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Rodrigo Medellín

2008 Associate Laureate, Environment
Mexico, Born 1957

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Project Goal

Save endangered bats through protection and education

Location: Mexico

Hero of the Night

Once worshipped as deities, bats held a place of honour in the rich cultural landscape of the Maya civilisation. But these remarkable animals — in some areas of the world a keystone species critical for healthy ecosystems — have suffered from centuries of misconceptions and folklore that portray them as sinister, disease-carrying, blood-sucking demons. Out of ignorance and fear, humans wipe out entire colonies of bats through pesticides, encroachment or by mining, burning or dynamiting the caves where they roost.

Overlooked and in Danger

Severely under-studied, omitted from conservation plans, bats are among the world's most rapidly declining mammal species. A total of 1,116 species of bats exist worldwide, and are found everywhere except polar regions and desert extremes. Eighty-five species are endangered, and in many cases, the main threat to them stems from mankind's fear and hatred.

For Rodrigo Medellín, however, bats are nothing less than astonishing. Mexico's foremost authority on bats and an ardent conservationist determined to change their image, he is Professor of Ecology at the National Autonomous University of Mexico (UNAM), where he has devoted over 30 years to creating awareness of the invaluable role they play in keeping ecosystems and lucrative agricultural crops healthy.

A Boyhood Fascination

Medellín was 12 years old when he first encountered bats in a hot, damp cavern teeming with life. Vampire bats hung in one corner and nectar-feeding bats mated in another. Insects burrowed into mounds of bat guano, while a snake hunted sleeping bats. "It was incredible. Surrounded by life, I couldn't find a single spot on which to focus," he says. Discovering this wealth of biodiversity in that single location was a pivotal moment in his decision to study one of the most ecologically diverse mammals in the world and to correct the many misconceptions about them.

Useful Creatures

Bats are natural controllers of night-flying insect pests and consume almost the equivalent of their weight in mosquitoes and crop pests each night. Corn earworm moths cost farmers billions of dollars annually, yet in one night, a million Mexican free-tailed bats (*Tadarida brasiliensis*) can destroy ten tonnes of moths.

Across Mexico's lush rainforests, sprawling savannahs and vast deserts, bats pollinate flowers of many hundreds of species, such as columnar cacti and agaves (a vital ingredient in the production of tequila), and disperse seeds of many species that promote forest restoration. In fact, bats distribute up to five times more seeds per square metre than birds, and can account for up to 95 per cent of forest regrowth. Mexico, renowned for its extraordinary biological diversity, boasts an astonishing variety of bats — Medellín estimates that his country has 138 species, of which 19 are officially threatened or endangered.

Three of Mexico's bat species feed on the blood of higher vertebrates, and there have been

reports of the common vampire bat, *Desmodus rotundus*, attacking humans. But, Medellín says, “in Mexico, this is a very rare occurrence. The risks to humans are extremely low. In fact, virtually all bats are completely harmless and 100 per cent beneficial, even crucial to ecosystems and humans.”

A Call to Action

With the benefits brought by so many bat species so high, and the risks to humans from a handful of species so low, Medellín saw the significant decline in the population of his country’s 10 major bat colonies as a call to action. In 1994, he founded the Program for the Conservation of Bats of Mexico, in partnership with his university and Bat Conservation International. Under his direction, a comprehensive strategy was established, based on research, education and conservation.

Today, Medellín and his 30-member team, drawn from master’s and Ph.D. students, identify priority sites among Mexico’s estimated 30,000 caves, and then develop management and recovery programmes for threatened species. Ranchers, for instance, believing them to be vampire bats that prey on their cattle mistakenly destroy thousands of beneficial bats; Medellín and his team defuse the problem by teaching them vampire-bat control strategies. As part of the programme, educational materials are made available, community workshops held regularly and an accurate picture of bats and their usefulness is presented via nationwide media exposure, including an award-winning radio show that reaches millions of listeners. “Adventures in Flight” is a series of 15-minute broadcasts, aimed mainly at children, with each programme covering an aspect of bat biology or conservation.

Working with the Young

Medellín’s overall strategy has proved highly effective, becoming a model for similar initiatives in Bolivia, Costa Rica, Guatemala and elsewhere. He believes that if young people do not change their attitudes, bats are doomed. His teams work with schools and communities located near habitats for threatened bat species. Games, toys and storybooks are used to enlighten children. “We’ve reached well over 200,000 people, at least half of them children,” Medellín says, adding that thanks to radio programmes, coverage on television and articles in the press, millions of people now have access to accurate information about bats.

One striking example of the strategy’s success occurred in 1996, soon after Medellín and his team worked with a school near Monterrey in northern Mexico. Rumours began to circulate that a livestock-killing creature, the Chupacabras, lurked in the famous Cueva de la Boca caves, home to the world’s largest Mexican free-tailed bat population. Locals threatened to burn the cave until schoolchildren — newly informed about bats by Medellín’s team — intervened and explained their benefits. Local people grew to appreciate the Mexican free-tailed bat, and its population increased from a low of 100,000 in 1991 to 2.5 million by 2001. “To this day, the cave remains protected and cherished,” says Medellín.

Finding Funding

He explains that one major challenge of his work is convincing those funding conservation that bats are worth supporting. “This is a constant battle because most donors focus on charismatic species such as big carnivores or birds. Patience and education are needed; we have to explain to

donors the importance of investing in bat conservation.”

The funds from Medellín’s Rolex Award will be a welcome boost, allowing him and his team to work in ten states, selecting ten new priority caves beyond the 25 that had been previously identified as needing conservation. They will also focus on five endangered species, including the flat-headed bat (*Myotis planiceps*). Declared extinct by the World Conservation Union (IUCN) in 1996, this tiny animal — at 3 grams, one of the world’s smallest bats — was rediscovered by Medellín and his associates in 2004.

Making a Difference

Deeply committed to safeguarding not only bats but all of Mexico’s wildlife, Medellín is extending his work to other species, including the pronghorn antelope, bighorn sheep, black bears and the first-ever nationwide population estimates of jaguars in Mexico. In demand at conferences and universities worldwide as a speaker and educator, Medellín has become a potent force in changing negative perceptions and restoring pride in one of Mexico’s most unusual animals, earning along the way several major honours, including the Whitley Award.

“Rodrigo is brilliant, and ... because of his intellect, passion, commitment and humour, he is able to convince people from all walks of life of the importance of bat populations, and their need to get informed and involved in their conservation,” says Dr Mary C. Pearl, president of the Wildlife Trust, in New York.

For Medellín, the words of a young boy are the best validation of his work. A few years ago, he says, “after my education team had already worked in a cave in western Mexico, I arrived at the cave incognito with some donors. As we got out of our vehicles, a child no older than nine approached us and offered to tell us about the importance of the bats that lived in that cave if we gave him a peso. I immediately gave him a couple of coins and he proceeded to tell us all about bats and their pest control, pollination, and seed dispersal services. I could not have been happier!”

Lynne Schuyler

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