

Back from extinction! How one species of toad can create hope

by Carlos Zorrilla,
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For the past 38 years, most days I walk through the forest. When I go, I seldom leave my house without a camera, and this has made it possible to record everything that I see there. You may imagine that after almost four decades of frequent visits and paying attention to the wildlife there would be nothing new to see. In most ecosystems this would hold true. But not so in Intag's cloud forests where I live and work.

A few days ago, for example, I photographed a lizard I've never seen before. Two days earlier, I saw and photographed a katydid species of grasshopper for the first time. And, a couple of weeks before that, I found an orchid species I'd not seen, growing right next to a trail I've trodden at least a thousand times. These species could all be new to science. In 2016 I also saw a species of amphibian that, likewise, I had not spotted before. It is no different at night. For years I've been using a trap light to attract and photograph moths, and rare is the night that I don't see a species of moth for the first time.

The reason for such unusual diversity has much to do with Ecuador's equatorial location, the great changes in altitude due to its mountain topography, as well as the distinctly different rainfall regimes. For these reasons, Ecuador is one of the world's 17 mega diverse countries. It has more orchid and hummingbird species than Brazil, which is 32 times larger. At the same



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The *Atelopus longirostris*, thought extinct since 1989

time, the Andean nation has the unenviable distinction of having more species of animals and plants facing extinction than any other country on the planet. According to the latest statistics, it has 2,301 species threatened by extinction: that's more than Brazil, Mexico or the United States. The main culprit for this tragic loss is deforestation, but it is also a fact that Ecuador's ecosystems and species are some of the most studied in the tropical countries, which makes it easier to catalogue species loss.

While most of Ecuador's threatened species are plants (1842), a large number are mammals (45), birds (96), reptiles (26), fish (52), mollusks (48), invertebrates (17), plus 6 protists and 174 amphibians. This represents a significant percentage of Ecuador's total known species.

Many of the same factors threatening biodiversity in other countries also threaten Ecuador's species: logging (legal and illegal), hunting; invasive

species; expansion of agriculture and ranching; industrial activities (such as oil extraction); and climate change. As if this is not enough, amphibians, and frogs in particular, face another devastating threat: a lethal fungus that is wiping out species all over the world. In addition to these deforestation Horsemen of the Apocalypse, in Intag, *Atelopus* and other species are also facing the most environmentally destructive economic activity of all: large-scale open pit mining.

This brings us to a frog that was rediscovered in Intag's forests in March 2016. Until the data is revised, the Longnose Stubfoot Toad (*Atelopus longirostris*) is listed as extinct on IUCN's Red List. It will soon be "demoted" to Critically Endangered, which means it will be listed alongside the brown-face Spider Monkey, which also inhabit these forests, as well as many other species in the rapidly diminishing western forests of Ecuador. *Longirostris* was listed as

extinct because the last time it was seen was in 1989, despite concerted efforts to find it. It is a peculiar name for a frog that only measures about 35 mm from the tip of its long "nose" to the end of its abdomen. But rediscovering this little frog after 27 years searching was heartening news for biologists who are more used to the terrible extinction of amphibians.

The frog was found by a biologist DECOIN hired to undertake an amphibian inventory in the Junin community-owned forest reserve in a project supported by Rainforest Concern. He was only able to find two females and two males, but speculated that there would be healthy populations in other isolated areas of the forests. He also believed that, with enough time, several other new and "extinct" species would be discovered. In the five days quick inventory, the biologist went on to find eight more frog species on the IUCN Red List of threatened species. Three of the frogs are now in an amphibian center in Quito where they hope to establish a breeding programme, even though 25 of each sex is usually required for successful reproduction. Unfortunately, a fourth specimen died while at the lab. The 1500 hectare reserve where the frogs were found is one of the first forest reserves that DECOIN, with help from Rainforest Concern and other donors, purchased for the community in 1997-1998.

In spite of this success story, it is worthwhile calling attention to the fact that only three individuals of this species are known to exist on Earth. And they were found in a forest threatened by total and irreversible annihilation, a forest which holds many more critically endangered and threatened species.

As many of you know, Intag's forests are at the epicenter of a large, open-pit copper mining project that now also threatens most of the Intag region. The mining activity is still in the exploration stage, and is fully funded by Chile's state-owned

CODELCO mining company; the world's largest copper producer. Proposing this mine in primary forests harboring perhaps hundreds of species facing extinction is only a manifestation of a much more lethal condition that I see as monumental stupidity and gross short-sightedness. For these are some of the last remaining forests in western Ecuador, a region that harbours many more endangered species per hectare than the better known Amazonian forests, and which also happens to have fantastic ecological tourism



Susan Fraser

In the heart of Intag region

potential. Where CODELCO is looking for copper is not only rich in primary forest, but also in pristine rivers and streams. If there ever is a tribunal to judge crimes against nature, this one will undoubtedly rate as one of the worse.

The discovery of *longirostris* underscores the importance of conserving as much forest as possible in biodiversity hotspots such as Intag. It also validates the support our donors have been directing to conserving Intag's forests and wildlife.

These, then, are the kinds of forests that we, with your support, are helping conserve. And please, don't think for a moment that buying forests is the only thing needed to help

the Longnose Stubfoot Toad and countless other species survive. We need to continue to raise awareness at all levels of society, secure firm and active international support, conduct scientific studies and put in place strong legal defense. Without these, we might as well write off the Intag cloud forest and similar forests that are home to the species like the Longnose Stubfoot Toad and the thousands of other species that depend on us, *Homo sapiens*, for survival.

Sources

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In spring 2015, Carlos Zorrilla talked about his work, and the threats of the extractive industries to the forests of Ecuador to a crowded audience at the University of London's Senate House.