

FIGHTING

FOR THE BLUEBEARD

In Bolivia's northwestern grasslands, a former Dutch arborist and others are working to save one of the world's rarest macaws • **BY BRIAN KLUPEL**



CRITICALLY ENDANGERED: A trio of Blue-throated Macaws perch in the Barba Azul

FIGHTING FOR THE BLUEBEARD

In Bolivia's northwestern grasslands, a former Dutch arborist and others are working to save one of the world's rarest macaws • BY BRIAN KLUEPFEL

A BURNT-ORANGE ORB starts to disappear over the savanna and Mamoré River as Tjalle Boorsma sits and waits. Soon, he is surrounded by Blue-throated Macaws coming to roost in their favored motacú palm trees. In all, he counts 92 birds and is left in awe. "To have such high numbers of a critically endangered species flying around — it was an amazing count and spectacle," says Boorsma, conservation program coordinator of the Barba Azul Nature Reserve in northwestern Bolivia. "They're also very curious. They fly down and check you out!"

Boorsma's sighting showed that one of the world's rarest and most striking birds — found only in Bolivia — is hanging on. The macaw's decline, attributed to habitat loss and pet-trade trafficking, has been so dramatic that it was once believed only isolated breeding pairs remained. Then, in 2007, researchers with Asociación Armonía, a Bolivian conservation organization, discovered more than 70 of the blue and yellow birds in a single roosting site.

As reported in the "Eye on Conservation" column in the April 2014 issue of *BirdWatching*, the Barba Azul Nature Reserve in the province of Beni doubled in size that year to 27,180 acres. Since then, Armonía, which manages the reserve, has continued the bluebeards' fight for survival on several fronts. Armonía, one of Bolivia's largest

environmental nongovernmental organizations, has been working with the reserve since its founding in 2008.

A STUNNING BIRD

Boorsma, a Netherlands native who joined Armonía in 2015, describes the bird (*barba azul*, or "bluebeard" in Spanish) as "the little nephew of the larger Blue-and-yellow Macaw" and notes several differences. "The Blue-throated has a stunning turquoise blue color on its back, head, and throat and a deep yellow breast," he says. "Although the difference is subtle, their calls are less harsh and softer than the Blue-and-yellow." Also, Blue-and-yellow has two shades of blue and a black patch on the throat. The *barba azul* has a distinctive blue neck patch and a different, more playful flight pattern.

In August and September 2015, three teams engaged in the first-ever scientific survey of the bluebeard. The census, done in two-week repetitions, counted simultaneously in four areas: south of Trinidad, near Santa Ana de Yacuma, around the reserve, and close to Santa Rosa. "We want to do this annually, to see what the actual population is," Boorsma says. The only numbers to date, he said, were approximations.

"The difficult thing," he adds, "is that the birds move around, so there is the possibility of counting the same bird several times." Another challenge:

Bluebeards may occur in mixed flocks with similar Blue-and-yellow Macaws, so he and other surveyors have to be on their toes.

In 2015, the Blue-throated Macaw population estimate was no more than 200-250 wild individuals — even fewer than the previous estimate of 300-350. Whichever the number, the bird is one of the world's rarest macaws in the wild. In fact, in 2013, the U.S. Fish and Wildlife Service listed the bird as endangered under the Endangered Species Act. (More than 1,000 Blue-throats are held in captivity worldwide, mostly in zoos.)

Researchers have made several notable discoveries in just the last couple years. In 2016, for example, a fellow Dutchman surpassed Boorsma's single sighting of 92 birds. Fabian Meijer of Wageningen University, while doing his master's thesis on the bluebeard's diet, counted 118 macaws arriving at their night roost at the reserve.

The bluebeard, in fact, may owe a debt of gratitude to Wageningen — it was the school where Boorsma received his master's in conservation and terrestrial ecology, which segued into a study on the impact of logging on birds in Chiquitania, Bolivia, in 2011. That experience was influential enough that he gave up a career as an arborist and was hired at the reserve. "I wanted to continue with conservation, and I said, 'Why not give it a try in Bolivia?'"



CRITICALLY ENDANGERED: A trio of Blue-throated Macaws perch in the Barba Azul Nature Reserve. The species is believed to number 200-250 birds in the wild.

The career shift for Boorsma seems to have paid dividends for the bird, and the findings in 2015-16 spurred him to take to horseback again in early February 2017 on yet another exploration of the macaw's habitat.

With backing from American Bird Conservancy and the Cincinnati Zoo, Boorsma and his crew rode 70 miles into flooded grasslands northwest of the Barba Azul reserve. Initially they found only Blue-and-yellow Macaws, despite

searching in forest islands of motacú palms, preferred fruits of Blue-throats during the nonbreeding season. "To our surprise," he says, "the motacú-dominated forest islands showed no signs of Blue-throated Macaws."

At last the team sighted a pair of bluebeards flushing from an elongated patch of royal palms. "The discovery gave a new scope to the whole expedition," Boorsma says. To confirm that the Blue-throats were indeed nesting there,

Boorsma concealed himself in a makeshift palm blind. After six hours of waiting, he observed the cautious pair return to their nest. A second nest was later discovered in another dead royal palm trunk.

Two more nests were found in total palms at another location about 30 miles (50 km) northwest of the reserve. In that case, the birds chose locations 165 feet (50 meters) away from a farm and showed no signs of disturbance from

HELPING MACAWS BREED

A nest box that the Blue-throated Macaw likes — and crucially, that its competitor, Blue-and-yellow Macaw, does not like — has proved a challenge. “The Blue-and-yellow Macaw is bigger and more aggressive,” says Bennett Hennessey, Armonía’s development director. “They have removed Blue-throated Macaws from nest cavities and even killed one once.”

“Finding the right material took quite some time because these birds can be so destructive,” adds Tjalle Boorsma. “With small adaptations we figured out how to stop the competition between the species. Just creating a smaller entrance hole inhibited the more aggressive Blue-and yellow Macaws.”

The program, which began in 2005 in Loreto, Bolivia, produced its first second-generation nestling this year, and an additional six breeding pairs were observed in the area. Lately, nest boxes have been placed at the Barba Azul reserve. They haven’t been successful yet, but the riddle may have been solved.

“In Loreto, we placed nest boxes against total and motacú palms, and the birds are using them,” Boorsma says. “We imitated that model in the reserve. But in early February, I found natural Blue-throated Macaw nests high up in royal palm snags as well as total palm. At first we thought that the birds might use motacú for breeding, but now I believe the opposite. Motacú doesn’t generate cavities, and the wood is hard. Total and royal palm are much softer.”

Boorsma reasons that the Barba Azul birds prefer breeding in high royal palm and total palm, and use motacú just for feeding. The birds in Loreto, in contrast, have become used to the nest boxes, regardless of their location.

Based on these findings, Armonía plans to adjust the location of the nest boxes to fit the birds’ natural habits.

being in such close proximity to humans and livestock.

“That was the missing piece we needed to complete our investigations,” Boorsma says. “Now we definitively know that Blue-throated Macaws prefer total and royal palms to nest in, as dead palm snags provide an excellent vantage point from which to observe their surroundings.”

Another bit of good news is that a nest box program begun in 2005 (mainly underwritten by Tenerife’s Loro Parque Fundación and Bird Endowment) is yielding impressive results. No fewer than 64 chicks have fledged from boxes in the past decade in Loreto, just south of Trinidad. In 2014, seven chicks fledged from nest boxes, and in 2015, 10 more. (See sidebar at left.)

CHANGING CULTURAL PRACTICES

Another victory has been the introduction of artificial-feather headdresses used in local indigenous celebrations. Native Moxeño tribes perform an annual *machetero* (machete) dance in a headdress of 30 feathers — requiring about 15 adult macaws, dead or alive. Previously, the ornate headgear utilized real feathers from four different macaw species. Now, brightly painted palm fronds yield a similar result without culling any bluebeards or other macaws, saving approximately 6,000 birds since 2010.

Armonía hopes to change other cultural habits, too.

Beni Department, one of Bolivia’s nine political divisions, is cowboy

and other organizations, the reserve purchased a John Deere tractor and dug more than 30 kilometers of firebreaks to protect its land from the annual burns. The move allows palms to regenerate. Fencing also keeps wandering bovine out, so palm seeds have a chance to take root. Boorsma says at the prior rate of burn-and-destroy, many of the 80-year-old trees would have died out within 20 years — and this palm, for reasons yet unclear, is the main food source for the bluebeard.

In August 2016, the slash-and-burn farming methods were addressed at a Sustainable Ranching Conference of the Bolivian Lowlands, which was organized by Armonía, a university, and a local ranchers group. The 170 attendees, including cattle ranchers, veterinarians, environmentalists, and others, discussed eco-friendly practices from other countries, as well as the certification of grassland beef for export.

The Barba Azul reserve is leading the way in newer land-management techniques. Boorsma and Rodrigo Soria Auza, Armonía’s executive director, visited Alianza del Pastizal (Grasslands Alliance) sites in Uruguay, Brazil, and Argentina to study sustainable practices. “We are working hard to assure that Barba Azul East [a 12,000-acre segment of the reserve] will be a model for sustainable cattle ranching, presenting an alternative model for the Beni,” Boorsma says. “This will also generate income to pay for our conservation activities.”

Encouraging tourism has been

“This is the only area where the species occurs. So it’s not only endemic to Bolivia, it’s also endemic to this Beni ecosystem.”

country, most of it given over to cattle ranching. The unique grassland ecosystem features forest islands, where motacú palms grow. The annual cycle of dry and wet seasons leads to feast or famine for cows. When the grass dries out, farmers engage in uncontrolled burns to foster new shoot growth; their fires decimated much of the Barba Azul reserve for two years in a row.

In 2015, with the help of the International Conservation Fund of Canada, American Bird Conservancy,

helpful, too. In October 2016, 179 avian species were recorded in one day, including the rare Streamer-tailed Tyrant, Cock-tailed Tyrant, a flock of 40 Buff-breasted Sandpipers, a Long-tailed Ground-Dove, and a White-rumped Tanager. Boorsma and Meijer surpassed the first Barba Azul Big Day count in 2015 by more than 40 species. A total of 288 species have been registered, and the reserve is a regular eBird reporter, helping staff pinpoint species for visiting life-listers and others.



WHERE BLUEBEARDS NEST: In February 2017, Tjalle Boorsma observes a macaw nest in a royal palm in northwestern Bolivia. It was one of four nest sites discovered during an expedition into flooded grasslands in search of the bird's breeding areas.

The reserve is an enigmatic ecosystem, home to 37 mammals, including high-profile ones like the giant anteater, black howler monkey, and jaguar. Recently, the first recorded sighting of a rare white-eared opossum was documented here, too — unfortunately, in a bluebeard nest box.

Boorsma's dream of making the Barba Azul reserve into a first-rate science station is slowly taking root. In the past year, four individual cabins for tourists were built; most clients are birders. Nascent studies have been undertaken, many by graduate students from Glasgow University in Scotland, who've published and blogged about their field work in the Beni. "I want to bring it to an even higher level, with people doing Ph.D. work and theses, so that big universities know the reserve," says Boorsma.

MORE TO LEARN

The work goes on. Part of the reserve is still home to cattle, yet most of it is regenerating grassland habitat with the famous motacú palm on which the bluebeards feast. Why they favor this palm fruit above all others is a question Boorsma would like to continue to investigate.

It's too early to know for sure

whether the macaws found during the 2016 and 2017 expeditions are the same birds that visit Barba Azul in the dry season or whether they belong to a separate population. To answer this and other questions about where the birds go, a group of experts led by independent researcher Lisa Davenport is in the process of testing tracking devices suitable for the species, so that tagged birds can be traced during their seasonal migrations.

Even the forest islands upon which so much depends are something of a puzzle; they're another geologic and historical riddle Boorsma would love to have scientists pore over. In fact, in fall 2016, Boorsma — his arborist past coming in handy — and reforestation expert Marc Meeuwes replanted seven of the islands with hundreds of motacú palm saplings.

Understanding the local ecosystem is crucial to saving the bluebeard, says Boorsma. "This is the only area where the species occurs," he notes. "So it's not only endemic to Bolivia, it's also endemic to this Beni ecosystem."

Ongoing development across Bolivia has thus far shown little concern for the environment; controversial roads have

been planned and built through once-pristine and sacrosanct indigenous land. Oil companies have been granted exploratory rights to national parks. While the folks at Armonía are sanguine about the early steps to protect the *barba azul* and its rarified habitat, they're aware of the very real threats to a bird whose numbers are few and challenges many.

Regional pride counts for something, however, and in 2014 the beautiful macaw was named a "national patrimony" species. While a dance troupe of *benianos* performed the *machetero* dance outside the La Paz legislative hall, the Bolivian congress passed Law 584, which protects the birds on a symbolic level, at least.

Schoolyards and plazas are decorated with *barba azul* imagery. Armonía's own office is adorned with bluebeard promotional posters, life-size replicas of the bird, and faux-feather ceremonial headdresses. With a little help from its friends, the bluebeard fights on. 🐦

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.