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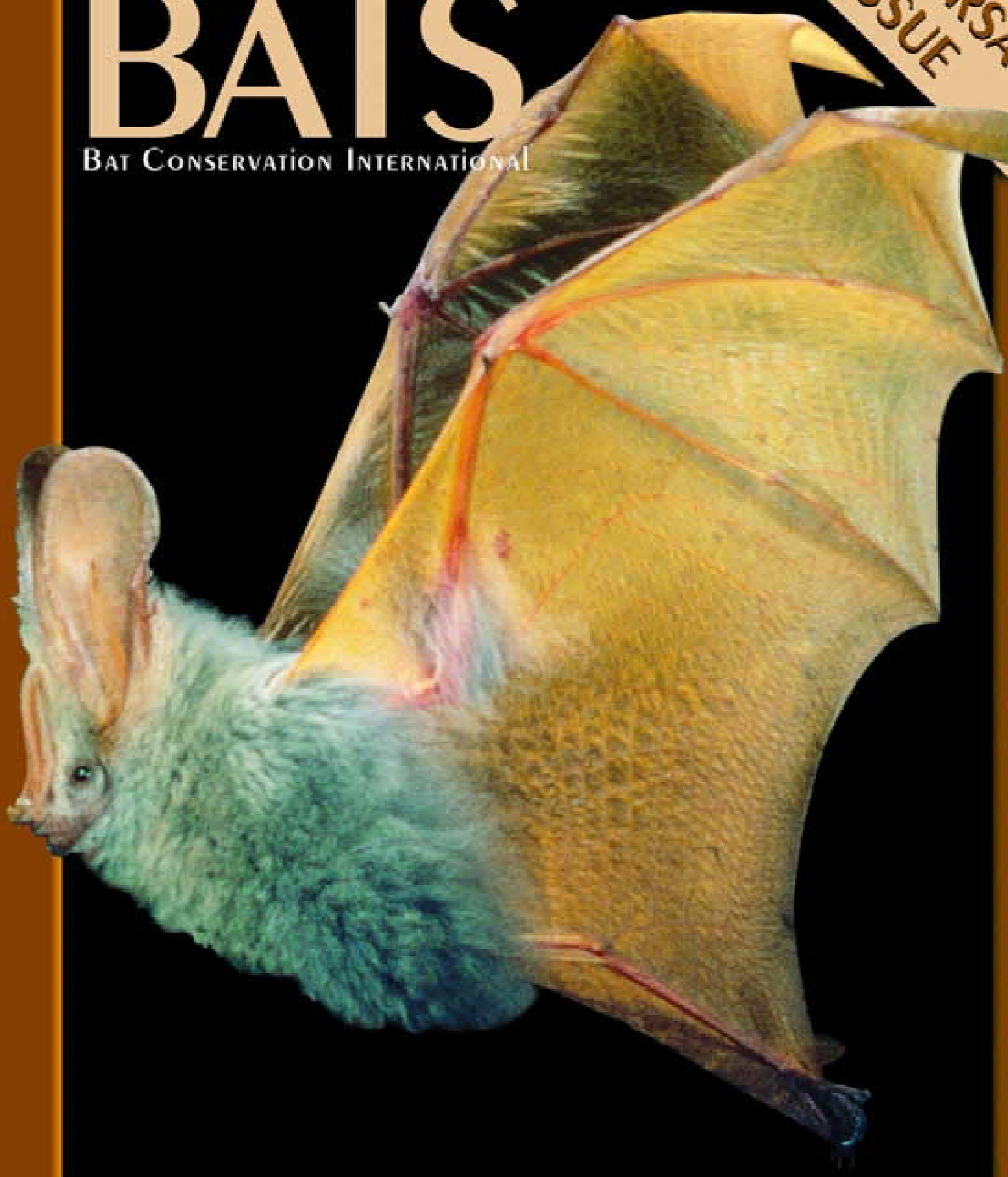
BATS

Bat Conservation International

Special Anniversary Issue



20 Years of Bat Conservation

BATS

Volume 20, No. 2, Summer/Fall 2002

FEATURES

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Bat Conservation International is dedicated to conserving and restoring bat populations and habitats around the world. Using non-confrontational approaches, we educate people about the ecological and economic values of bats, advance scientific knowledge about bats and the ecosystems that rely on them, and preserve critical bat habitats through win-win solutions that benefit both humans and bats.

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COVER PHOTO

The yellow-winged bat (*Lavia frons*) of tropical Africa is one of the world's most beautiful bats. Photo © Merlin D. Tuttle, BCI \000-3113

Past & Future

20 Years of Bat Conservation and the Challenges Ahead

For 20 years now, we have struggled to protect some of the most unfairly reviled creatures in all of nature. Looking back, Bat Conservation International has achieved truly amazing success. Our philosophy of choosing cooperation over confrontation, of molding partnerships rather than inciting adversaries, has been amply vindicated. Yet, as we enter our third decade, huge challenges remain: Many bat species — and the ecosystems that depend on them — still face grave peril around the world. Our journey has only begun.

This special anniversary issue of *BATS* explores the history of BCI from its birth in Milwaukee in 1982 as a part-time effort by Merlin Tuttle, with one employee and a handful of stalwart friends as trustees, to an organization with a worldwide impact through multilingual education programs, international grants, research support, broad coalition building, and innovative conservation efforts.

BCI's philosophical foundations — and, indeed, the organization itself — evolved through Tuttle's decades-long commitment, begun as a teenager, to save the gray bat (*Myotis grisescens*) from extinction. He learned the awful price of ignorance: the senseless destruction of countless bats because of erroneous fears. He found a remarkable lack of reliable scientific data about bats and almost no realization of their inestimable value to the world.

And he encountered a striking reluctance among even the most dedicated conservation groups to champion an animal that was hardly more popular than cockroaches. The gray bat experience, now one of BCI's proudest successes, is the centerpiece of this issue.

BATS also examines some of BCI's most important initiatives, programs, and projects, citing our finest achievements and the strategies that produced them. It follows the career accomplishments of individuals BCI helped with scholarships, research grants, and training in their early years — investments that will pay bat-conservation dividends for decades to come. We also profile some of BCI's most generous donors and steadfast friends who stepped forward at critical points in our history.

The individuals cited in this issue are but a sampling of the many friends, allies, and supporters who have made such a difference for bat conservation over the years. Our fondest wish is that we could acknowledge and personally thank every single individual who has helped to save the world's bats and their habitats. Unfortunately, we cannot. So these few examples represent our thanks to all of you who have given so much.

Finally, in this issue, we look to the future. Where is Bat Conservation International, with the support of its friends, most needed? How shall we meet tomorrow's crises in bat conservation? What successes will we report 10 years from now?

Emergence at Bracken Cave, Texas © San Antonio Express-News

Tadarida brasiliensis, Mexican free-tailed bat

Photographing flying foxes, Tutila Island

Quincy Mine gating project, Michigan
© Eric Munch, BCI

Educators' workshop, Johnson City, Texas
© Elaine Acker, BCI

Guano harvesting, Khao Chong Pram cave, Thailand

First meeting of North American Bat Conservation Partnership © Brian Keeley, BCI

Pteropus poliocephalus,
gray-headed flying fox

Filming for TV, Costa Rica

Rocky Hollow Cave, Virginia

Leptonycteris curasoae, lesser long-nosed bat

Dwarf epauletted bat, Ivory Coast

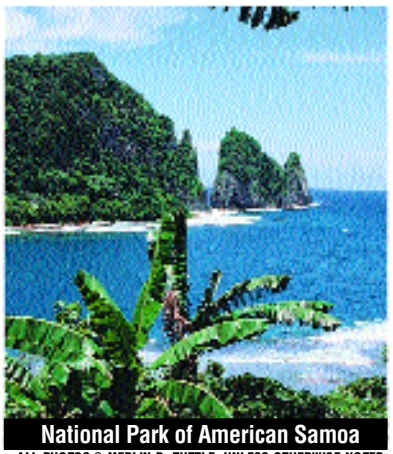
Pteropus conspicillatus, spectacled flying fox

Corynorhinus townsendii, Townsend's big-eared bat

Stanton Cave gating project © Steve Walker, BCI

Myotis lucifugus, little brown bat

Bracken Cave emergence, Texas



National Park of American Samoa

The gray bat, once so battered by humans it was facing extinction, has made a dramatic recovery thanks to BCI's many partners.

The Gray Bat's Survival

Saving a Species Built a Firm Foundation for BCI

by Robert Locke

The gray bat — feared, hated, and casually killed — was tumbling toward extinction in 1959. These cave-dwelling bats, which once filled the evening skies over much of eastern North America, were so vulnerable to human destruction that hundreds of thousands were being slaughtered in single acts.

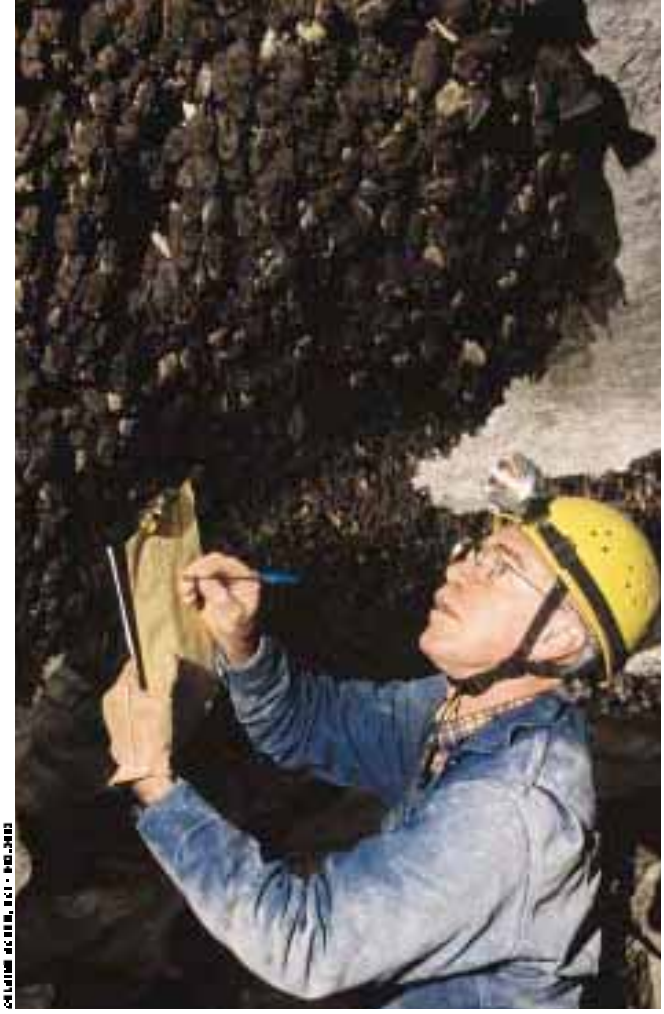
Then a Tennessee teenager took an interest. Now, after more than four decades of clearing barriers and winning allies, the revitalized gray bat has achieved a rare and wonderful triumph: *Myotis grisescens* seems ready to graduate from the endangered species list. That success spawned many others, for Merlin Tuttle's long struggle to save the beleaguered gray bat gave birth in 1982 to Bat Conservation International. And it defined the commitment and the philosophy that have guided the organization for 20 years.

1982

Merlin Tuttle founds Bat Conservation International in Milwaukee, Wisconsin, on March 12, 1982.

First victory: Thai government accepts BCI recommendations to protect millions of bats by hiring a game warden at Khao Chon Pran Cave and banning quarrying at Rakang Cave.

"Bats and Public Health," written by Tuttle and Stephen Kern, is distributed to health departments of every U.S. state to correct misinformation about bats and disease.



Merlin Tuttle estimates numbers in a dense cluster of hibernating gray bats, documenting their recovery.

The story of the gray bat is in many ways the story of BCI.

It began when Merlin, then a high school student, discovered a colony of gray bats (now also called gray myotis) in Baloney Cave, a few miles from his home in Knoxville, Tennessee. In 1959, gray bats were generally considered non-migratory mammals that lived in the same caves year-round. What Merlin saw at Baloney Cave suggested a different picture. Thousands of gray bats swept into the cave in the spring and again in the fall, each time mysteriously disappearing after only a few days. To the teenager, that looked a lot like migratory behavior.

Convincing his parents to take him to the Smithsonian Institution in Washington, D.C., Merlin discussed his observations with leading bat specialists. They were impressed enough to issue him bat bands through the U.S. Fish and Wildlife Service. They challenged him to find out where the bats were going and by October 1960, he had captured, tagged, and released several hundred.

In a remarkable piece of luck, he and his father found many of those banded bats less than two months later, in another cave more than 100 miles (160 kilometers) north of Knoxville. Merlin had demonstrated not only that his bats migrated, but that they had traveled north, rather than south, to winter hibernation sites.

Building on this quick success, Merlin settled in for the long haul. He eventually banded 40,182 gray bats — and recaptured over 20,000 — at hundreds of locations in Tennessee, Alabama, Georgia, Florida, North Carolina, Virginia, Kentucky, and Missouri. Twenty years of work firmly documented some of North America's longest bat migrations and produced his Ph.D. dissertation in population ecology at the University of Kansas.

In addition to a treasure of new scientific data, Merlin also found evidence of a disaster in the making, a discovery that was to chart the course of his life: Gray bat colonies were being devastated by humans at a frightful rate. The culprit, he soon learned, was misinformation — ignorance was driving the gray bat into extinction.

As his research took him throughout the South in search of gray bats, Merlin increasingly crawled into caves whose great ceiling domes bore the broad splashes of coffee-colored stains and pockmarks that signal long use by bats. But where once gray bats had carpeted hundreds of square feet of limestone ceiling, he often found bats clustered over a space no bigger than a serving platter — or no bats at all.

"You're too late," old-timers often said when asked for the locations of bat caves. "When I was a child, clouds of bats filled the sky. You should have been here back then. They're all gone now."

Success Story

Indiana Bat
Myotis sodalis

Good intentions are rarely enough to save a collapsing species. Nothing can replace solid scientific data. The endangered Indiana bat has been one of America's most rapidly declining mammals for decades, although many of its remaining hibernation sites are well protected.

Then a BCI investigation found a key factor in the decline and suggested new strategies for recovery. The bats need hibernation caves and mines that meet precise temperature requirements. The roosts must stay cold enough for the bats to hibernate in the fall without freezing in the winter.

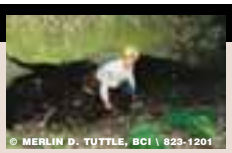
BCI compared mid-winter roost temperatures at nine protected sites. Where temperatures averaged between 37.4 and 44.9 degrees F (3 - 7 degrees C), populations increased by 97,339 bats over 20 years; where temperatures slipped outside that range, populations declined.

As a direct result of that research, appropriate conditions are being restored at key hibernation caves, where recovery is anticipated.

1983

First issue of *BATS* is published as a newsletter.

Judges Cave, Florida's largest maternity roost for endangered gray bats, wins protection as BCI convinces a state agency and Florida Nature Conservancy to purchase site with owner's generous assistance.



Front-page article in October 27 issue of *The Wall Street Journal* features Tuttle and BCI, one of first positive stories about bats ever to appear in a national newspaper.

©MERLIN D. TUTTLE, BCI

Endangered gray bats leave Judges Cave in Florida, a key maternity roost that was protected in 1983 through BCI efforts.

The truth was grim. Cave owners and visitors intentionally killed incredible numbers of gray bats, sometimes even pouring kerosene into their caves and igniting conflagrations that burned or suffocated all the bats inside. In 1973, Merlin brought friends to witness the spectacular evening emergence of the largest gray bat colony he'd studied. They gathered at the mouth of Hambrick Cave in northern Alabama and waited. And waited. There was no emergence. A quarter of a million bats had been killed. The entrance to the cave was scorched by fires and fireworks debris littered the floor inside.

In many cases, those who killed bats were convinced they were protecting their families and neighbors from mortal danger. Local health departments, warning that bats were dangerous, were claiming that most gray bats were rabid — though no one knew of a single instance, not even a suspected instance, in which a human, a pet, or a head of livestock had ever contracted the disease from a gray bat.

"It was," Merlin says, "hard not to be outraged when so many people were needlessly slaughtering bats that were in fact harmless and highly beneficial." The gray bat seemed to have little future.

The species is especially vulnerable since females bear just one pup per year and form large, conspicuous colonies that live in caves year-round. Single acts can kill tens or even hundreds of thousands, and the species simply cannot reproduce fast enough to overcome such losses.

The gray bats' peril was like that of the passenger pigeon a century before. Both species required large populations to survive. (Only large colonies of gray bats, which need the body heat of many individuals to raise the temperature of cool cave roosts, can successfully rear young.) The numbers are tragically deceptive — so large it seemed both species could survive anything. Countless millions of passenger pigeons darkened the sky in flocks said to stretch for miles in 1860. Then commercial hunters turned on the pigeons, which reproduced almost as slowly as bats. In just decades, the vast flocks were reduced to a single, caged bird. That last passenger pigeon died in 1914.

In addition to the impact of intentional killing, even more gray bats were being lost because early cave explorers, with no intention of causing damage, did not realize the harm that ill-timed visits could cause at hibernation and nursery caves. Only a tiny fraction of caves meet the precise temperature needs of gray bats, especially for hibernation. Unless the few appropriate caves could be protected, the species had no chance.

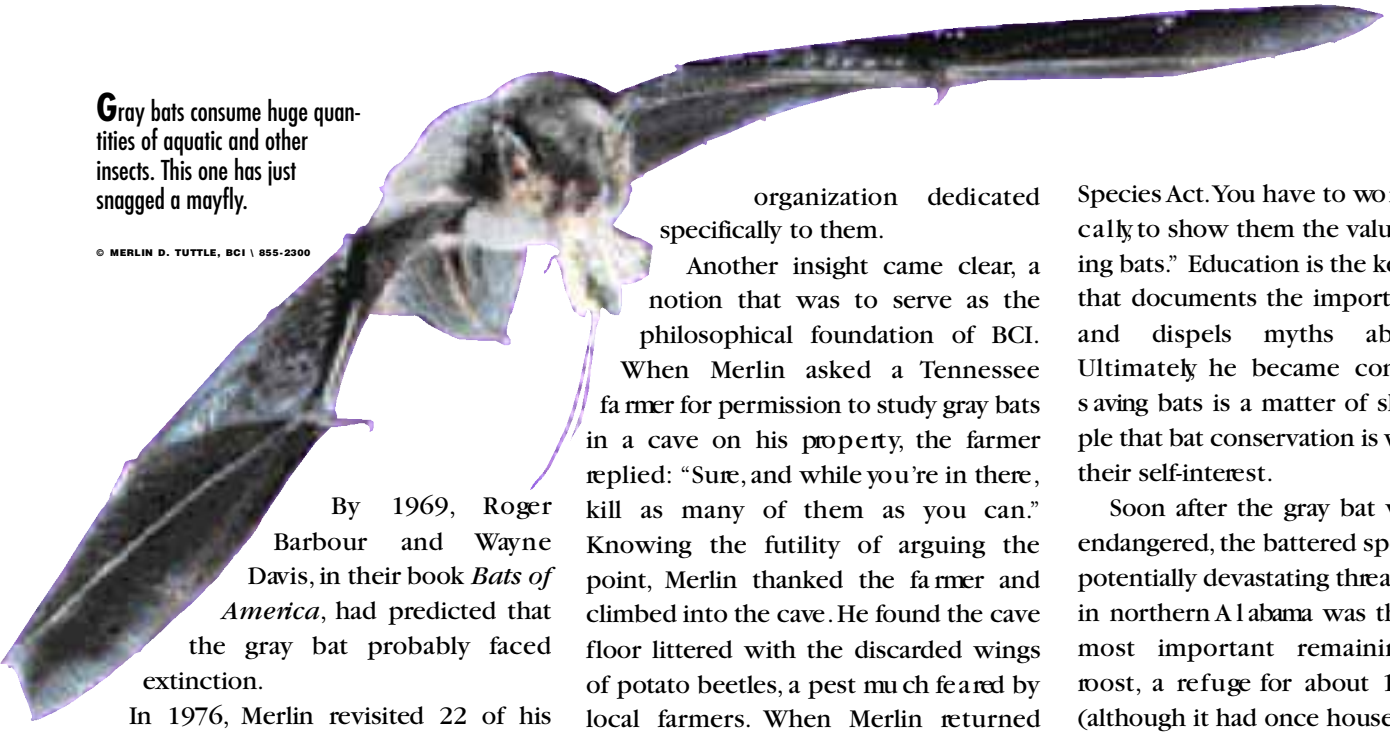
1983

BCI produces its first audiovisual program, *Saving America's Bats.*

With U.S. Fish & Wildlife Service funding, BCI produces and distributes 100,000 brochures, *Bats and Their Conservation.*

1984

Bacardi Imports, beginning a long association with BCI, publishes one million copies of a bat-education booklet, *The Most Famous Bat in the World.*



Gray bats consume huge quantities of aquatic and other insects. This one has just snagged a mayfly.

By 1969, Roger Barbour and Wayne Davis, in their book *Bats of America*, had predicted that the gray bat probably faced extinction.

In 1976, Merlin revisited 22 of his most isolated and important study caves in Tennessee and Alabama, homes to the colonies he had considered least likely to suffer declines. Even those colonies had shrunk by more than 50 percent in just five years. They had already fallen from 1.2 million bats to 635,700 in 1970; by 1976, they had collapsed to just 293,600. The largest nursery colony of all had disappeared entirely.

The U.S. Fish and Wildlife Service, at Merlin's request, officially listed the gray bat as an endangered species in 1976.

As Merlin became an active conservationist, he learned how daunting was his challenge. Not only were few people aware of the beneficial aspects of bats and their importance to the varied ecosystems they occupied, but most harbored deep-seated — and completely misplaced — fears of these flying mammals.

Among established conservation groups, he found little interest in championing such unpopular creatures. Endangered or not, bats couldn't compete with baby seals and panda bears. "Even conservationists looked at me like: 'Sure, next you'll try to sell us on the virtues of rattlesnakes and cockroaches.'" Protecting bats clearly would require an organization dedicated specifically to them.

Another insight came clear, a notion that was to serve as the philosophical foundation of BCI. When Merlin asked a Tennessee farmer for permission to study gray bats in a cave on his property, the farmer replied: "Sure, and while you're in there, kill as many of them as you can." Knowing the futility of arguing the point, Merlin thanked the farmer and climbed into the cave. He found the cave floor littered with the discarded wings of potato beetles, a pest much feared by local farmers. When Merlin returned with a handful of the colorful wings, the farmer understood immediately that the bats were eating his most feared pests. The next time Merlin visited, the farmer was actively protecting his bats.

"When you're trying to protect an organism that is as unpopular as bats were then, you really don't have any power," Merlin says. "You can't beat people over the head with the Endangered Species Act. You have to work diplomatically to show them the value of protecting bats." Education is the key, education that documents the importance of bats and dispels myths about them. Ultimately he became convinced that saving bats is a matter of showing people that bat conservation is very much in their self-interest.

Soon after the gray bat was listed as endangered, the battered species faced a potentially devastating threat. Sauta Cave in northern Alabama was the gray bats' most important remaining summer roost, a refuge for about 100,000 bats (although it had once housed more than half a million). The cave's new owner, planning to build a resort at the site, had begun dynamiting inside the cave. The state had approved an environmental impact statement that foresaw no harmful consequences of commercializing the cave, even though it sheltered the largest surviving summer colony of endangered gray bats, Alabama's only known hibernating population of endan-

Newborn gray bats cluster snugly together as they hang from a cave ceiling.

1985

Wisconsin Governor Anthony Earl signs legislation, initiated by BCI, to ban use of pesticides against bats.

BCI establishes Scientific Advisory Board, beginning with 11 bat experts and conservationists from eight countries.

***Merlin's Bats*, television program featuring Tuttle's bat-conservation efforts, airs nationally as part of National Geographic Society's *Explorer* series.**

© MERLIN D. TUTTLE, BCI - 1985.10.08

The bats of Hubbards Cave, the second most important hibernation site for endangered gray bats, were being devastated by human disturbances until huge, bat-friendly gates, shown here during installation, were erected.

gered Indiana bats (*Myotis sodalis*), and the largest population of threatened Tennessee cave salamanders. Bats and salamanders were proving to be a tough sell.

But persistence paid off: The U.S. Fish and Wildlife Service, with help from Merlin, acquired Sauta Cave. Now known as Blowing Wind Cave Wildlife Refuge, its growing bat population has more than doubled.

Such close calls convinced Merlin of the critical need for training programs, since even wildlife biologists of the time typically knew little about bats. He convinced the Fish and Wildlife Service to let him train several agency biologists in the skills needed to help bats. Two of them became pivotal leaders in bat conservation.

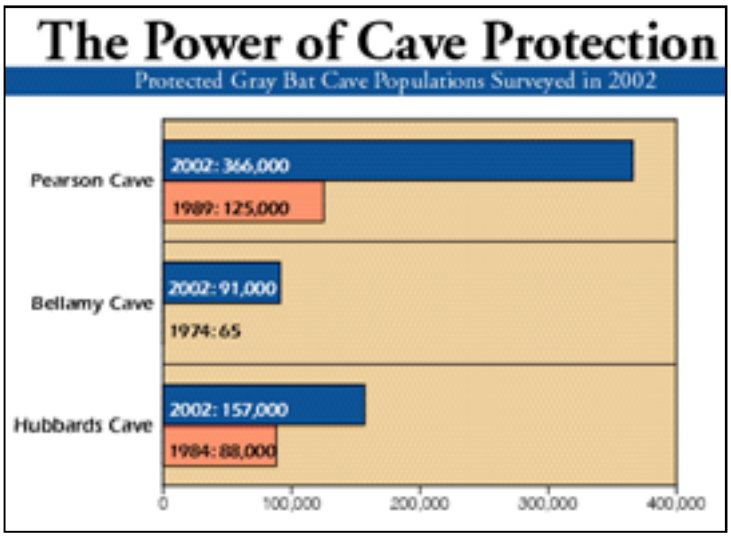
Within months of that weeklong training session some 25 years ago, Fred Bagley, through tremendous personal efforts, had won the federal acquisition and protection of Alabama's Fern Cave, the largest remaining hibernation cave known worldwide and winter home of more than half of the entire remaining gray bat population.

Another of those first trainees, Bob Currie, remains to this day a key leader in bat conservation. Bob has led numerous projects to protect essential bat caves throughout North America and inspired countless cavers to volunteer their time installing gates to protect caves. That early training project led directly to major payoffs: BCI's highly successful Bat Conservation and Management Workshops and its scholarship awards for young biologists. (In addition, one of BCI's most impressive and long-running accomplishments is its continuing program for cave and mine protection.)

The struggle to reverse the gray bat's slide into oblivion proved repeatedly the enormous potential of choosing cooperation and education over confrontation.

In 1977, environmentalists were frantically trying to block construction of a Tennessee Valley Authority nuclear power plant near Nashville. They sought Merlin's help in using the endangered status of gray bats to stop the project. Merlin admits to a strongly negative attitude at that time because of TVA's previously dismal track record on environmental issues, but he decided to investigate before joining the fray.

What he learned convinced him that the apparent conflict between bats and the TVA could be eliminated, at no cost, by simply rerouting a proposed power line corridor. TVA officials were delighted. The federal agency's newly hired environmental spokesperson, Ralph



1985

BCI partners install huge gate at Hubbards Cave in Tennessee, protecting one of North America's three largest populations of endangered gray bats.

Bob Carr, New South Wales' Minister for Environment and Planning, signs legislation supported by BCI to protect flying foxes in that Australian state.

1986

Bat Conservation International moves headquarters to Austin, Texas, and launches efforts to save largest urban bat colony under Austin's Congress Avenue Bridge.

Bob Currie of the U.S. Fish and Wildlife Service records roost temperatures at the recovering gray bat population in Pearson Cave in 2002

Jordan, conceded that the TVA might have earned the distrust of conservationists in the past, but said his job was to "change the future."

The agency owned much of the gray bats' remaining habitat, Jordan told Merlin, and "if you'll provide advice that keeps us out of trouble, we'll pass on the savings to help bats." The TVA was transformed suddenly from a potential enemy into a staunch ally — a leader in bat conservation. Today, the Tennessee Valley Authority is one of the nation's leading protectors of gray bat caves.

Merlin founded Bat Conservation International on March 12, 1982. It grew from his firm belief in the power of carefully focused research and education, of broad collaboration, and of converting presumed enemies into allies. Re-establishing the gray bat became one of BCI's first priorities.

Merlin had been Curator of Mammals at the Milwaukee Public Museum since 1975, and BCI began its life as a nights-and-weekends operation that was headquartered in his museum office. Years would pass before BCI's reach spanned much of the world, but the seeds of the organization were sown and nurtured.

A January 2002 evaluation trip back into gray bat country demonstrates just how far this species — and BCI — has come. Despite early predictions, the endangered gray bat is proving quite capable of re-establishing itself if freed from human disturbance.

The preliminary report from that trip documents a dramatic recovery. One Tennessee site vividly illustrates the power of education. At Bellamy Cave, where a once-impressive colony had been beaten down to 65 bedraggled survivors, the bats have experienced an incredible rebirth. It is now the hibernation home for an amazing 91,000 gray bats. Twenty-eight years earlier, Merlin had explained how important this cave had once been for gray bats, and the owners responded by installing a fence, gate, and sign to protect the cave.

Two other Tennessee caves demonstrate the changing attitudes of other conservation groups, as well as the enormous impact of partnerships and coalition building.

Hubbards Cave, a hibernation site for meager remnants of a colony that once numbered perhaps a million gray bats, was purchased by The Nature Conservancy in 1984 and, thanks to a broad-based partnership organized jointly by BCI and the Conservancy, is now protected by the world's largest cave gates (See "An Epic Gate" on Page 10). The Hubbard colony has doubled in size and shows every sign of eventually regaining great numbers.

Pearson Cave, gated in 1989 in a combined effort by BCI, The Nature Conservancy, and The American Cave Conservation Association, has, in just over a decade, tripled its gray bat population to some 366,000.

Population counts throughout the gray bat's range confirm the remarkable conclusion that a species whose extinction was predicted as recently as 1969 is now recovering rapidly. The gray bat, while not completely safe, nonetheless seems strong enough to be removed from the list of endangered species, marking an incredible achievement by BCI and its many dedicated partners and volunteers.

Yet BCI can spare little time for celebration. The long story of the gray bat's recovery is an encouraging model, proof of what can be accomplished when committed people, united by a shared and proven philosophy, focus their energy and resources on critical conservation targets. The targets are many.

ROBERT LOCKE is Managing Editor of Bat Conservation International.

1987

National Geographic **magazine publishes "Gentle Flyers of the African Night," a 19-page article by Tuttle.**

American Samoa, at BCI's urging, enacts new law protecting flying foxes from commercial export (primarily to Guam, where they are a culinary delicacy) and establishing game regulations.

India bans quarrying at important Samanar Hill bat caves after BCI Scientific Advisory Board members contact government officials.

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The biggest gate ever built at a bat cave protects the gray bats of Hubbards Cave by keeping humans out during the winter.

An Epic Gate

Steel and Concrete Protect a Crucial Bat Cave

Carved deep into the Cumberland Mountains of central Tennessee is one of the most important bat hibernation sites in the world. Each fall, Hubbards Cave attracts endangered gray bats (*Myotis grisescens*) and seven other species from 100,000 square miles (260,000 square kilometers) around.

But Hubbards' thousands of feet of underground passages and chambers proved almost as attractive to local spelunkers as to bats. These underground explorers were, usually inadvertently, killing bats by the thousands. Being awakened too often in winter can prove fatal for hibernating bats, for each burst of activity burns away fat reserves needed to survive till spring.

When Merlin Tuttle first visited the cave in 1962, he found only a few thousand bats. But eight years later, he discovered a hidden sanctuary, a winter refuge for 250,000 gray bats. These survivors were crammed into too small a space, with many roosting near the floor. Thousands fell victim to floods and raccoons. The last of the great Hubbards Cave population was failing fast: By 1984, barely 88,000 gray bats remained.

By then, however, Tuttle's educational efforts had borne fruit, as The Nature Conservancy's Tennessee Chapter purchased Hubbards Cave.

Now the cave was protected, but what about the bats? With help from Tuttle and Bob Currie of the U.S. Fish and Wildlife Service, a daring plan was developed: They would build the largest gate ever erected at a bat cave. The Richmond Area Speleological Society funded the project. The Nature Conservancy organized local logistics, and Mid-State Steel Corporation donated materials. The Tennessee National Guard built a mile-long road over rugged terrain and hauled tons of equipment up the mountain.

Currie and Roy Powers of the American Cave Conservation Association organized National Speleological Society volunteers from five states. They designed and built the gate under the watchful eye of The Nature Conservancy's Linda Pearsall.

The gate, some 30 feet (9.1 meters) tall and 35 feet (10.6 meters) wide, contains more than 110 tons of steel and concrete to ensure protection of this key hibernation site.

Even that wasn't enough. Many bats refused to pass through the gate and began hibernating in an unprotected area that was especially exposed to vandals. So the partners built a second huge gate in 1999 to protect the new area. This time they relied on a unique design developed by Powers that stopped vandals while giving bats ample room to fly over the top. In 2001, a "bat window" was added to the first gate.

Now bat numbers are growing rapidly at Hubbards Cave.

1987

BCI-sponsored study documents more than 300 plant species and 450 commercial products that rely on bats for pollination or seed dispersal in the Old World tropics.

BCI leads successful efforts to have nine species of flying foxes protected under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix II.

1988

***New Yorker* magazine publishes article by BCI member Diane Ackerman about Tuttle and BCI; membership triples.**

Bat Scholars

BCI Scholar Arnulfo Moreno, here rappelling into a cave to study bats, has become a leader in the U.S.-Mexico Program for the Conservation of Migratory Bats.

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BCI Scholarships Nurture Conservation Leaders of Tomorrow

Bat conservation today depends in large part on pursuing the scientific knowledge needed to convince an often-dubious world that bats are worth protecting and on crafting strategies for that protection. The future will depend on developing new generations of wildlife scientists who are committed to bats and educated in conservation. BCI's scholarship program is meeting both challenges.

From its formal introduction in 1990 through this year, the BCI Student Scholarship Program has awarded 158 scholarships totaling $344,560 to help graduate students do research in 44 countries.

BCI scholars have studied hundreds of bat species from the United States and Uganda to Belgium and Bolivia, touching every continent but Antarctica. Their research explores the vital roles of bats in pollination, seed dispersal, pest control, and biodiversity; species-specific life cycles and the impact of human encroachment; roosting habits and artificial roosts; and many other topics related to bat conservation.

Individual awards, selected by peer review by top authorities, range from $1,000 to $2,500 and average about $2,000 each. One goal of the awards is to open opportunities for matching grants from other sources. BCI scholarships have been matched with outside funding at a ratio of 11 to 1 for a total of $2.29 million in support of student research.

Many of our scholars already have become key players in conservation around the world, while others are well on their way to making lasting contributions.

Consider the career of BCI's first scholarship recipient. Surapon Duangkhae of Thailand, worked with Merlin Tuttle on BCI's earliest international campaign, an effort that won protection for two critical Thai bat colonies in 1982. That experience ignited a deep interest in bat conservation and, before the formal scholarship program began, BCI arranged a grant to help Surapon earn a 1986 master's degree in environmental biology from Mahidol University in Bangkok.

Today Surapon, his nation's top bat biologist, is Secretary General of the Wildlife Fund Thailand and one of the most influential conservationists in Southeast Asia. He helps mold conservation policy throughout the region and his views are often sought by the media. BCI's rather small investment a decade and a half ago is paying enormous dividends for wildlife, including bats.

1989

Tuttle's *America's Neighborhood Bats* is published, eventually becoming an all-time best seller at University of Texas Press.

President Reagan signs legislation, sought by BCI, to create 8,500-acre National Park of American Samoa to protect habitat of Samoan and Tongan flying foxes.

Verne Read receives national Chevron Conservation Award for work as BCI's founding trustee.

Here's a sampling of other BCI Scholars who are contributing greatly to progress and the future:

Michelle Evelyn

Four BCI research scholarships over five years helped Michelle Evelyn earn a Ph.D. at Stanford University. Along the way, she documented the critical importance of fruit-eating bats in regenerating Mexican forests and highlighted strategies for their conservation when slash-and-burn agriculture clears their forests.

Evelyn worked tirelessly to explain her findings and their importance to area farmers and to enlist their help in bat conservation. With help from her husband/colleague, David Stiles, she also collaborated with environmental artist Lynne Hull to produce an educational comic book in Spanish and English to explain the importance of local bats to schoolchildren.

The young biologist continues her career commitment to bat research and conservation, most recently by studying the roosting requirements of forest-dwelling bats at Stanford's Jasper Ridge nature preserve. She is currently writing grant proposals to study the Keen's myotis (*Myotis keenii*), a little-known bat that has a narrow West Coast range from Washington to Alaska.

Arnulfo Moreno-Valdez

Arnulfo Moreno's prolific partnership with BCI — and his unflagging support for Mexico's bats and their habitats — began in 1990, with a BCI-funded project to determine the status of the 10 most important roosting caves of Mexican free-tailed bats (*Tadarida brasiliensis*) known in Mexico.

His alarming findings left no doubt that conservation was urgently needed. Half the caves he visited, each of which had

BCI Scholar Michelle Evelyn is preparing to study Keen's myotis (*Myotis keenii*), a rare bat of the Northwest coast of North America.

1989

Merlin Tuttle, Theodore Fleming, and colleagues begin research documenting roles of endangered lesser long-nosed bats in pollinating and dispersing seeds of giant cacti in Sonoran Desert.

First BCI field workshop, at Queens University Biology Station in Ontario, Canada, is led by bat expert Brock Fenton.

BCI expands educational campaign into Latin America by supporting publication of *Murciélagos Tropicales Americanos* (*Tropical American Bats*).

once contained millions of free-tails, had lost 95 to 100 percent of their bats. Moreno went to work with a vengeance. Armed with educational materials and funding from BCI, he visited government agencies across northern Mexico, provided school programs, and distributed vampire-control advice to ranchers.

With BCI scholarships supporting his research on endangered Mexican long-nosed bats (*Leptonycteris nivalis*), Moreno earned his Ph.D. at Texas A&M University in 2000. His work has contributed greatly to our understanding of the conservation needs of these important desert pollinators.

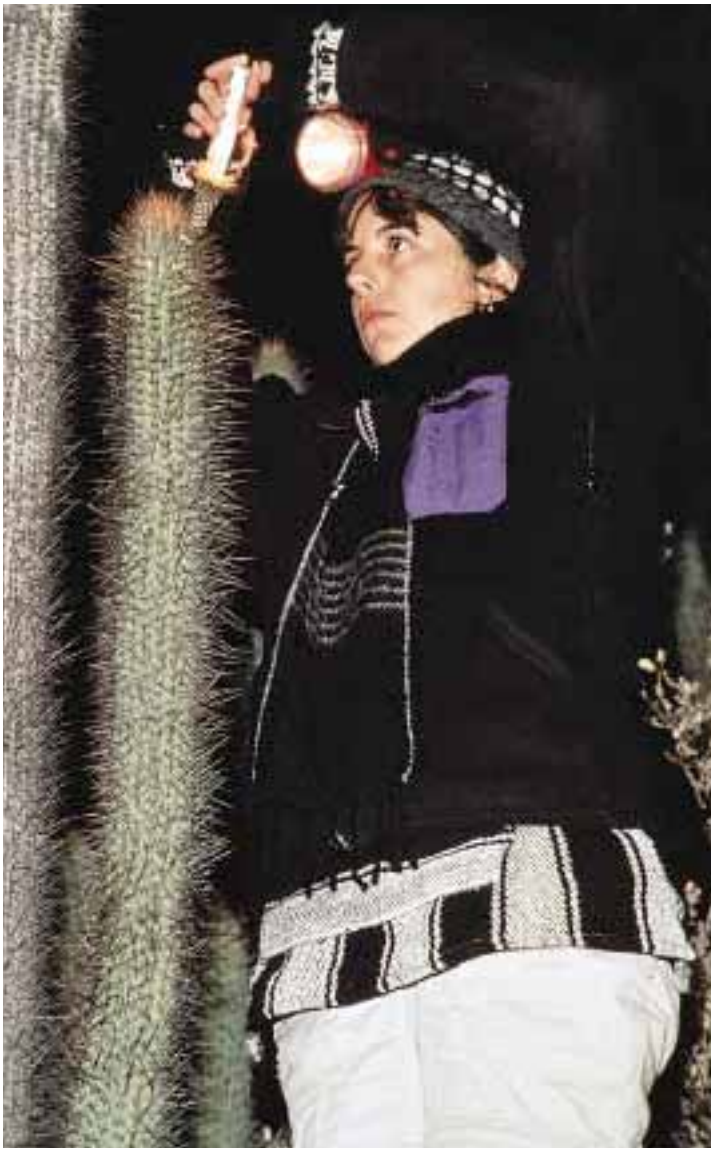
Moreno today is an associate professor at the Technological Institute of Ciudad Victoria in Tamaulipas, Mexico. He serves on BCI's Scientific Advisory Board and is a leader of the U.S.-Mexico Programa para la Conservación de los Murciélagos Migratorios (Program for the Conservation of Migratory Bats) in northern Mexico. He also wrote the book, *Murciélagos de Nuevo León: Nuestros Invaluables Aliados* (*Bats of Nuevo León: Our Invaluable Allies*).

His efforts have protected critical ecosystems and saved countless bats, and his career has decades yet to run.

Catherine Sahley

The Conservation and Research Association of Peru, known as CONATURA, is a vigorous and wide-ranging advocate for community-based conservation in the high Andes. With educational programs, research efforts, community collaborations, and training projects, CONATURA works to conserve Peru's biological diversity while improving the rural standard of living through low-tech and sustainable use of resources. It is run by Catherine Sahley.

BCI pitched in early in Sahley's career, well before she became executive director of the innovative nonprofit, with scholarships in 1990 and '91 for her important doctoral



Catherine Sahley extracts nectar from a bat-pollinated cactus flower. After completing her Ph.D. dissertation, supported by two BCI Scholarships, she became a conservation leader in Peru.

1990

BCI establishes permanent scholarship program to fund conservation-related research by young scientists.

Representatives of 14 island nations and states gather in Hawaii for BCI-sponsored conference on conservation of Pacific island flying foxes that convinces participants to halt most commercial trade.

First of many one-day Bat Study Workshops draws 108 participants to National Zoo in Washington, D.C., to learn how to develop interpretive programs and solve community bat problems.

research. She showed that the endangered Peruvian long-nosed bat (*Platalina genovensium*) is the primary pollinator of a key Andean cactus upon which many desert birds and rodents rely.

Her conservation philosophy was taking root then, as she worked to educate local residents and industry on the importance of protecting beneficial bats of the high country.

Sahley, based in Arequipa, Peru, is also a research associate of the Wildlife Conservation Society and recently spent a year as a visiting professor at the University of Florida's Tropical Conservation and Development Program.

Shahroukh Mistry

The fruit bats of India are important — often essential — for pollinating and dispersing the seeds of more than 114 species of plants, many of them of great economic, ecological, medicinal, and even religious import. But since hardly anyone knew that, these vital animals have for years been classified as vermin and denied even a hint of protection.

A handful of pioneering researchers, including BCI scholarship recipient Shahroukh Mistry, began studying India's bats in earnest barely a decade ago. Mistry used BCI scholarships in 1992 and 1994 to document the economic value of Indian fruit bats, as well as their declining numbers, and to educate students and communities about the need for bat conservation. The research, which led to his Ph.D. degree from the University of New Mexico, would not have been possible, he said, without BCI's support.

Mistry, now an Assistant Professor of Biology at Grinnell College in Iowa, is still studying Indian bats and working for their protection. After years of effort by Mistry, his colleagues, and BCI, change may finally be at hand: India is revamping its Wildlife Protection Act, and a proposal to remove bats from the vermin category and give them their first legal protection is reportedly gaining favor.

For information on supporting BCI's Student Scholarship Program or to apply, visit www.batcon.org/schol on the Web or contact Andrew Puntch at apuntch@batcon.org.

Success Story

Mexican free-tailed bat
Tadarida brasiliensis

Mass Fear in the Air as Bats Invade Austin. Newspaper headlines like this one from the 1980s give bat conservationists nightmares. Such sentiments were common when BCI moved its headquarters to Austin, Texas in 1986.

Renovations of the Congress Avenue Bridge in 1980 had inadvertently turned it into an ideal bat roost. Hundreds of thousands of Mexican free-tailed bats began moving in each spring. Many Austinites were in a panic and the city was moving toward eradication.

BCI launched an aggressive education campaign. Its staff talked with newspaper, magazine, and television reporters, met with city officials, and spoke to community groups and schoolchildren. The stubborn fear that bats attack people and cause disease was shown to be a gross exaggeration: In 20 years of Austin bat watching, no one has been attacked by a bat or contracted a disease from one. And a big attitude shift came with news that the bridge bats could eat 30,000 pounds (13,600 kilograms) of insects in a single night.

The result? The Congress Avenue Bridge now hosts America's largest urban bat colony, with up to 1.5 million free-tails in summer residence. The bats' dramatic evening exodus has become one of the area's largest tourist attractions, and Austin now bills itself as the Bat Capital of America.

Tammy Mildenstein's

initial $1,250 BCI scholarship in 1999 led to partnerships and grants totaling more than $50,000 for her work on fruit bat conservation in the Philippines. She contributed directly to a management plan and nature preserve for the bats, and she has trained local Filipinos in essential skills.

1990

City of Austin erects BCI educational exhibit to teach tourists about once-reviled bat colony under Congress Avenue Bridge and declares itself Bat Capital of America.

BCI membership goes above 10,000.

BCI-funded research documents dramatic decline of migratory bats at Mexico's most important bat caves, leading to major U.S.-Mexico conservation efforts.

Participants in a Bat Conservation and Management Workshop learn how to use a bat detector to identify bats by their echolocation calls.

Workshops for Bats

BCI Training Builds a Foundation for the Future

by Merlin Tuttle

Twenty years ago, bats were about as likely as rattlesnakes or rats to be included in conservation planning. Like those despised creatures, some countries specifically classified bats as vermin — beyond even a hint of protection. In fact, biologists themselves often feared bats as public health threats rather than valuing them as beneficial allies.

In the early days of BCI, leaders of wildlife agencies and private conservation groups logically questioned the importance of bats since trusted biologists were often unaware of their benefits. Bats faced a double obstacle: Their unpopularity made them the world's least-studied mammals, and without knowledge to document their values, bats ranked near the bottom of most conservation priority lists.

BCI's Bat Conservation and Management Workshops were founded specifically to address this vexing challenge. Biologists, educators, and conservationists were invited to intensive five-day field-training sessions on the values and needs of bats. The workshops develop the skills needed to study, conserve, and teach others about bats. Workshop scholarships were awarded to those in positions of special influence.

Today, more than 1,362 Bat Conservation and Management Workshop graduates are scattered among 17 countries. In the United States alone, they represent 48 states, 23 federal agencies, and 198 educational institutions, private conservation organizations, and corporations.

Largely because of their enthusiasm and assistance, BCI has trained more than 1,500 additional participants in specialized workshops that range from protecting bat caves to educating schoolchildren. Nothing in the history of bat conservation has had greater impact for conserving bats.

Workshop graduates are now enthusiastically studying and conserving bats and educating people about bats around the globe. And every year, our workshops add still more professionals to this growing network of bat advocates. Some have made enormous contributions, including those profiled here.

1991

The Secret World of Bats, **television documentary produced by BCI-Survival Anglia, premieres, wins top awards, and eventually airs in 70 countries, with enormous impact for bat conservation.**

Society for Conservation Biology honors BCI with Distinguished Achievement Award for contributions to understanding and protecting biological diversity.

National Geographic **features BCI-sponsored research on vital roles of endangered long-nosed bats in pollinating and dispersing seeds of agaves and giant cacti in southwestern U.S. and Mexico.**

Mark Bloschock

Hundreds of thousands of bats around the world are living comfortably under bridges and inside culverts because Mark Bloschock and BCI joined forces. The Texas Department of Transportation engineer was a key player in developing special bat-friendly designs for new bridges and culverts and simple, low-cost modifications for old ones. And he has for years been explaining to colleagues around the United States and in other countries why welcoming bats makes good sense.

Bats caught Bloschock's attention in the early 1980s, when his Austin hometown faced near-panic over a large colony of bats that moved in under a recently renovated downtown bridge. He began to understand the benefits of bats after reading Merlin Tuttle's *America's Neighborhood Bats*. A BCI workshop hardened his commitment. The Austin bridge, not coincidentally, is now a major tourist attraction and a pride of the city.

Bloschock convinced TxDOT to finance BCI's Texas Bats and Bridges research project and later played a key role in the Bats in American Bridges study that covered 25 states. The resulting publications are still having far-ranging impacts on bridge construction.

At a BCI workshop in Arizona, Bloschock devised a new approach to providing bat roosts in culverts, an innovation that earned him a prestigious U.S. Department of Transportation "Award 2000." BCI also honored Bloschock, now TxDOT's Supervising Bridge Design Engineer, with a 2001 Distinguished Service Award.

Success Story
Grey-headed flying fox
Pteropus poliocephalus

Australian fruit growers have been at war with flying foxes for generations, and the bats have been losing. Grey-headed flying foxes, which numbered in the millions a few decades ago, had dwindled to fewer than 400,000 in all of Australia by 1999.

Killing by orchardists is a primary cause of the species' imminent peril. Fruit crops are harmed during severe droughts when starving flying foxes have little or no other food.

Greg Richards, Bruce Thomson, and Leslie S. Hall, BCI Scientific Advisors in Australia, and others have worked for years protect flying foxes. BCI mobilized its members and allies for letter-writing campaigns, and BCI Founder Merlin Tuttle personally contacted state and federal officials.

Those efforts are paying off. In 1999, the grey-headed flying fox was designated as "Vulnerable" nationally. The state of New South Wales followed suit in May 2001. The designations mean shooting and habitat destruction will be curtailed.

Long-term survival of the species likely depends almost as much on protecting the orchards as the bats. A BCI-suggested low-interest loan program was implemented in 2000. Government loans now help New South Wales growers install netting to protect their fruit crops, not only from flying foxes, but also from birds and hail. And work already is under way on a nationwide Recovery Plan.

Mexican free-tailed bats find a safe home in bridge crevices. BCI workshop alumnus Mark Bloschock of the Texas Department of Transportation has for years been developing bat-friendly designs for bridges and culverts and convincing highway engineers around the country to use them.

1991

BCI hosts 21st Annual North American Symposium on Bat Research, a three-day conference that draws scientists from 14 countries.

Educator's Activity Book About Bats **is published for elementary schoolteachers.**

1992

Founders Circle member Bill Haber plays key role in helping BCI purchase permanent headquarters building in Austin.

After attending a BCI workshop, Harry Harnish of the Arkansas State Parks became a tireless advocate for bats and an entertaining and popular bat-conservation educator for park visitors.

Harry Harnish

Even after 20 years as an Arkansas State Parks interpreter, Harry Harnish had never seen a bat up close until he was assigned to Devil's Den State Park in the mid-'80s. Rife with caves, the park was home to at least nine bat species, including the endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*). That stirred Harnish's curiosity, so he joined BCI and attended a Bat Conservation and Management Workshop. He hasn't slowed down since.

He has experimented successfully with bat houses at the park, and he gets very high marks for protecting the colony of Ozark big-eared bats. He's also in continual demand as an entertaining and informative speaker for schools and community groups, as well as for park visitors.

But what really turned Harnish into "the Batman of Northwest Arkansas" is the Bat-o-Rama. Devil's Den State Park near Fayetteville goes into overdrive one weekend every summer. Families come from around the region for a series of programs that covers everything from slide shows and bat facts to bat-house building and bat-viewing excursions.

Harnish's message reaches thousands of people of all ages each year, and his park's endangered bats are safer because of it. Harnish received BCI's 1999 Distinguished Service Award, as well as a Special Commendation from the Arkansas State Parks Director.

Fred Stabler

A wildlife biologist with the U.S. Bureau of Land Management in Washington, D.C., Fred Stabler found much of his early enthusiasm for bats at BCI workshops in Arizona and Pennsylvania, beginning in 1994. That enthusiasm was a key factor in the creation of two major bat-conservation efforts with BCI.

In 1994, Stabler played the lead role in establishing the BLM Bats and Mines partnership with BCI that has saved millions of bats across North America. The extraordinary success of this collaboration convinced Stabler of the need for a much broader collaboration, with shared planning and strategies, that would link federal, state, and local partners throughout the continent.

He proposed the North American Bat Conservation Partnership (NABCP), which was established under BCI coordination in 1998. The broad-based partnership includes biologists, conservation groups, government agencies, and corporations in Canada, Mexico, and the U.S. It works to identify mutual priorities, develop a continent-wide conservation strategy, and share funding and other resources. Its potential is immense.

Stabler, who serves on the NABCP Executive Committee, is always looking for still more ways to protect bats. He was honored with BCI's Distinguished Service Award for 2000.

1993

BCI buys and protects entrance of Bracken Cave in Central Texas, summer home to world's largest bat colony.

Comprehensive BCI survey of 400 bat-house owners in U.S. and Canada demonstrates potential of artificial roosts and identifies key success factors.

Memorandum of Understanding between BCI and U.S. Bureau of Land Management improves conservation and management of bats on 270 million acres of public land.

Workshop participants give BCI Education Programs Director Janet Tyburec their undivided attention during a 1995 workshop in Pennsylvania.

Alice Chung-MacCoubrey

Bats top the list of the world's least-studied mammals, and the forest-dwelling bats of the American Southwest were among the continent's least-understood species. Then Alice Chung-MacCoubrey went to work for the U.S. Forest Service in New Mexico.

As a wildlife biologist, she attended a BCI Bat Conservation and Management Workshop in Pennsylvania in 1996 to learn the secrets of mist-netting, handling, and identifying bats. She was soon hard at work on the first of a series of tree-roost studies in New Mexico. Designed to help the Forest Service improve its management of bat habitats in the Southwest, her research explored bats' roosting preferences in piñon-juniper forests, ponderosa pine forests, woodlands along the Rio Grande, and in nearby desert environments.

At a 2000 BCI workshop in Arizona, she added bat detectors to her research repertoire and is now conducting long-term acoustic monitoring studies in the forests along the Rio Grande. This research examines how forest-management strategies for fire prevention affect bat activity.

Thanks to Chung-MacCoubrey's dedication and expertise, Southwestern bats are a lot less mysterious — and much safer — today.

The spotted bat, native to western North America from Mexico to British Columbia, is among the rarely seen bats in Alice Chung-MacCoubrey's arid research area.

1993

BCI's first Founder's Circle ecotour explores bats and other wildlife in rain forests of Belize.

BCI founds North American Bat House Research Project with initial network of 700 volunteer researchers nationwide and produces *The Bat House Builder's Handbook*.

BCI, U.S. Forest Service, and Arizona Game and Fish Department use radio transmitters for first comprehensive study of forest-dwelling-bat roosting requirements in U.S. Southwest.

One of the first bat houses, built in 1918 at Comfort, Texas, is still sometimes used by bats.

North American Bat House Research Project

BCI's Volunteer Researchers Design Better Homes for Bats

by Mark Kiser

America's first known bat houses were built near San Antonio, Texas, in 1902. Hardly anyone noticed, and the idea of artificial bat roosts languished for the next eight decades. Then came the 1980s, and Bat Conservation International became the pivotal promoter of bat houses as an inexpensive way to help bats while cashing in on their voracious appetites for bothersome insects.

Bat houses began popping up in backyards, farmlands, and orchards around the U.S. and Canada, but their effectiveness was still hotly debated as recently as the early 1990s. Few systematic observations existed on the sizes, shapes, colors, building materials, or locations bats might prefer.

In 1992, BCI conducted a comprehensive survey of more than 400 bat house landlords. The study, which found bats using more than half the established houses, effectively erased skepticism about bat house utility. And it generated the first reliable data about bat roosting preferences over broad areas of North America.

The new findings led to the first edition of BCI's *The Bat House Builder's Handbook*, which remains one of the University of Texas Press' bestsellers. And it led BCI, in the spring of 1993, to launch the North American Bat House Research Project, a long-term volunteer effort to quantify roosting preferences and fine-tune artificial roosts to better meet the needs of bats.

Thousands of volunteer Research Associates from coast to coast make the Bat House Research Project possible. Each Associate receives *The Bat House Builder's Handbook*, now in its sixth revision, and *The Bat House Researcher* newsletter. Each year, Research Associates, who range from biologists and students to farmers and urban homeowners, contribute invaluable data about the bat houses they have installed.

1994

North American Bats and Mines Project, a joint effort of BCI and U.S. Bureau of Land Management, is launched to survey and protect bat roosts in hundreds of thousands of abandoned mines.

BCI produces *Controlling Vampire Bats and Bovine Rabies* video to address one of Latin America's most critical bat-conservation problems — destruction of millions of beneficial bats in misdirected attempts to control vampires.

U.S. Forest Service and Bureau of Land Management collaborate with BCI on *Bats: Masters of the Night Skies*, full-color brochure emphasizing importance of bats and their conservation needs.

A film crew prepares to tell the story of Frank Bibin's success in BCI's *Building Homes for Bats* video.

As a direct result of this information sharing, bat house success rates have more than doubled since 1995. In our 2000 survey, 155 Research Associates reported sheltering more than 25,000 bats in 636 houses. Over 100,000 more were roosting in specially designed larger roosts in six U.S. states and one Canadian province. At least 13 species now use North American bat houses.

Data analysis demonstrates the importance of vents, landing areas, painting, caulking, proper placement, and the impact of size and design on success. The smallest houses do not perform as well as larger ones; nursery houses with roost chambers at least 25 inches (63.5 centimeters) tall are achieving overall occupancy rates of 85 percent. Those rates approach 96 percent for houses that are built and painted or stained according to BCI criteria and located where they receive adequate sunlight in areas of mixed agriculture and natural vegetation.

As we continue to improve bat house success rates, the project is also broadening its research objectives. One continuing priority is an investigation into the use and effectiveness of bat houses as part of integrated pest management strategies for agriculture.

We are also working with research partners to develop new artificial roost designs to accommodate bats that don't roost in crevices and are therefore not candidates for traditional bat houses. For example, with Walter Sedgwick's support, concrete culverts are being stacked vertically to simulate the increasingly rare giant hollow trees that were formerly used as roosts by Rafinesque's big-eared bats (*Corynorhinus rafinesquii*) in the southeastern United States. Early results are very encouraging.

Bat houses are now successfully used throughout North America and in Africa, Asia, Australia, the Caribbean, and Europe. Yet much remains to be learned to maximize their potential for varied species and environments. Research Associates are still needed.

Here's a sampling of the project's many outstanding bat house landlords:

Marvin Maberry
The innovator

Retired highway patrol officer Marvin Maberry of Daingerfield, Texas, designed the first plastic bat house in 1989 and attracted his initial tenant, a big brown bat (*Eptesicus fuscus*), that year. He keeps experimenting with new materials and techniques and now has more than 700 big browns in a dozen bat houses, one of which hosts more than 500 bats — the largest group of big brown bats reported in any bat house.

Maberry's still making improvements, building and selling eight bat house models, which have been certified as "Bat Approved" by BCI. Thousands of bats, all across North America are now benefiting.

Cal Butchkoski
The biologist

In 1989, Cal Butchkoski cobbled together a bat house from an old army-surplus ammo box. A decade or so later, this Pennsylvania wildlife biologist has built and installed more than 70 bat houses and monitors dozens more. With an incredible occupancy rate of 91 percent, he is providing roosts for thousands of bats.

Among his many contributions to the field of artificial bat roosts, Butchkoski introduced the ventilation slots now used on most bat house designs. And a big 8x8x8-foot (2.4x2.4x2.4-meter) condo he designed is being used by thousands of bats in four U.S. states and one Canadian province.

When nuisance colonies must be excluded from buildings, he has saved countless bats by convincing people to provide strategically placed bat houses before beginning the exclusion.

When not improving bat house designs, Butchkoski often inventories summer nursery colonies in buildings or

1994

BCI and Texas Department of Transportation form research partnership to create bat roosts in bridges during highway construction.

U.S. State Department helps BCI and National University of Mexico's Instituto de Ecología found the U.S.-Mexico Program for Conservation of Migratory Bats to study and protect millions of migratory bats.

1995

BCI works with National Park Service, Texas Railroad Commission, and colleague Scott Altenbach to protect Texas' Mariscal Mine, which becomes home to America's largest known colony of Townsend's big-eared bats.

Marvin Maberry works on one of his many innovative bat house designs.

surveys winter hibernation sites in mines and caves, many of which he has helped protect with bat gates. Bats have few more valuable allies.

Kent Borcherding
The woodworker

Adding a commitment to bats to expert woodworking skills has resulted in the creation of some 500 bat houses since 1994. Retiree Kent Borcherding of Hazel Green, Wisconsin, continually tests new materials, designs, and techniques, then shares what he's learned with other enthusiasts.

He gives frequent lectures about bats and has provided over 50 of his bat houses for use in Illinois and Wisconsin state parks. These alone now shelter more than 5,000 bats.

Frank Bibin
The farmer

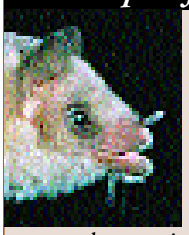
Hickory shuckworms were damaging more than 30 percent of the crop at Frank and Teresa Bibin's organic pecan orchard in Georgia. Conventional growers often spray pesticides six times a year to control shuckworms — not an option at an organic farm.

Searching for non-chemical alternatives, the Bibins joined the Bat House Research Project and built their first nursery house in July 1996. Although bats had rarely been seen on the farm, more than 100 free-tailed bats (*Tadarida brasiliensis*) and evening bats (*Nycticeius humeralis*) had moved into the bat house by 1998. The Bibins saw fewer moths that year and suffered less crop damage from shuckworm larvae.

Excited by the prospect of success, the Bibins added 12 more houses over the next few years and now have nearly 3,000 bats patrolling the skies over their orchard. Bibin, who now sells BCI-certified bat houses, reports virtually no losses to shuckworms. Success stories don't get much better than that.

MARK KISER is Project Coordinator of the North American Bat House Research Project.

Success Story
Mexican long-nosed bat
Leptonycteris nivalis



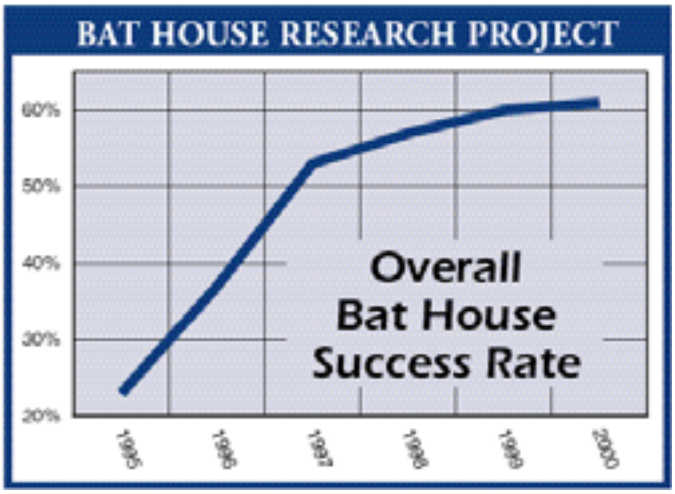
You can thank the Mexican long-nosed bat (and its cousin, the lesser long-nosed bat) for the margarita. Without these now-endangered species, agave plants might never have thrived in the deserts of Mexico. Without agaves, there is no tequila. No tequila, no margaritas.

BCI-sponsored research has helped demonstrate that long-nosed bats are by far the most important pollinators of wild agaves, while the plant's nectar is a critical food for the bats, both in Mexico and along their migration routes into the southwestern U.S.

The demand for tequila and mescal led to immense illegal harvests of wild agaves by bootleggers, jeopardizing both endangered long-nosed bats and unique desert ecosystems.

In 2000, Arnulfo Moreno, BCI's director of field projects in northern Mexico, convinced officials in Nuevo Leon and Tamaulipas to begin replanting agaves along the bats' migration corridor. That year, more than 70,000 agaves were planted, instead of non-native trees, to control erosion.

These states are now also experimenting with improved methods of seed dispersal, and the program is expected to spread to other parts of Mexico.



To join the North American Bat House Research Project, go online at www.batcon.org/bhra or call 512-327-9721. The Web site also offers *The Bat House Builder's Handbook*, the *Building Homes for Bats* video, certified bat houses, and free plans for building a small bat house.

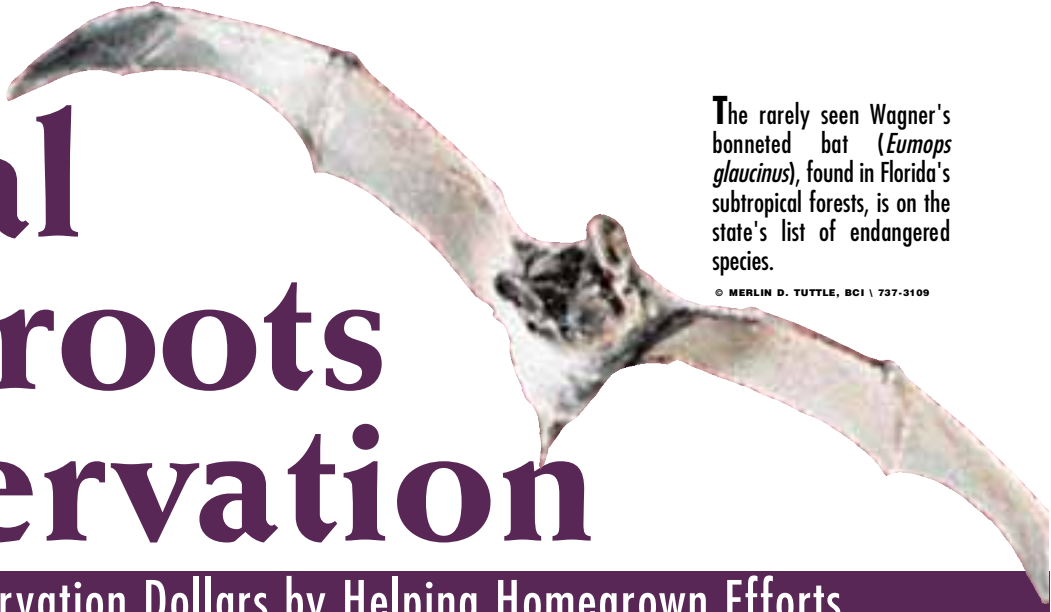
1996

Thanks to special help from Perry, Lee, and Ed Bass and the Houston Endowment, BCI retires mortgage on its headquarters building in Austin.

Bats reach the Internet with www.batcon.org, BCI's site on the World Wide Web.

Gary McCracken of University of Tennessee and John Westbrook of U.S. Department of Agriculture, supported by BCI, put radio microphones on weather balloons and record bats feeding on corn earworm moths high above Texas crops, an early suggestion of Mexican free-tailed bats' immense value in pest control. (See *National Geographic*, April 2002.)

Global Grassroots Conservation



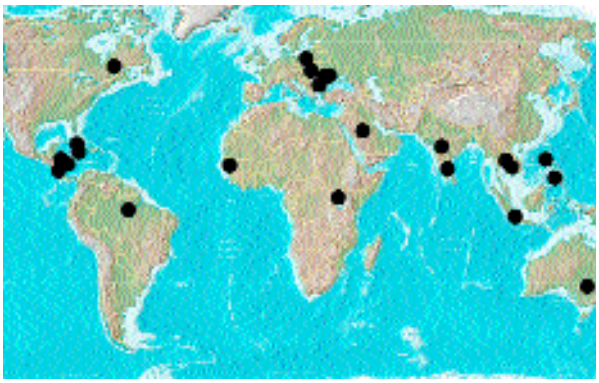
The rarely seen Wagner's bonneted bat (*Eumops glaucinus*), found in Florida's subtropical forests, is on the state's list of endangered species.

Stretching Conservation Dollars by Helping Homegrown Efforts

Szanto Laszlo had drive, dedication, a fresh master's degree in biology, and the commitment of other young Romanians in the Eco Studia Society. All he lacked was a bit of support to begin surveying and helping the long-ignored bats of Romania.

Laszlo turned to BCI's new Global Grassroots Conservation Fund, winning a grant of $2,500 in 2001. It is hard to imagine a greater return on so modest an investment. Here is how Laszlo and the Eco Studia Society (the youth branch of the Transylvania Museum Society) stretched their BCI dollars:

They produced a bat identification booklet in the Romanian language for conservation groups and cavers, and a full-color bat poster for schools. They organized two workshops on the identification, handling, and protection of bats for cavers. They established a regional group to monitor and protect important cave roosts. They surveyed eight important caves, documenting populations of 10 bat species. And most critically, they assembled and trained young people who are now dedicated to studying and protecting the bats of Romania. Imagine the potential for bat conservation in the years to come!



That is how far a dollar can go when you put it in the right hands. And that is the reason for the Global Grassroots Conservation Fund: to use small, low-risk grants (typically $500 to $5,000 each), along with education and training materials and loaned equipment, to support locally conceived and executed bat conservation projects around the world. The enthusiasm of local professionals and volunteers dramatically magnifies the impact of the funds, which often also generate matching grants from other sources.

BCI has for years been funding local conservation projects on an ad hoc basis. Global Grassroots, which was launched in January 2000, established a formal process for application, evaluation, and selection. In its first two years, the program has supported 29 projects in 19 countries.

It is protecting flying foxes in Cambodia, putting up bat houses in Honduras, supporting a bat education center in the Philippines, teaching high school students to survey bats in the Cayman Islands, building a network of bat conservationists in India, constructing a gate to protect an important bat cave in Poland, and helping develop bat ecotourism in Uganda.

The list goes on and the payoffs continue. There are few places where you can get this much bang for your conservation buck.

For information on supporting the Global Grassroots Conservation Fund or to apply for a grant, visit www.batcon.org on the Web or contact Andrew Puntch at apuntch@batcon.org.

1996

BCI Trustee Eugenio Clariond publishes *Murciélagos de Nuevo León* (*Bats of Nuevo León*), first popular, conservation-oriented book on Mexican bats.

At BCI's request, Mexican Nature Conservation Fund makes bat conservation a top priority and awards $228,000 to Program for Conservation of Migratory Bats.

1997

North American Bat Conservation Partnership is founded to increase collaboration among bat researchers, federal and state agencies, conservation groups, and private industry in United States, Canada, and Mexico.

The Bracken Bat Cave & Nature Reserve, as seen in an artist's conception, will offer visitors one of the most innovative and ecologically gentle education centers in the world.

A Priceless Resource

Bracken Bat Cave Will Teach the World about Bats

by Bob Benson

It is the boldest of dreams: a cutting-edge education and research center that sits lightly in the Texas Hill Country and offers breathtaking views of the largest community of mammals on Earth. It will be an experience so powerful that visitors will come from around the world and leave with a profound new understanding of the gentle, vital, and fascinating nature of bats. The Bracken Bat Cave & Nature Reserve — crown jewel of BCI's 20-year commitment to bat conservation — is nearing reality.

The heart of the project is Bracken Cave, summer home to some 20 million Mexican free-tailed bats (*Tadarida brasiliensis*). Here, barely 20 miles (32 kilometers) north of downtown San Antonio, Texas, the largest known bat colony in the world comes to rear its young — as the city grows steadily closer.

The bats' spectacular evening emergence, visible for miles around, is one of the natural wonders of our planet. Each night, the bats spread out over surrounding towns and farms to consume 200 tons of night-flying insects. Experiencing this awesome encounter with nature can immediately change a lifetime of negative perceptions about bats and create new commitments to conservation.

Bat Conservation International has been protecting this magnificent bat colony since 1992, when BCI, with a grant from the Ewing Halsell Foundation, bought the cave and five acres surrounding its entrance. Now the goal is to share it, with great care for the bats and the rugged landscape, with the rest of the world. The potential impact for bat conservation is enormous.

Access to Bracken has been sharply limited. A variety of volunteers, especially the Bexar County Grotto, a group of San Antonio-area cavers, cleared trails, repaired Civil War-vintage buildings and stone walls, built fences and a privy, and installed interpretive signs. The Grotto became BCI's official cave steward.

For more than a decade, BCI has, in cooperation with surrounding landowners, been purchasing land around the cave, enough for a buffer zone to protect this invaluable resource from San Antonio's rapid growth. With generous support from the Lennox Foundation, the Ewing Halsell Foundation, and the Beneficia Foundation, plus a loan from FirStar Trust Co., BCI increased its Bracken holdings to 432 acres in 1997.

Efforts to further expand the protected buffer zone continue as BCI works with The Nature Conservancy of Texas, the City of San Antonio, the Edwards Aquifer Authority, San Antonio Water Systems, and other potential buyers of conservation lands to finalize the long-sought purchase of the entire ranch.

The dream of an international bat education center, built on BCI's current land, has been percolating for years. BCI Trustees approved the concept in 1998 and hired architects Overland Partners Inc. of San Antonio to develop the design. The Kronkosky Charitable Foundation provided the lead grant,

Marcelo El Murciélago (*Marcelo the Bat*), first of six bilingual books that teach children about bats, is jointly produced by BCI and Program for Conservation of Migratory Bats.

BCI expands its protection of Bracken Bat Cave in Central Texas by purchasing a 430-acre buffer zone.

BCI releases *Discover Bats!* activity kit for teachers, combining handbook/lesson plans with dynamic videos as the premier English language educational tool about bats.

while the Brown Foundation put up matching funds. The intense planning phase began in 1999.

This center will be one of the most environmentally sensitive facilities in the world, providing a model for sustainable development. The facilities, enclosing an anticipated 30,000 square feet (2,787 square meters), will rest inconspicuously among the Hill Country oaks and junipers. The low, curving walls will be built of native materials, with native plants growing in rooftop gardens. The main building, partially recessed into the ground, will be hidden by surrounding trees. It will give visitors an ideal viewing platform to watch the columns of bats emerging from the cave. Rainwater will be harvested and wastes recycled. The center will be an almost-natural part of the Central Texas hills.

Interpretive areas will evoke the form and mystery of the bat cave, while interactive educational exhibits tell the story of the Bracken bat colony, bats worldwide, and the interdependence of humans, wildlife, and the land. Nature trails will further interpret the plants and animals of Texas.

Special viewing areas are planned for watching the emergence with minimal disturbance. Miniature cameras placed discretely within the cave will allow both scientists and visitors to watch live as the bats court, feed their young, communicate, and leave the roost to feed.

Since bats remain by far the world's least-studied mammals, the center will also provide facilities for BCI-sponsored conservation, research, and education. Income from the center will help support bat conservation and research around the world.

The Bracken Bat Cave & Nature Reserve will ensure permanent protection of this priceless resource — the world's largest community of these gentle, threatened creatures that play so vital a role in the balance of nature. And it will teach its lessons of conservation with such excitement and drama that Bracken's bats will surely become one of Texas' most beloved natural attractions.

BOB BENSON, BCI Public Information Manager, heads the Bracken Campaign.

The evening emergence of the world's largest bat colony at Bracken Cave (seen here from inside the cave) is an unforgettable sight.

©MERLIN D. TUTTLE, BCI \ 000-1205

Emerging bats from Bracken Cave enthrall BCI members, who are among the few currently allowed to visit.

Success Story

Straw-colored flying fox *Eidolon Helvum*

©MERLIN D. TUTTLE, BCI \ 000-1206

Africa's straw-colored flying foxes, with their huge, conspicuous colonies, are easy targets for commercial hunters. Major colonies are declining in several African countries, and few people care.

That's changing in Ghana. Timber is Ghana's third most important export, and the Iroko tree accounts for nearly 17 percent of timber sales.

In 1998, BCI staff biologist Dan Taylor and Ghana biologist Bright Kankam spent many nights perched on platforms high in Iroko trees to study bats feeding on Iroko fruit and determine the amounts and germination rates of seeds dropped in flight by bats or birds.

Their conclusion: Bats account for more than 98 percent of Iroko seed dispersal, while birds have no measurable impact. In short, bats seem to be essential for long-term survival of Iroko trees and the industry that depends on them. Forestry and timber officials are now paying much more attention to straw-colored flying foxes.

1998

Research at key Indiana bat hibernation caves, organized by BCI in collaboration with U.S. Forest Service, Fish and Wildlife Service, and local biologists, leads to vital conservation actions at three important hibernation caves for this critically endangered species.

Bolivian scientists and BCI collaborate to establish the Program for Conservation of Bolivian Bats.

Program for Conservation of Migratory Bats and Mexico's public-education radio system produce 20 bat-education programs for radio. The series of 15-minute radio spots wins Latin American Radio Conference Grand Prize for Children's Programs and is broadcast throughout Mexico.

Austin initially talked of destroying the colony of Mexican free-tailed bats that moved in under the Congress Avenue Bridge. Now they're a top tourist attraction and the city calls itself the Bat Capital of America.

Bats in the News

Bat-bashing Media Become Education Allies — Most of the Time

by Bob Benson

Two decades ago, "The Nightmare House" offered a fairly typical media portrait of bats in those days. The story in a respected national magazine contended that a terrified family had been "imprisoned" in its home for four nights by hordes of crazed bats. The deranged creatures crashed into windows and doors, desperately seeking entry for some unknown, but no-doubt nefarious purpose.

The media in those years spread wild exaggerations and harmful misinformation about bats; then they reported, often sensationally, the unreasoning fears that resulted. The challenge facing Bat Conservation International at its birth in 1982 was clear.

The world of the 1980s was a consistently hostile place for bats. Practically everyone "knew" that bats were disease-ridden pests that would suck your blood — or at least become hopelessly entangled in your hair. Published photos of bats invariably showed disheveled creatures with their wings stretched painfully open, while fear and discomfort produced an unnatural look of bared-teeth anger. Pest- and rabies-control industries often fanned the fears, then put a hefty price tag on services.

> BCI depends on its members to keep us informed about the media's portrayals of bats. Please forward media clippings to BCI, in care of Bob Benson (bbenson@batcon.org). When the situation warrants, write to your local newspaper or television station to correct myths.

BCI almost immediately began a positive public-education campaign. The organization won an early victory when *The Wall Street Journal* published on its front page one of the first positive stories about bats ever to appear in a national publication. The article featured BCI and quoted founder Merlin Tuttle.

Patient and carefully accurate work with newspaper, magazine, and television reporters is still paying dividends for bats, as do outreach programs to schools and community groups around the world. Of critical import, realistic bat photography, using techniques pioneered by Tuttle, showed for the first time bats' gentle nature and delightful appearance — when they aren't being tormented. Building alliances among pest- and rabies-control industries led to improved tolerance, including broad commitments to non-lethal exclusion as the appropriate solution in cases where bats became nuisances in buildings.

A measure of just how far bats have come is found in BCI's home of Austin, Texas. "Mass fear in the air as bats invade Austin" read a headline in *The Austin American-Statesman* after hundreds of thousands of bats moved in under a renovated downtown bridge. A frightened

1999

BCI negotiates partnership with U.S. Interior Department's Office of Surface Mining to protect bats in thousands of abandoned mines on private and Native American lands.

North American Bat Conservation Partnership, at BCI-hosted meeting, agrees on continent-wide priorities for Canada, Mexico, and the United States.

Volunteers install massive gate at remote Rocky Hollow Cave in Virginia to protect former home of a million or more endangered Indiana bats. Barely 1,200 bats remained, though recovery now seems likely.

© ELAINE ACKER, BCI \ 916-2304

Thousands celebrate the bats of Austin, Texas, during BCI's annual Free-tail Free-for-All at the Congress Avenue Bridge. The popular event shows the power of education; just 15 years ago, frightened residents wanted the bats removed by any means.

populace demanded their removal and their destruction seemed imminent.

BCI, after moving to Austin in 1986, worked with the city's media to dispel myths and explain that the bridge bats eat tons of the area's most costly insect pests each summer night. Today, the Congress Avenue Bridge houses the world's largest urban bat colony, which has become one of the top tourist attractions in a city that now calls itself the Bat Capital of America. Positive and entertaining education has worked wonders for bat conservation.

The media throughout North America and much of the world have become far more friendly toward bats, often serving as crucial allies in explaining the truth about bats. BCI today has become the most trusted and frequently contacted source of information for major newspapers, corporate newsletters, magazines of all kinds (from *The New Yorker* to repeated appearances in *National Geographic*), and a broad assortment of Web sites. Tuttle's photos are reproduced around the world, including this year on the first U.S. postage stamps ever to celebrate bats. BCI collaborations on national and international television and radio news reports and documentaries have reached hundreds of millions of people.

While most bat stories these days are far more accurate and balanced than 20 years ago, old habits sometimes are hard to break. Scare stories still appear from time to time, but now they rarely go unchallenged by BCI or our ever-alert members and allies. *The New York Times*, in September 2000, repeated misleading fears of disease and profiled a suburban pest controller who charges New York families as much as $5,000 or more to remove bats from their homes. Soon after, *The Times* published a letter to the editor from a National Audubon Society official responding to the story. The letter was headlined: "Repeat After Me: Bats Are Our Friends."

Vigilance, along with such prompt responses, remains vital. Scare stories even today can lead to the killing of thousands of bats. Nevertheless, through BCI's efforts, more and more people the world over are discovering that the truth about bats is even more fascinating than the myths.

BOB BENSON is BCI's Public Information Manager.

BCI's Eco-Adventures

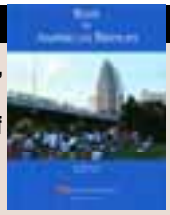
BCI has for a decade been sponsoring bat eco-adventures to some of the world's most exotic locations for its members. On visits to 16 countries so far, we have given members the unforgettable experience of capturing and releasing some of the world's most spectacular bat species, as well as seeing a broad range of other rarely seen wildlife. Revenue from these trips is often invested in bat-conservation projects in the countries we visit. For information about upcoming eco-adventures, visit BCI's Web site (www.batcon.org) or call Pat Ludden at 512-327-9721.

1999

BCI research identifies probable cause of dramatic 20-year decline of Indiana bats in Missouri's most important hibernation cave, leading to restoration of required temperatures and colony's anticipated recovery.

Great Lakes Bats and Mines Initiative begins to protect hundreds of miles of abandoned mine passages used as critical hibernation sites by countless little brown and big brown bats.

Bats in American Bridges **published by BCI, culminating five years of research into bat-friendly bridge designs. As a result, millions of bats now live in bridges and culverts modified to accommodate them.**



Bats & Mines

Saving the Last Sanctuaries for Millions of Bats

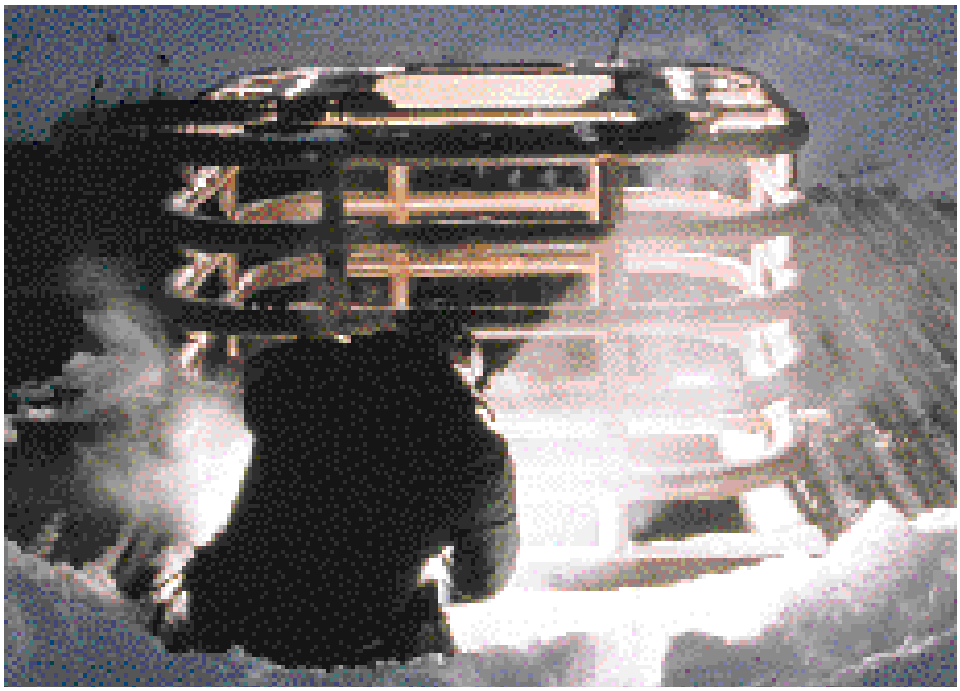
The old iron mine had been abandoned for decades. Its entry shaft, a gaping maw some 300 feet (91 meters) straight down, was a hazard the town of Iron Mountain, Michigan, didn't want to live with any longer. So plans were laid in 1992: Tons upon tons of dirt would be dumped to fill the hole that had been cut by hard-rock miners as much as a century before. Then they found bats.

A local caver, Steve Smith, wanted to explore the old mine before it was permanently sealed. What he and his friends found was seemingly endless thousands of bats clinging to the mine's walls and ceilings. Little brown and big brown bats (*Myotis lucifugus* and *Eptesicus fuscus*) had formed one of the largest hibernating bat populations in America, and they were about to be trapped inside the Millie Hill Mine. Smith called Bat Conservation International.

BCI Founder Merlin Tuttle contacted the Michigan Department of Natural Resources, which assigned biologist Bob Doepker to help. Unfortunately, neither the mining company nor community officials understood the importance of bats. Phone calls went unreturned as local leaders apparently hoped to hasten the project before anyone could interfere.

So Tuttle headed for Iron Mountain. Instead of causing embarrassment through the news media, he spoke at two elementary schools, where Zoie, BCI's flying fox mascot, enchanted the children. He invited them to a special program at the county library. Two nights later, despite sub-zero weather, more than 200 youngsters showed up with their unsuspecting parents, who included leading business people and city officials. After Tuttle's talk on the values and needs of bats, local companies donated materials, citizens volunteered their time and skills, and an enthusiastic partnership was formed to save the bats.

By the next summer, the mine entrance was stabilized and spanned by a special steel cage and gate that was hoisted onto a concrete foundation. People were protected while the bats were given free access. The Millie Hill effort preserved a safe haven for hundreds of thou-



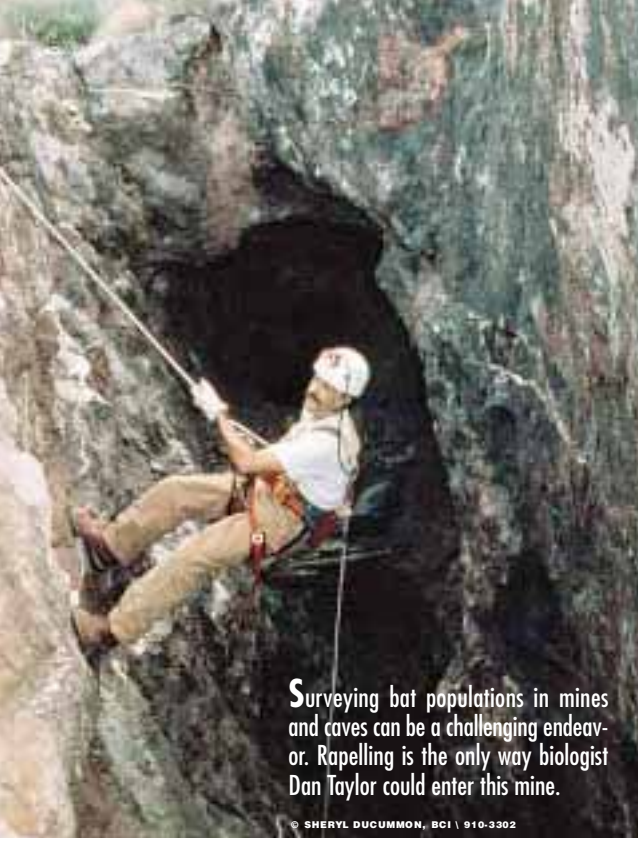
As part of the Great Lakes Bats and Mines Initiative, a new gate is installed at the Pewabic Mine in Michigan, reopening it for use by bats.

2000

First of its kind partnership — state and federal agencies, university biologists, conservation groups, and timber companies — creates Northwest Bat Cooperative to improve habitat management for bats in northwestern forests.

Global Grassroots Conservation Fund founded to address critical bat conservation needs with small grants and other support for high-return, low-risk, community-based projects worldwide.

Mexico Program for Conservation of Migratory Bats, supported by BCI, expands mission to all 140 bat species native to Mexico and opens first permanent office in Mexico City.



Surveying bat populations in mines and caves can be a challenging endeavor. Rapelling is the only way biologist Dan Taylor could enter this mine.

© SHERYL DUCUMMON, BCI \ 910-3302

sands of hibernating bats, but its impact reached far beyond Iron Mountain.

The area's leading mining company, Cleveland Cliffs, was so pleased with the outcome that it offered to co-host a workshop on how to save mine-dwelling bats of the Great Lakes Region, and the door was opened for years of collaboration between BCI and the mining industry.

The success of education without confrontation and of nurturing collaborations among disparate partnersbecame a model that set the stage for the founding of BCI's North American Bats and Mines Project in 1994. Wildlife biologist Dan Taylor was its first director.

Begun as a partnership with the U.S. Bureau of Land Management, the project coordinates efforts to protect mine-roosting bats throughout North America. BCI's Bats and Mines Project has grown into an extensive network of local, state, and federal agencies, as well as private entities (including some of America's largest mining companies), working together to manage abandoned mines as bat sanctuaries. Thousands now are safe, not only for humans but also for millions of bats.

The challenges facing the Bats and Mines Project were — and remain — critical. Without this almost unheard-of coalition of miners and conservationists, vast numbers of American bats would have been doomed when their last refuges were bulldozed or otherwise sealed during mine safety and reclamation efforts.

By the 1990s, more than 95 percent of the known population of little brown bats relied on old mines to survive winter, mines that mostly would have been sealed without the Bats and Mines Project and its partners.This species, though still ranked among North America's most abundant, could well have become a candidate for endangered listing. In the project's Great Lakes Initiative alone, hundreds of miles of copper-mining tunnels, favored by the largest remaining populations, were set aside as permanent sanctuaries for migrants from a huge region.

The Indiana bat (*Myotis sodalis*), a longtime endangered species, had already lost its key hibernation caves to commercialization before this project began. But after Illinois' Magazine Mine was protected in 1996, Indiana bats rebounded dramatically in this newly available home. In the first three years of protection, numbers zoomed from less than 100 to an astonishing 9,000. Due to its location, ideal temperatures, and sprawling passages, this one mine has the potential to someday shelter more Indiana bats than are currently known in all of North America combined.

The Bats and Mines Project is scoring similar successes in the American West. Dozens of mines have been set aside for the threatened Townsend's big-eared bat (*Corynorhinus townsendii*), reversing population declines at many locations. For example, gates were installed at the Mariscal Mine in Texas' Big Bend National Park to protect a now-growing nursery population that numbers in the thousands, the largest known anywhere.

Over the past century, countless mines of all sizes were worked and abandoned across the continent. Many of them have become havens of last resort and they now shelter a large proportion of America's remaining bats. BCI and its partners have saved millions of these bats, but many more remain at risk.

Surveys continue to identify mines favored by bats, and ongoing research is determining their needs. America's bats will need continuing help from the North American Bats and Mines Project for years to come.

SUCCESS STORY

LITTLE BROWN BAT

Myotis lucifugus

New Jersey's Hibernia Mine, a source of iron ore since 1722, was by the 1980s one of the most important bat-hibernation sites in the northeastern U.S. The long-closed mine was the winter home for more than 25,000 little brown bats.

Then, in 1989, the area was pegged for development, with plans for luxury homes and golf courses. The landowner, plagued by vandalism, sealed all the mineshafts and covered the last tunnel entrance with a wall of concrete. The bats of Hibernia Mine were entombed.

Concerned residents notified BCI, which called New Jersey wildlife officials. After working with landowners, the mine was reopened in time for the bats to escape, and a bat-friendly gate was built by BCI, the American Cave Conservation Association, and the state.

Now the bats spend their winters safe from human intruders and are free to come and go as they please.

2000

Showcasing value of urban bat colonies, BCI receives the Austin Tourism Award for transforming public perception of Congress Avenue Bridge bat colony from feared health threat to tourist attraction valued at $8 million annually.

Bats in Buildings Program is launched to help solve problems shared by people and bats that live in buildings. Participating bat exclusion professionals, willing to help both people and bats, benefit by gaining BCI certification and referrals.

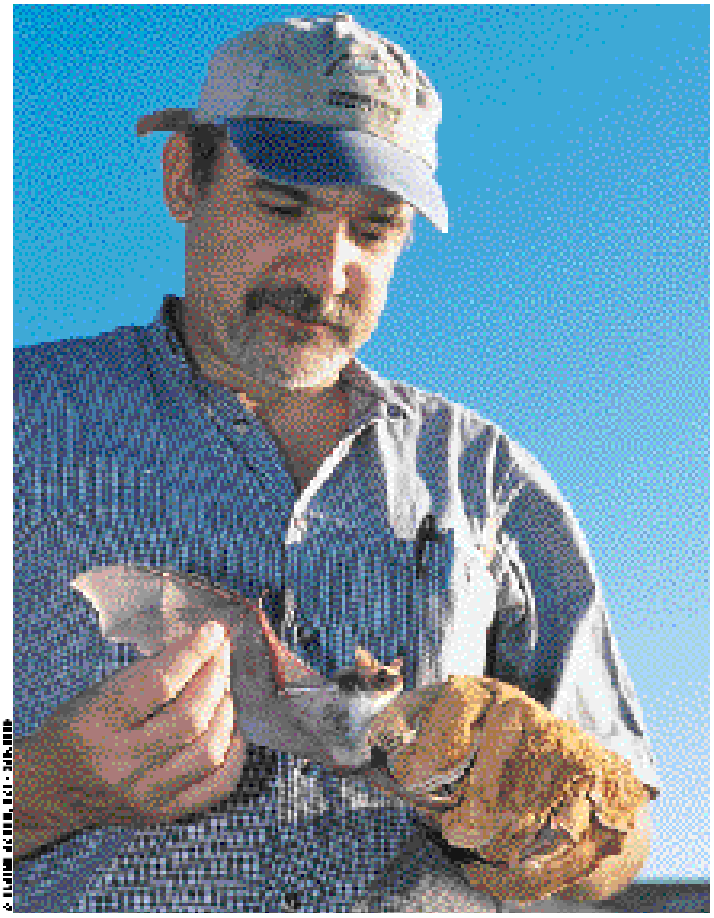
2001

Program for Conservation of Costa Rican Bats is founded as partnership with BCI and local institutions to protect Costa Rica's 109 bat species.

The Vampire —Video—

A Unique Program Spreads Bat Conservation Throughout Latin America

by Steve Walker



Rodrigo Medellín, shown examining a Mexican fishing bat at Partida Island, heads the U.S.-Mexico Program for the Conservation of Migratory Bats.

Bat Conservation International programs, partners, and allies now span the length and breadth of Latin America, home to the largest and most diverse collection of bat species in the world. The seeds for this critical expansion southward were sown in 1993 through a vampire control video.

Vampire bats are, indirectly, one of the biggest threats facing Central and South American bats. Vampires, found only in Latin America, often feed on the blood of livestock and occasionally transmit rabies to cattle. Latin American ranchers quite reasonably want to end these losses, and that has traditionally involved burning or dynamiting bat roosts in caves or hollow trees — killing thousands, even millions, of bats at a time. Tragically, however, such tactics usually had little or no impact on vampires while devastating whole colonies of beneficial bats that reduce insects and propagate tropical forests.

Then BCI began an education campaign for veterinarians and cattlemen. The centerpiece was a 30-minute videotape — *Control del Murciélago Vampiro y La Rabia Bovina*

Teaching youngsters about the benefits of bats is a key part of BCI's mission. Bilingual children's books, such as *Marcelo el Murciélago*, are developed in Mexico and used across Latin America.

Texas Legislature approves co-sponsored bill prohibiting hunting or selling bats or disturbing their natural roosts without a permit.

BCI helps finance bat-friendly gates to protect seven abandoned Arizona mines that are crucial to remaining Allen's big-eared bats, one of North America's rarest species.

BCI research demonstrates how vertically mounted concrete culverts can serve as artificial roosts for threatened bat species that require huge hollows in ancient trees that are now extremely scarce.

The endangered lesser long-nosed bat (*Leptonycteris curasoae*), a migratory species that pollinates and disperses seeds of cacti in Mexico and the U.S., is among species being helped by BCI and its partners in Mexico.

(*Control of Vampire Bats and Bovine Rabies*). BCI members Tom and Marilyn Fifield generously funded the fieldwork and assisted with the filming in Costa Rica, with additional support from the W. Alton Jones Foundation. Leading experts on vampire and rabies control, Rexford Lord of Venezuela and Victor Hugo Sancho of Costa Rica, appeared in the video and served as science advisors.

The video, available in Spanish, English, and Portuguese, explained how to control vampires without harming beneficial species, while also featuring the essential ecological and economic roles of other Latin American bats.

Lord, with BCI support, presented the popular video at symposia throughout Latin America. It also aired on national television in several countries. Now, a decade later, *Control del Murciélago Vampiro* is still presented at meetings of cattlemen's associations and used as a routine part of veterinary training throughout the vampires' range.

This single educational program has had a greater impact on bat conservation in Latin America than all previous efforts combined. It gave bat conservation enormous visibility and credibility.

Soon, biologists and veterinarians throughout Latin America were investigating how they could work with BCI to address additional conservation issues affecting bats. In 1994, BCI and the Institute of Ecology of Mexico's National Autonomous University established the enormously successful Programa para la Conservación de los Murciélagos Migratorios (Program for the Conservation of Migratory Bats), or PCMM.

Though it focused initially only on bats that migrate between the United States and Mexico, PCMM, under the direction of BCI Scientific Advisor Rodrigo Medellín, has now expanded its mission to include all 140 Mexican species. It has earned the support of federal, state, and local governments, as well as academia, industry, and environmental organizations in both countries.

PCMM's reputation and its Spanish-language educational materials have spread rapidly, becoming models for the rest of Latin America. By 1998, similar programs were established in Venezuela, under the direction of José Ochoa, and in Bolivia, with Luis Aguirre. Bat conservation initiatives are also under way in Brazil, Costa Rica, Chile, and Guatemala in collaboration with BCI and PCMM.

The past decade of cooperative engagement in Latin America has made remarkable progress on behalf of the region's more than 290 bat species. Yet thousands of bat roosts are still being destroyed every year and many more will be lost unless we expand the educational resources only BCI and its Latin American partners can provide.

STEVE WALKER is Executive Director of BCI.

2002

Program for the Conservation of Guatemalan Bats established in Guatemala by BCI and local institutions.

BCI plays important role in convincing state of Indiana to terminate winter visitation by humans at Wyandotte Cave, a key hibernation roost with enormous potential for recovery of endangered Indiana bats.

BCI, U.S. Fish and Wildlife Service, and U.S. Office of Surface Mining host major cave- and mine-protection symposium in Austin, with protection manual planned from Proceedings.

The North American Bat Conservation Partnership

A Broad Coalition Opens a New Era of Progress Across the Continent

© MIKE QUINN, COURTESY OF GRAND CANYON NATIONAL PARK \ 17970

BCI Executive Director Steve Walker (left) and Stan Sloan of the National Park Service drill an anchor hole for the Stanton Cave gate.

The idea was born in 1971. A symposium of the American Association for the Advancement of Science concluded that North American bats are essential, misunderstood, and disappearing rapidly. Participants urged prompt, coordinated conservation efforts.

Promising, if tentative, steps were taken, only to crash into an exaggerated rabies scare that needlessly terrified the public, benefited the pest- and rabies-control industries, and increased senseless destruction of bats. The need was clear, but so was the intensity of negative public opinion. The idea all but died.

Bat Conservation International appeared in 1982 and began changing perceptions of bats. By 1997, BCI, working with partners and allies, was ready to revive the desperately needed notion of a coordinated plan to conserve all 148 bat species in North America.

The result is the North American Bat Conservation Partnership, a unique coalition of universities, conservation groups, state and federal agencies, and private industry in Mexico, Canada, and the United States. NABCP's first five years produced an impressive list of accomplishments, with the promise of much more to come.

The core of the partnership is its Strategic Plan, adopted in 1999, to identify, on a continental basis, the most critical needs for bat research, conservation, and education. It provides a framework and direction for federal, state, and local bat conservation projects.

The partnership stresses the kinds of focused research and education that are crucial to successful management. One important program is the continent-wide documentation of all bat species, with maps and supporting data available electronically. Maps already are complete for the 45 species in the U.S. and Canada. Work on Mexico maps continues.

In addition to funding specific research, education, and conservation projects, NABCP relies on its partners to expand bat conservation into mainstream wildlife-management planning. Wildlife agencies in a number of states, encouraged by the partnership, are developing bat conservation plans of their own, with NABCP priorities refined to fit specific needs of their areas.

Four working groups, each comprising agencies, organizations, and individuals in a geographic area, are adapting the partnership's plans and priorities to meet regional needs. These are the Northeast Bat Working Group, the Southeastern Bat Diversity Network, the Western Bat Working Group, and the Mexico Bat Working Group.

Timber industry biologists initiated a dynamic new model of public-private partnerships with the Northwest Bat Cooperative of Oregon, Washington, Idaho, and Montana. Aligned with the Western Bat Working Group and BCI, it now includes industry, private landowners, state and federal agencies, academics, and others concerned with improving forest management for wildlife.

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To build a bat gate across the entrance to Stanton Cave in the Grand Canyon, volunteers rafted 8,000 pounds of steel and other material 31 miles (50 kilometers) down the Colorado River, then hauled it up a rugged cliff.

Experts from eight countries and 24 U.S. states gather in Austin for an unprecedented BCI-sponsored bat echolocation symposium, by far the largest of its kind ever held.

Tennessee Nature Conservancy and Southeastern Cave Conservancy partner with BCI to purchase and protect Wolf River Cave in central Tennessee, region's most important remaining hibernation roost for endangered Indiana bats.

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Founding Trustee Verne Read and his wife Marion (third and fourth from right) visit the new National Park of American Samoa. The park, a vital sanctuary for flying foxes, was largely the result of their tireless and generous commitment.

Loyal Friends Keep BCI Strong

by Merlin Tuttle

At critical moments in BCI's history, loyal members, friends, and trustees have stepped forward to enhance — sometimes even to save — our worldwide mission. Their vision, creativity, and enthusiasm helped us turn seemingly impossible challenges into lasting accomplishments. Without their dedication, countless millions of bats would have been lost, at great harm to healthy environments and human economies.

These key conservation partners come from all ages and walks of life. Nine-year-old Bert Grantges began sharing BCI slide shows with fellow students and eventually reached millions in an appearance on Johnny Carson's *Tonight Show*. Colin Kapelovitz, 12, convinced his state senator to end the poisoning of bats in North Dakota. Founding member Anne Fisher won coast-to-coast media attention with a Chicago "Bat Dinner" featuring foods from bat-dependent plants. Insurance agent David Shields convinced a client to provide BCI's first grant to document the essential roles of flying foxes in propagating economically important plants.

The handful of special friends profiled here is but a sampling of the thousands who have given so much and for whom we are so deeply grateful. Gifts of every kind, donations large and small, have combined to create a record of which we can all be fiercely proud.

No one surpasses the dedication and generosity of Founding Trustee Verne Read and his wife, Marion. They listened before anyone else heard. BCI's first donation came from Verne and Marion, and they have helped underwrite basic operations for 20 years. Nearly every one of BCI's most successful initiatives is linked to their inspiration and generosity, from America's first national park in a tropical rain forest (in American Samoa) to such programs as student scholarships and saving bats in mines. The Read family's leadership in bat conservation continues through their son, Tom.

Early members Bill and Carole Haber provided the critical influence that led in 1990 to filming *The Secret World of Bats*, the first television program of its kind, which aired on CBS in the U.S. and in some 70 other countries. The Habers also, with special help from Perry, Lee, and Ed Bass, enabled BCI to purchase its own 10,000-square-foot headquarters building in Austin, Texas.

The Bass family played a pivotal role in other vital initiatives. They provided founding support for the North American Bat Conservation Partnership, which led to the first coordinated plan for bat conservation in Canada, Mexico, and the U.S. The Basses also supported our launch of Bat Conservation and Management Workshops, which have trained more than 1,000 wildlife managers, conservationists, and educators.

Trustee John Mitchell and his family's Beneficia Foundation provided critical support for many programs, including expanding our Latin American Initiative and land purchases at Bracken Cave.

Tim Worth, as U.S. Undersecretary of State for Global Affairs, opened new doors for conserving migratory bats that overwinter in Mexico. His wife, Wren Worth, has generously supported continuing efforts in Mexico, which have become a model for all of Latin America.

U.S. Assistant Secretary of the Interior Bob Armstrong helped organize a three-day bat conservation field workshop for directors and deputy directors of federal agencies who manage wildlife, opening many new doors for BCI partnerships.

When BCI first moved to Texas, Peggy and Jack Phillips and Patsy and Marshall Steves hosted events to introduce influential friends. These relationships are still paying dividends some 15 years later, especially in saving the world's largest bat colony at Bracken Cave, which also benefited greatly from the tireless efforts of Board Chairpersons Mike Cook and Beth Robertson.

To these friends and to all of you who have given so generously of your time, enthusiasm, and financial support, we at BCI express our deepest appreciation!

Australia's grey-headed flying fox (*Pteropus poliocephalus*), an often-persecuted but key forest pollinator, has benefited greatly from BCI's positive approaches to government leaders.

The Challenges Ahead

by Merlin Tuttle

WE HAVE COME SUCH A LONG WAY IN 20 YEARS THAT IT IS EASY TO FORGET HOW FAR WE HAVE YET TO GO.

When BCI began, few people knew much of anything about bats and most of what they believed was wrong. Bats were feared, despised, and killed as casually as rattlesnakes or roaches. But education worked, as did our focus on converting potential enemies into allies through cooperative approaches. Now most educated people realize that bats contribute to their well being and, as a result, countless millions of bats have been saved worldwide.

Yet ignorance remains a major threat to bats — and to the ecosystems and economies that depend on them. Myths and misunderstandings persist in many places. Even in the United States, as recently as summer 2002, a national newsmagazine included bats in a list of hazardous wildlife. We must remain vigilant.

Equally important, key knowledge of bats' importance and needs is often nonexistent. Most of the world's bats are largely unstudied and so little understood that some species have disappeared before anyone realized they were endangered.

We must learn much more about bats, and we must share what we learn. That is a driving force behind the most ambitious project in BCI history. We have already acquired Bracken Cave, home of the world's largest bat colony. But we must do much more. We must study and address these wide-ranging bats' needs and educate the public to help protect them. We are planning an unprecedented education and research center to share this natural wonder and carry BCI's message into future generations. The challenges of acquiring the additional land that's needed to protect this amazing resource, of researching the colony's needs, and of building a cutting-edge facility in the Central Texas Hill Country are immense. So are the rewards.

The gray bat, one of America's most endangered species 20 years ago, is beginning to prosper, and our latest research discoveries may hold the key to rescuing the critically endangered Indiana bat. Crucial populations of the endangered Virginia big-eared bat are now protected and stable, while newly protected populations of threatened western big-eared bats are growing. But other species still require innovative action. America's Rafinesque's big-eared bats, for example, traditionally roosted in extra large tree hollows that are now rare. Developing the kinds of alternative roosts that we are now testing is essential if surviving colonies are to be saved.

We have worked internationally from our very beginnings, and we remain committed to helping bats worldwide. Taking effective bat conservation onto a global stage, however, is a staggering task. Our international targets are carefully chosen as they become economically, logistically, and politically feasible. BCI's Student Scholarship Program is critical to conservation on an international scale and has seeded many countries with biologists who are, or will become, the vanguard of bat conservation. International efforts are further enhanced through our Global Grassroots Conservation Fund, which supports dynamic community and volunteer initiatives worldwide; these rather small grants promise incredible payoffs in years to come, though the needs far surpass BCI's current resources.

Together, we have made unprecedented progress despite seemingly impossible odds. With so many people finally beginning to understand bats, with sound research contributing new knowledge, and with the impact of a world center for bat education at Bracken Cave, our accomplishments in the decade ahead may again surpass our dreams. With such a remarkable beginning, we have every reason for optimism — not just for bats, but for future generations of humans, as well.

The Future is Built One Piece at a Time

We all dream of leaving the world a better place, of having an impact that survives into the future. A planned gift can let you realize that dream by continuing your partnership with Bat Conservation International so future generations will enjoy bats and their many benefits. Here are a few who are leaving a lasting legacy:

Education

Thomas W. Ammerman Jr.

A lifelong scholar of ecology, natural history, and horticulture, Mr. Ammerman was a BCI member for 15 years. A chemical engineer by trade, he was so dedicated to bats and education, that he developed his own series of bat lectures and delighted audiences with his enthusiasm. His bequest to BCI, announced shortly before his death at 78, will keep his devotion to educating the public about bats alive for years to come.

Conservation

Anton Schindler
In Loving Memory of
Valerie H. Schindler

Mr. Schindler enjoys reading, gardening, and watching the animals that visit his yard. But one of his greatest pleasures is the memory of his wife, Valerie. She was, he fondly recalls, a very special person with a special love for bats. Mr. Schindler is honoring her memory and helping to pass on her love of bats to new generations through a bequest in his will to Bat Conservation International. The funds he leaves BCI will contribute directly to the conservation of bats and their habitats.

Scholarship

Laura Mazanti

Laura dedicated her life to learning about animals and how to help them. She earned her Ph.D. in biology just seven months before she died at age 37. Laura was particularly drawn to the persecuted creatures she called 'the underdogs,' animals such as bats. After receiving a scholarship to attend a BCI workshop, Laura became a special advocate for bats in both her personal and professional life. Through her bequest to BCI, she will continue helping other young people learn about the benefits and beauty of these gentle creatures.

Research

Marc & Kate Weinberger

A newspaper article introduced Marc and Kate to BCI nearly 20 years ago. They joined, attended a workshop, participated in BCI ecotours, and were impressed with the extent to which every dollar invested was multiplied through positive partnership approaches that achieved lasting results. By including a bequest to BCI in their will, Marc (an attorney) and Kate are ensuring that their commitment to bat research and conservation will continue far into the future.

For information on how you can become a part of BCI's planned giving community — The Legacy Circle — contact your financial advisor or BCI Director of Development Denise Meikel at (512) 327-9721 or email dmeikel@batcon.org.

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