

ZAMARRITO: The male Black-breasted Puffleg is a mostly dark hummingbird with tufts of white “boots” above its feet. The species is critically endangered.



# An unclear future

Despite its popularity with the public, Ecuador’s most endangered endemic hummingbird is rare, extremely localized, and not well known by scientists — even those who are trying to protect it

BY BRIAN KLUEPFEL

I’m awakened by groups of revelers dancing through the cobblestone streets of Otavalo, a small town two hours north of Quito, Ecuador. Inti Raymi, the solstice festival of the sun, is hailed each year in late June with the pounding of drums, the invocation of pan pipes, and strumming of guitars, while twirling, singing celebrants costume themselves in colorful hats, masks, and the traditional woolen chaps that mountain cowboys have used for centuries here to ward off the Andean chill: zamarros — rough, malodorous leggings that form a thick white stripe down the outer thigh and calf.

In fact, Quito’s official bird takes its name from the zamarro. Just the day before, I had clambered around Jocotoco Foundation’s Reserva Yanacocha, looking for the Black-breasted Puffleg, Ecuador’s most endangered endemic hummingbird. Locals call the bird the *zamarrito pechinegro*, in honor of its “boots,” a noticeable tuft of white feathers just above its feet. Its

only verifiable range is about 70 square kilometers near the parish of Nono, on the slopes of Pichincha, a volcano that towers over Quito.

Inti Raymi has been celebrated for centuries, its legacy withstanding attacks by the Catholic church and occasional apathy of Ecuadorians. It remains to be seen whether the little bird named for the zamarro will have the same staying power.

I walked around Yanacocha with Michael Möens, Jocotoco’s conservation director. Although we had a good birding day and saw several hummingbird species, including Golden-breasted and Sapphire-vented Pufflegs and Tyrian Metaltail, no *zamarrito pechinegro*s were to be found. This isn’t a surprise: Although the best

time to see the birds is between May and July, the latest estimates put the entire population at 268 or fewer birds, and it’s not known if any exist outside the tiny range of the Pichincha Volcano.

In fact, little is known about these pufflegs, which makes formulating a conservation plan a bit vexing. Counting them is difficult. Currently two methods of counting are used: fixed-point counts, during which reserve guards report sightings, and camera-trap data, where sophisticated super-light lenses positioned on flowers record the comings and goings of many hummingbird species, Black-breasted Puffleg included.

The cameras have another advantage: they can single out which kinds of flowers the birds like to feed on. Möens told me

that two species of plants have been identified as the zamarrito’s specialties. One is *Macleania rupestris* (also known as *chaquilulo*). This montane shrub, common from Nicaragua to Peru, can grow up to 2 meters tall and

produces tubular flowers and edible fruit, hence its other common name, *uva camarona* (“shrimp grape” for its odd-shaped berries). While the *chaquilulo*’s fruit can be used medicinally to treat lung ailments and as a poultice for wounds, as well as turning out a delicious marmalade and hearty wine, the shrub is also burned as fire wood.

The other Black-breasted Puffleg feeding favorite, *Palicourea fuchsioides*, is in the coffee family, and like the zamarrito, it’s endemic to Ecuador and critically endangered.

If more of these flowers can be planted during breeding season (December to February) and a corridor constructed from their highest known elevation at

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**‘We’ve never even found a nest. This bird is an enigma.’**

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**A JEWEL WITH WINGS:** A female Black-breasted Puffleg feeds at a flower while grasping a stem. The species appears to prefer to feed from two species of plants, one of which is critically endangered.

3,600 feet down to 1,800 feet, this could create more of a chance for the birds by uniting a fragmented habitat. “Land purchase and active management can really save a species,” says Möens.

The zamarrito does have nominal support in the highest echelons of government: on June 23, 2005 — the cusp of Inti Raymi — it was declared an emblematic species of Quito, which may be the only place where it still lives. “It’s endemic to the metropolitan district,” says Juan Manuel Carrión, former curator of ornithology of the Ecuadorian Museum of Natural Sciences and director of the Quito Zoo.

Carrión notes that the zamarrito might exist elsewhere in Ecuador. Historically, sightings were reported on the Atacazo Volcano, 25 kilometers south of Quito, and farther north, in Imbabura province. Birds were mist-netted in the Cotacachi-Cayapas Ecological Reserve, on the border of Imbabura and Esmeraldas provinces, in 2007. However, this area is threatened by the selling of mining “concessions” to foreign firms in a bid to shore up Ecuador’s massive debts;

these concessions, which grant all mineral rights below the surface to the buyer, also may affect Yanacocha.

Robert Ridgely, author of *The Birds of Ecuador* and the Jocotoco Foundation’s founder, says that Intag needs to be explored. “We feel there could be a substantial population up there. No one seems to be focusing on that, but there’s quite a bit of intact habitat there.”

Even within a known range, the Black-breasted Puffleg is hard to pin down, as it moves up and down slopes according to what plants are in blossom. As noted in a 2007 scientific paper by German ornithologist Olaf Jahn, “its local and seasonal appearance might be linked to staggered flowering periods of certain plant species along altitudinal gradients.” Carrión summarizes, “We need to study more. We don’t even know its exact movements.”

It’s striking when it is observed: Both the male and female have lovely purple or violet-blue gorgets (throat patches), in addition to the black chest and the charming white boots. The male appears darker overall and has hints of blue on the

wing and undertail. The female is a bronzy green on much of its body. Both sexes have a forked, seemingly black (or dark blue) tail.

#### A CITY’S EMBLEM

Hummingbirds rank high in the public imagination of Quito. Fifty-five species live in and around the capital city, making it the most hummingbird-friendly urban locale in the world.

“In the Festival of Quito, the bird is usually represented as someone dressed in a zamarrito costume, or a car decorated as such,” says Carrión. He ventures that the majority of the population knows of the bird’s official status, so much so that the question was asked on Ecuador’s version of *Who Wants to Be a Millionaire?*: “What is the emblematic bird of Quito?” (The contestant answered correctly.)

The suburb of Sangolquí has a 10-meter sculpture of a hummingbird surrounded by multi-colored eggs; in fact, I was stunned to see it as my southbound bus bypassed Quito on an earlier leg of my journey. In 2012, the ARTICULTOR

artists’ collective exhibited 65 different hummingbird statues, each uniquely painted, in an exhibition entitled “Jardin de Quindes” (“Hummingbird Garden;” *Quinde* is the indigenous Kichwa word for hummingbird).

Public art is all well and good, but what officials will do about the bird’s habitat loss is yet to be seen. The areas around Nono and Pichincha have been dedicated more and more to slash-and-burn agriculture and the production of charcoal, which both involve the cutting and burning of trees; it’s possible that more than 90 percent of the zamarrito’s habitat has been lost in the last decade.

To Quito’s credit, the mayor did take Jocotoco’s side in a dispute with the local electric company, which wanted to hack up to 4 meters of foliage from the trail borders leading through Yanacocha, potentially devastating to wildlife habitat. A compromise was reached on the design and insulation of power cables, and much plant life remains untouched. Fortunately, because Pichincha is an important aquifer for Quito, politicians pay attention to what happens on the reserve.

Not all is rosy, however. “Unfortunately, people still cut trees secretly to make coal, and farmers have feral dogs. Though these are not direct attacks on the bird, it still damages their habitat,” says Carrión.

Ridgely says, however, that there is no evidence that the bird lives in intact forests, so the impact of charcoal production or tree cutting cannot be quantified. “We’re not aware that it’s a threat,” he says.

#### BETTER CROPS, FEWER FIRES

An Ecuadorian nongovernmental organization, *Aves y Conservacion* (Birds & Conservation, founded by Carrión), is working with local communities to produce more sustainable and durable foraging crops so that grazing cattle are confined to a smaller space. Additionally, the group has installed 15 irrigation systems on farms near Nono to produce maximum pasturage per acre. There is also an educational program on fire prevention, because during dry season, the spread of a single blaze can damage acres of the bird’s already-tiny ecosystem.

*Aves y Conservacion* worked in conjunction with Wildlife Without

**‘You have to be an attentive birder, because it’s easy to confuse with some other similar species.’**

Borders and the U.S. Fish and Wildlife Service on a multipronged solution in 2014-2016 in the communities of Alambi, Yanacocha, and Nono, including organic reuse, soil enrichment, and a reforestation program that planted 10,000 native plants.

Other than maintaining habitat, is there a viable way to breed the puffleg and reintroduce it? Unfortunately, Möens says this is not realistic: At least 20 birds would have to be captured for such a program, an ethical no-go for a species with so few members. Additionally, not much is known about the puffleg’s mating habits. “We’ve never even found a nest,” says Ridgely. “This bird is an enigma.”

Education is an important component of the hummingbird’s conservation as well. Of the 5,000 annual visitors to Yanacocha, says Möens, approximately half were school groups.

One strategy that could help the species, says Carrión, is the production of marmalade from the fruit of the trees the birds like so much, because it would increase the value of the trees. Another is to raise awareness among birders. At a recent Birdfair in Great Britain, for example, Black-breasted Puffleg was listed as a “Top Ten Sighting” when birding Quito: a real gem on anyone’s life list.

In addition to Yanacocha, the bird has been spotted farther downhill at the Reserva Verdecocha, for those interested in making a rather taxing trek. “The bird seems to favor these ridge lines,” says Ridgely. He notes that even when seen, the birds don’t stay for long. Because of their size (8-9cm), they are often driven off by larger hummingbirds. Ridgely first saw the bird in 1976 and has seen it a number of times since — but only in Yanacocha and not in recent years.

Carrión also has been fortunate enough to see the puffleg. “You have to be an attentive birder, because it’s easy to confuse with some other similar species,” he says. Also an artist, Carrión has painted the bird and has created more than 35 bird posters, many based on observations from his home garden in a Quito suburb and another property

## PROTECTING ECUADOR’S BIRDS

The Jocotoco Foundation, an Ecuadorian NGO, was founded in 1998, initially to conserve the habitat of the Jocotoco Antpitta, a bird Robert Ridgely discovered in 1997 with four companions on the eastern slope of the Andes. (Local farmers called the antpitta “jocotoco” in imitation of its unique vocalizations.)

The organization has grown to include 12 reserves around the small South American nation, which, although only the size of Colorado, counts more than 1,600 avian species. The reserves, covering more than 43,240 acres, have primarily been established to protect habitat for endangered birds. The properties are known to support populations of more than 800 species of birds, of which over 50 are globally threatened or near-threatened, and more than 100 are restricted-range or endemic.

Learn more at [www.fjocotoco.org](http://www.fjocotoco.org)

## PUFFLEGS IN PERIL

South America is home to 15 puffleg species scattered around the Andes of Argentina, Bolivia, Colombia, Ecuador, Peru, and Venezuela. They are divided into two genera, *Eriocnemis* and *Haplophaedia*. Both sexes of all 15 species sport the feather tufts that give them their name.

Black-breasted Puffleg, with an estimated population of 210-268 individuals, is listed as Critically Endangered on the international Red List of Threatened Species. Two other pufflegs also are listed as Critically Endangered:

- Gorgeted Puffleg, discovered in 2005 in a mountainous area of southwestern Colombia, numbers about 900 birds and occurs in an area of less than 10 square kilometers (3.9 square miles).
- Turquoise-throated Puffleg,

endemic to Ecuador, may be extinct. It is known from specimens collected in the 1850s and an unconfirmed sighting in 1976. Like the Black-breasted, hardly any of its original habitat remains. Nonetheless, Ecuadorian ornithologist Juan Freile Ortiz is coordinating a search for the bird, which is supported by the American Bird Conservancy's Search for Lost Birds program.

In addition, Colorful Puffleg, another Colombian endemic whose range overlaps that of the Gorgeted Puffleg, was upgraded in 2018 from Critically Endangered to Endangered, as its range was found to be wider than previously thought.

Three pufflegs — Coppery-bellied, Black-thighed, and Hoary — are listed as Near Threatened, while the remaining eight species are classified as Least Concern.

that borders the Tandayapa Reserve on the road to Mindo. In fact, Möens and I used his “High Altitude Hummingbirds” poster in Yanacocha to help identify our sightings on that June morning.

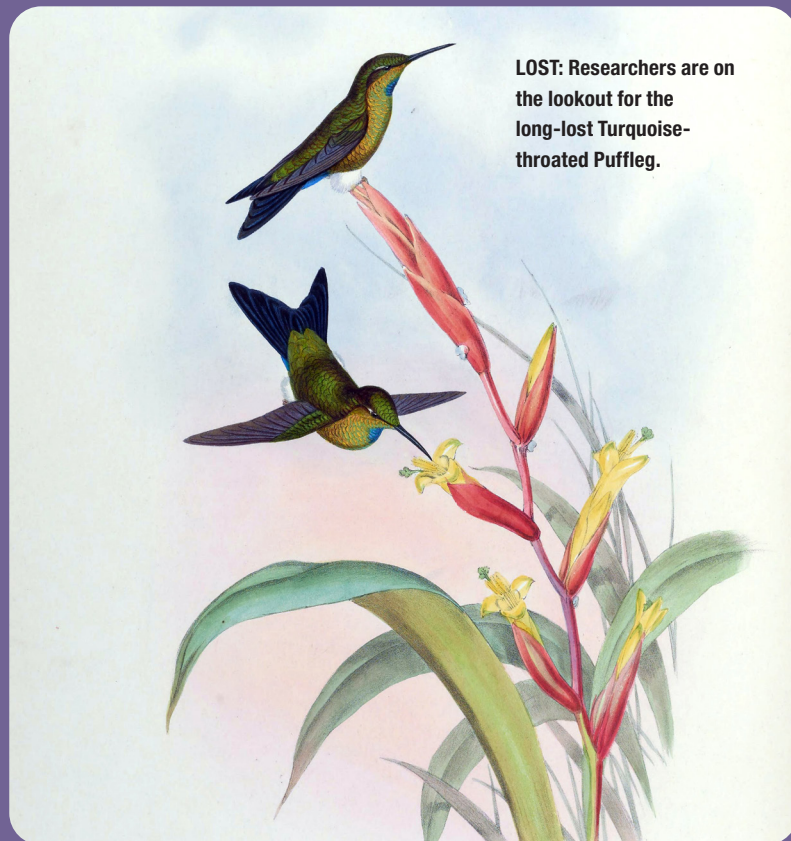
Birder Derek Kverno, who lived in Quito from 2004-2010, concurs with Carrión. “This hummingbird is very rare and extremely localized,” he says. “It can also be easily confused with other puffleg species, especially in poor light. Hopefully, the Jocotoco Foundation’s conservation efforts continue apace in the area and verified sightings of the Black-breasted Puffleg become more frequent.”

More puzzling still is why another puffleg species, the Glowing Puffleg, seems to be doing well at similar elevations (1,800-3,600 feet) on the eastern slopes of Pichincha. It’s even considered common. For the Black-breasted Puffleg, Ridgely says two primary questions must be answered first: “What is the right elevation [to find the bird], and why is it so rare?”

What are its chances long-term? “Well, I’m neither an optimist nor a pessimist [regarding the bird’s survival],” Carrión says. “Its future isn’t really clear.” The bird never was abundant, most likely, because of its small range and specialized habitat needs. Carrión says that it is more present in the public consciousness than before, but that the government — or someone — needs to dedicate more funds to studying the bird and its habits. “It’s an icon of Quito,” concludes Carrión.

“I do not see that its extinction threat is all that high,” adds Ridgely. “We still don’t know much more than we did 20 years ago. A really serious effort to figure this bird out is still needed.”

*Brian Kluepfel is the editor of the newsletter for Saw Mill River Audubon in Westchester County, New York, and a contributor to Lonely Planet and Fodor’s travel guides. In our November/December 2017 issue, he wrote about Bolivia’s Blue-throated Macaw.*



**LOST:** Researchers are on the lookout for the long-lost Turquoise-throated Puffleg.

John Gould/Wikimedia Commons

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