ecological sustainability

The Plan: Take advantage of a rare opportunity to buy 56,833 acres of lowland Chocó rainforest. This will connect three existing protected areas in the Ecuadorian Chocó that together span over one million acres across an altitudinal gradient from 100-4900 metres. The seller is a logging company whose logging roads we have been blocking through strategic land purchases over the past 18 months. The broader plan includes securing a buffer to the large and intact Cotacachi-Cayapas ecological reserve through acquisition of properties—there are a dozen under consideration—to add to the Canandé Reserve. The resulting landscape-scale forest reserve complex has yet to be named.

Funds Needed: The total cost is \$16,000,000 of which \$4,600,000 is committed and another \$5,000,000 is likely but not yet confirmed. The remaining amount needed is \$5,400,000.

Proponents: Fundación Jocotoco is the implementing organization that will negotiate land purchases and own¹ and manage the conserved lands. The International Conservation Fund of Canada (ICFC) is a key contributor and is working with Fundación Jocotoco to meet our fundraising goal.

Urgency: With less than 2% of the original lowland Chocó forest remaining and annual deforestation at 2.5%, the Ecuadorian Chocó² must be saved now or never. The pending divestment of land by the logging company has led to reduced control and an acceleration of deforestation by colonists. This will be made worse by a planned bridge across the Río Canandé, the only access route to the area. Conversion to oil palm is the most significant threat.

Conservation significance:

The Ecuadorian Chocó forest is one of the five most threatened hotspots on Earth and the second most biodiverse³. The Chocó has more endemic birds (62) than any other Endemic Bird Area in the world⁴. Canandé reserve protects at least 14 globally threatened bird species, some found only in (i.e. endemic to) the Chocó region, and over 100 species of mammals, including the most important population of the Critically Endangered brown-headed spider monkey – among the 25 most endangered primates in the world. The area encompassing Canandé has the highest number (134) of amphibians and reptiles west of the Andes. The number is likely to rise with further field investigation, as with as the rediscovery in November 2018 of the Endangered horned marsupial frog not seen in Ecuador for over decade. At least 28 globally threatened amphibian and reptile species are found in the Canandé Reserve alone. The reserve protects the largest population of two Critically Endangered magnolia species

"I cannot imagine a more urgent conservation initiative. The Chocó plants and vertebrates are awe-inspiring in richness and heart-breaking in their endangerment."

-- E.O. Wilson

"This particular conservation opportunity is just about as important as any that has arisen in the past century".

-- Nigel Collar

¹ Private nature reserves are secure and are generally better protected than are public protected areas.

² Deforestation of Colombia's much less extensive Chocó lowlands is on the rise since the peace treaty with the FARC.

³ Mittermeier et al 2005. Hotspots Revisited. Conservation International.

⁴ Stattersfield et al 1998, Endemic Bird Areas of the World: Priorities for Biodiversity Conservation. BirdLife International, Cambridge.

(*Magnolia canandean* and *M. dixonii*) and of the Endangered *Ecuadendron acosta-solisianum*, with a population of a few hundred individuals in two widely separated areas.

Despite being highly threatened, there remains extensive forest in very good or pristine condition. Forest regeneration occurs readily, thanks to the healthy and diverse surrounding forest matrix. We have ample evidence of rapid forest recovery on pastures of different grass types, slope and age. Another indicator of the healthy forest ecosystem is the presence of apex predators such as jaguar and harpy eagle.

This project is globally significant because a single large purchase allows us to connect the lowland rainforests of the Canandé area to the foothill, subtropical and high Andean grasslands protected within the large governmental Cotacachi-Cayapas Reserve. Nowhere else in the Chocó is the entire range of ecosystems protected along a very large altitudinal gradient.

Long-term sustainability

Fundación Jocotoco employs 15 park guards in Canandé, some of whom work as para-biologists to reforest globally threatened tree species, collect data on the numbers and movements of threatened animal species, and conduct environmental education in neighbouring communities. We foresee a need for 25-30 park guards by the completion of this project.

Three initiatives will ensure long-term financial sustainability. Fundación Jocotoco has established an endowment fund for reserve management and intends to allocate funds to endow the large reserve being created through this project. Second, we will establish the first research station in the Chocó, which will be a net source of revenue. Third, Jocotoco's partners Verdecandé and WholeForest are developing a model of sustainable forestry in the buffer area of our reserves. Their model is based on 20 m³ of timber extraction per ha on a 20-year rotation. Timber will be hauled by cables, thus avoiding road construction which would make the forest vulnerable to development. Buffer areas around our core reserves will be leased to Verdecandé. Annual payments of the 20-year lease will cover the salaries of our park guards.

Fundación Jocotoco

Fundación Jocotoco is an Ecuadorian conservation NGO established in 1998 to protect Ecuador's most threatened habitats and species. Jocotoco has established a network of 13 strict reserves totalling 22,000 ha. The organization has reforested more than 1,500,000 native trees of 135 species, creating ~10,000 acres of forest. It also restores high Andean wetlands that have been degraded through centuries of grazing, burning, and draining. Jocotoco has 60 employees, 44 of them park guards, and owns five eco-tourism lodges and a tourism company (ecotourism finances about 15% of operational costs). Strong population increases of megafauna such as jaguar, spectacled bear and mountain tapir testify to the success of Jocotoco reserves in maintaining healthy ecosystems.

Other organizations

A strong involvement of research organizations – Universidad San Francisco and Escuela Politécnica Nacional (both Quito), the National Biodiversity Institute (INABIO, Quito), Tulane University (US), Kew Gardens and Sussex University (UK), Darmstadt University (Germany), and Tropical Herping – assists our understanding of the fundamental ecological processes in the Chocó rainforest.

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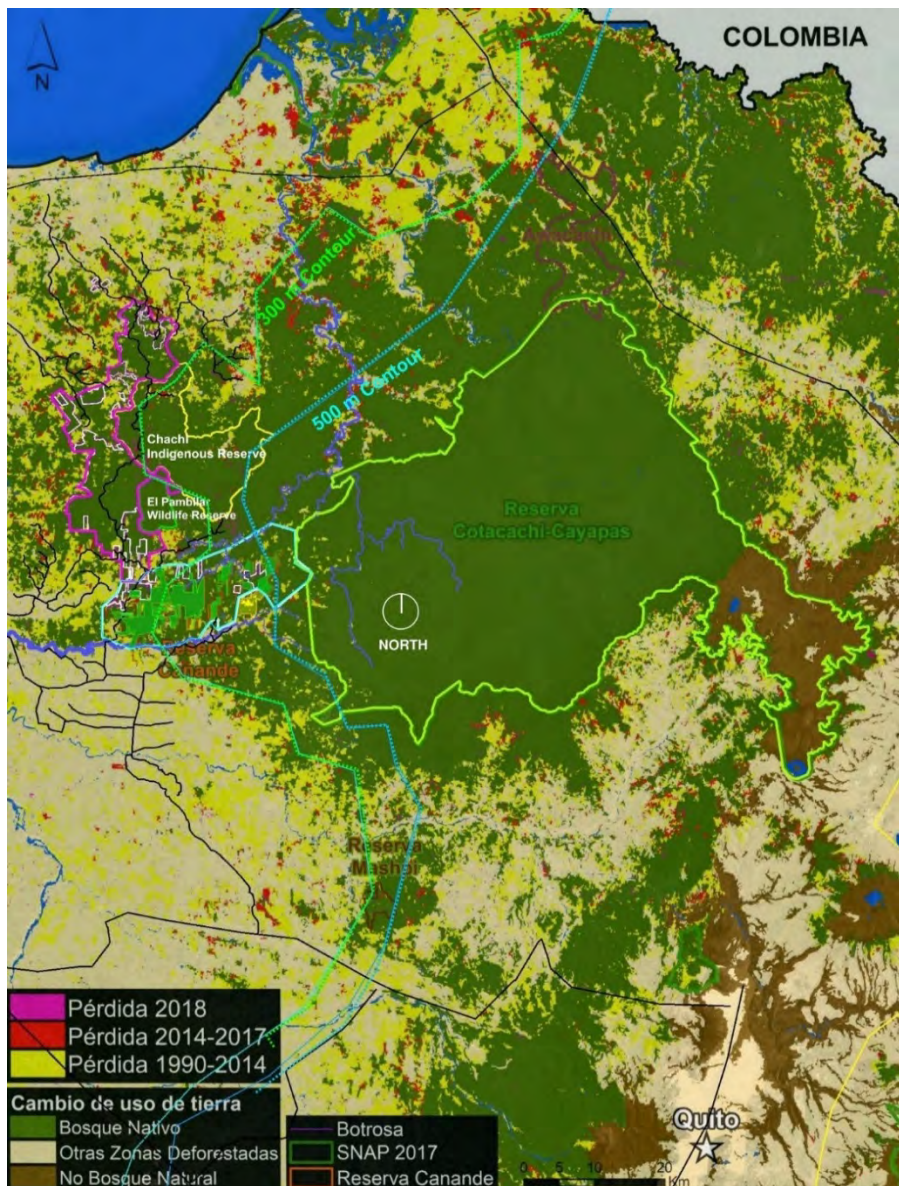
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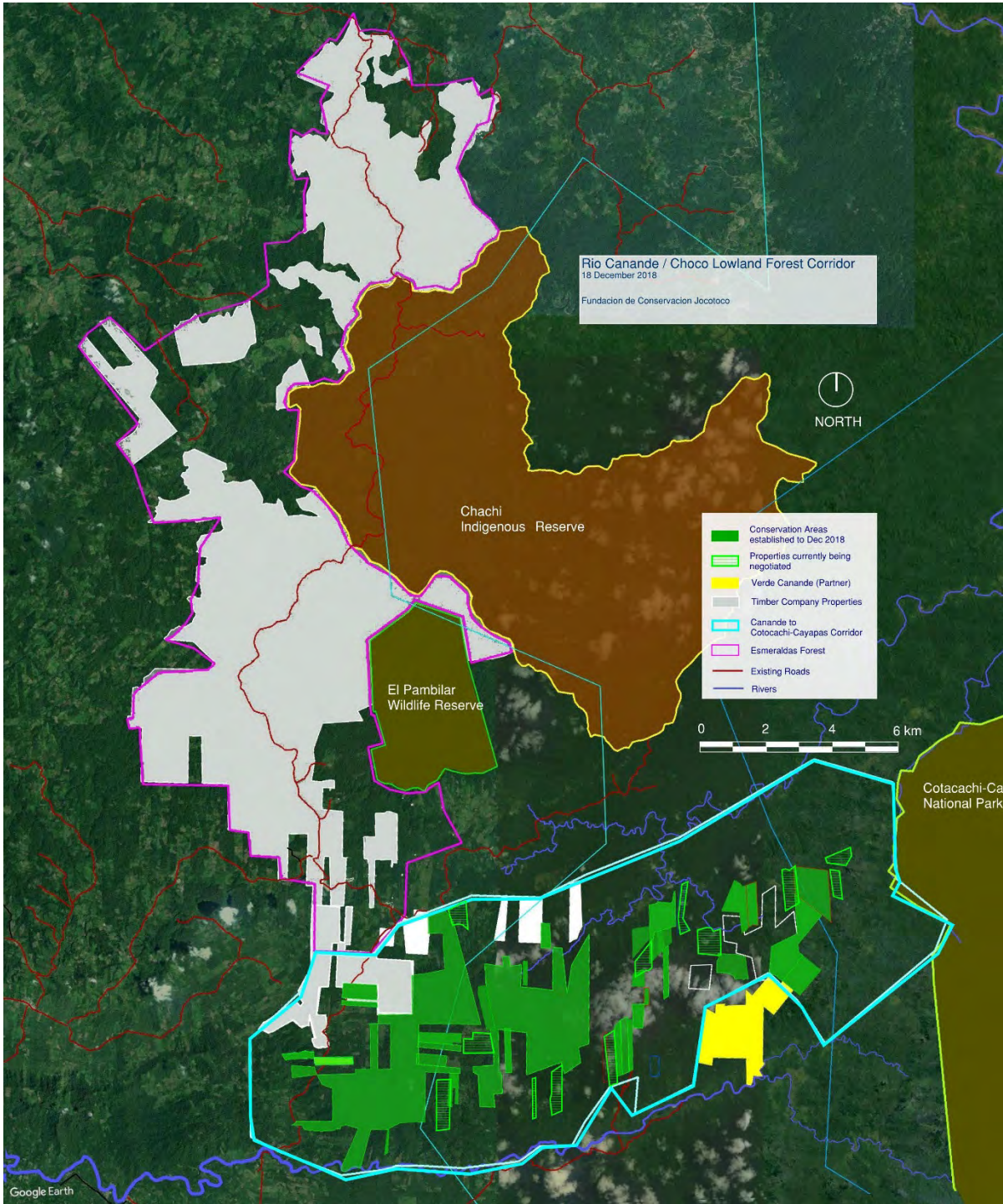
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Figures and maps, Saving the Ecuadorian Choco

Figure 1. Rapid deforestation just north of Canandé reserve in December 2018



Map 1. Habitat and deforestation in the Ecuadorian Choco. The 56,833 acres for sale are outlined in purple. They will link the governmental El Pambilar Reserve to the Canandé Reserve owned by Fundación Jocotoco (lime green properties). We have secured funding to connect Canandé Reserve to the Cotacachi-Cayapas Reserve (outlined in bright green). The indigenous reserve is shown in yellow. Deforestation data are based on data from the Ministry of Environment and the global data set by Hansen et al., 2013 *Science* 342(6160): 850-853.



Map 2. Governmental reserves are shown in olive. The 56,833 acres for sale are shown in grey and white; these properties are the Esmeraldas forests that would link the governmental El Pambilar Reserve to the Canandé Reserve (outlined in green) owned by Fundación Jocotoco. We have already secured funding to connect Canandé Reserve to the Cotacachi-Cayapas Reserve within the turquoise boundary. The indigenous reserve is shown in brown, while properties for sustainable forestry owned by our partner Verdecanandé are shown in yellow. The road system is shown in red.



Figure 2. Key estate properties owned by the logging company along the only road.



Figure 3. Very good forest owned by the logging company and now highly threatened by road development.



Figure 4. Four of the globally threatened birds that have found a home in Canandé: Scarlet-breasted Dacnis, Banded Ground Cuckoo, Harpy Eagle (NT), and Great Green Macaw.

Figure 5. New logging roads access primary forest. This aerial from July 2017 is outdated; new roads have been built and the forest on this picture is mostly gone by November 2018



Figure 6. Recently cleared forest northeast of Canandé reserve. This site is in the area shown in Figure 5. The forest was converted into cacao plantations.



Figure 7. Deforestation extends from the road into the forest. The ridge in front is roadside property that is covered by an older cacao plantation, the deforestation behind the house is recent, while the ridges in the distance are Canandé Reserve.



Figure 8. Three years after purchase, the largest (60 ha) pasture within Canandé reserve shows very good signs of natural regeneration.



Figure 9. Jaguars are recorded every week on our camera traps.

Figure 10. This young harpy eagle fledged within Canandé reserve from the first known nest west of the Andes in Ecuador, in December 2018.

