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Teaching Colombian Children

To protect the bats of Macaregua Cave

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A handful of children, with bat masks on their heads and arms outstretched for balance, walk gingerly across the field, each careful not to unseat the Ping-Pong ball riding precariously in a spoon held by clenched teeth. If they get the ball into the targeted basket, the children are rewarded with candy. The youngsters, some as young as 4 years, are pretending to be bats. The Ping-Pong ball stands in for pollen, the basket for a banana flower and the candy is the sweet nectar that rewards pollinating bats. So goes a lesson at Quebrada Seca school in rural Colombia.

Our efforts to teach children and their teachers about the importance of bats grew from the need to protect nearby Macaregua Cave, an important maternity roost for Trinidadian funnel-eared bats (*Natalus tumidirostris*). At Fundación Chimbilako, we took up the educational challenge with a grant from Bat Conservation International's Global Grassroots Conservation Fund. Our nonprofit foundation was founded at the Universidad de los Andes in Bogotá, Colombia, in 2004 to study the nation's biodiversity, with an emphasis on bats.


Several of us involved with Fundación Chimbilako have conducted research at Macaregua Cave, which is also used by Seba's short-tailed bats (*Carollia perspicillata*), Pallas's long-tongued nectar bats (*Glossophaga soricina*) and Peters's ghost-faced bats (*Mormoops megalophylla*). We developed tight relationships with several families in the surrounding community, and some local youngsters have helped as field assistants since 2003. Taking advantage of these friendships, we began our bat-education campaign at Quebrada Seca school in the Curitá municipality, some 1.8 miles (3 kilometers) from the cave.

With about 40 students ages 4 to 15, at our first workshop, we started by assessing their knowledge of nature, other animals and finally bats. The children recognized similarities between bats and other mammals and easily saw themselves as mammals, but then we discovered enormous misconceptions about bats. Pupils described bats as evil spirits or flying mice, some insisted bats were deaf or blind and quite a few concluded that bats must defecate through their mouths since they hang upside down. We clearly had our work cut out for us, and we knew that protecting the cave required convincing the community of the ecological and economic value of its bats.

Colombia is a bat-diversity hot spot, with 178 bat species documented within its borders. Yet basic bat biology and diversity are rarely taught in Colombian schools, so harmful myths often are the only information available to children. To correct those falsehoods, we planned to show children the similarities between their own experiences and those of bats and to explain the important services that bats provide for their community.

Our ultimate goal is to protect Colombian bats, starting with those that inhabit one of our most endangered ecosystems, the arid tropical forests. The area around Macaregua Cave, at an elevation of more than 5,150 feet (1,575 meters), is mostly a mosaic of fragmented



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patches, with corn and bean agriculture and tobacco plantations.

With the help of pictures and detailed descriptions of various bats, we were able to modify some of those deep-rooted erroneous beliefs. Children colored and decorated illustrations of bats, paying particular note to their external anatomy. The youngsters recognized the many “often unexpected” similarities between bats and themselves, such as the eyes, hidden arms and fingers that support the wings.

Our second workshop focused on bats’ ecological services. We used a simple game to explain how insect-eating bats help protect bean and corn crops from damaging insects. We emphasized that the Trinidad funnel-eared bats and ghost-faced bats that live at Macaregua Cave near their homes are very effective at consuming pests.

Explaining bat pollination was a special challenge, since few students were aware of the process. Most, however, knew banana flowers well, so we built our explanations around their familiarity with the rural environment to show how pollen, nectar and flower shape are critical aspects of bat pollination. And that, of course, is where the game of Ping-Pong balls came in. Afterwards, children were able to describe how bats benefit humans by helping to produce fruit and seeds and by protecting plantations from harmful insects.

To gauge the results of our education efforts, we tested students with a jigsaw puzzle picturing the parts of a bat and with a game similar to “Chutes and Ladders.” We were stunned by how much information the children retained several weeks after the workshops. Most of the false beliefs were changed. Our next step is to ensure that bats are better understood and valued so the community will be committed to protecting the bats of Macaregua Cave. We hope ultimately to eradicate misconceptions about bats in all areas of high bat diversity where conservation needs are critical.

On our last visit to Quebrada Seca, we taught the basics of echolocation through a sound-based game similar to tag. We explained how bats perceive their surroundings and are able to live in Macaregua Cave and flutter through the night without magical powers. Finally, we were invited to meet with 15 teachers from other schools in the region, educating them to the values of bats so they can take that message home to their schools and students.

We are confident that our foray into environmental education has made a difference with these youngsters by correcting misinformation and explaining the values of these wonderful flying mammals. Hopefully, some of these students will grow into adults who accept the responsibility of protecting Macaregua’s cave.

SERGIO ESTRADA VILLEGAS and LEONARDO MARTÍNEZ LUQUE are founders and members of Fundación Chimbilako. The group is organizing Colombia’s First National Symposium on Research on Bats in Bogotá; June 19-20, 2008. You can help support local bat-conservation programs around the world by contributing to BCI’s Global Grassroots Conservation Fund. Please contact development@batcon.org.

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