Bidding for Bats at Wolf River Cave
Conserving Costa Rica’s Bats
The story behind the Bat Stamps

WWW.BATCON.ORG WINTER 2002

BATS
BAT CONSERVATION INTERNATIONAL

Helping Orphans Survive

Baby bats learn to soar without a mother’s help
FEATURES

1 Helping Orphans Survive
   Baby Bats Can Learn to Fly, Hunt, and Hide on Their Own
   By Barbara French and John O. Whitaker, Jr.

4 Conserving Costa Rica’s Bats
   A New Program Takes 110 Bat Species Under its Wing
   By Richard K. Laval and Bernal Rodriguez-Herrera

7 Nocturnal Navigators
   An Educational Exhibit Reaches Thousands
   By Bernal Rodriguez-Herrera

8 Bidding For Bats
   A Tense Auction Bats Protection for a Critical Tennessee Cave
   By Jim Kennedy

10 Bats Go Postal
   A BCI Member Wins a Place for Bats on U.S. Stamps
   By Robert Locke

DEPARTMENTS

13 News and Notes
   Bats’ Sonar ‘Vision’ May Help the Blind

16 A Primer on Planned Giving
   By Michael L. Cook

COVER PHOTO
The eastern red bat (Lasiurus borealis) which roosts in the foliage of trees, is found east of the Rocky Mountains from Canada to as far south as central Florida.
Photo © Merlin D. Tuttle, BCI, 808-5504
Baby Bats Can Learn to Fly, Hunt, and Hide on Their Own

by Barbara French and John O. Whitaker, Jr.

The first flights were tentative at best — brief, wobbly affairs that hardly veered from a straight path. Twists and turns apparently were more than the baby bats, untutored by mothers, could handle; so was maintaining a consistent altitude. And they landed, very un-batlike, heads up on the sides of their cage. Within days, however, the eight orphaned bats were racing confidently around the perimeter of their enclosure and landing, after little flying somersaults, upside down on the cage ceiling — just as red bats should.

In fact, these bats, orphaned soon after birth, single-handedly acquired the secrets of their kind (Lasiurus borealis). Without the help of their mothers, they learned to fly and land, to fire up their sonar and hunt the insects that wild red bats prefer, and to avoid at least one predator of bats. Much of what it takes to be a successful red bat — or at least the biological foundation on which the bats’ behavior develops — apparently is hard-wired into the genes of the species.

On the other hand, without a mother’s support, the eight red bats in this study almost certainly would not have survived long enough in nature to learn what they needed to know.

Can baby bats learn to catch insects when raised in captivity without parents? The question is of considerable interest to wildlife rehabilitators, who often raise orphaned bats. Can such bats be released into the wild with a reasonable chance of survival? Or must human rehabilitators work in loco parentis and try to fill the mother’s role as teacher?

Little is known about young, insectivorous bats as they make the transition from a diet of mother’s milk to flying insects. Some researchers suggest that young bats need time, during which they are still nured by their mothers, to develop the skills needed for successful flight and foraging. Other research indicates they may learn those skills by spending time hunting insects with their mothers. Red bat
pups in captivity typically begin flying at about 21 days of age, but, at least in the wild, mother's milk is available to bat pups for about 38 days — and most pups are probably learning to fly and feed on insects before then.

In Central Texas, Barbara French, a wildlife rehabilitation and Conservation Officer for Bat Conservation International, often receives orphaned or injured red bats, members of a solitary, tree-roosting species that ranges from Central America to Canada. Pregnant females typically give birth to two to four pups. The pups weigh 1.75 grams (about six-hundredths of an ounce) each and do not open their eyes until they are 10 to 11 days old.

To determine whether baby red bats can, on their own and in captivity, become successful insectivores, French built an outdoor flight cage about 56 by 21 feet (17 by 6.4 meters) and 12 feet (3.6 meters) high and cove red it with netting. Foliage and a variety of roosts were hung from the ceiling. Eight red bat orphans — seven males and one female — were hand-raised from infancy and placed inside the cage when they were old enough to eat insects, at an estimated three to six weeks of age.

When first delivered to the rehabilitator, the pups were fed fortified milk and baby food (veal and bananas), supplemented with a vitamin paste, four times a day. Viscera from mealworm larvae and eventually whole mealworms were added to their diet as soon as the young bats would accept them. After they went into the flight cage, hand feedings were reduced to two a day (at about 7:30 a.m. and 7:30 p.m.).

The young bats began flying almost immediately after being released in the cage. Within days, they were circling around the enclosure, and, soon after, they were racing around the poles that run down the center of the cage.

It was at this point that the young bats seemed to notice the insects swarming around the incandescent and black lights hung from the ceiling. At first, the bats repeatedly flew into and straight out of the swarms. Within a week or two, however, most began darting about and turning sharply within the swarms, as though pursuing insects.

The bats initially were found with sunken abdomens at their morning hand-feedings — a sign that they weren't having much luck catching insects. Within a few weeks, however, bulging bellies were common in the mornings, and insect remnants were found in their feces. One orphan sported a distended abdomen.
just six days after he began flying, while three late bloomers showed no indication of self-feeding for 42 to 43 days.

Twice a week, we used a bat detector to monitor echolocation calls during evening flights. Clearly defined feeding buzzes, the rapid-fire calls that signal a bat’s final attack on an insect, were detected after two weeks in the flight cage, although at least one bat was clearly capturing insects several days earlier. The first evidence of flying insects in feces was found after 28 days. All the bats were feeding on insects by the time they reached adult weights of 10 to 12 grams (0.35 to 0.42 ounces).

Since all eight bats had learned on their own to catch and eat flying insects, the questions became: What are they eating? Do the bats feed on whatever insects are most common, or are they selective in their menus? To find the answers, we used a funnel trap to collect insects from inside the cage and collected bat droppings from plastic tarps beneath the bats’ roosting areas. Comparing insect species from the trap and the droppings showed that the bats were indeed selective in their choice of prey and generally chose those insects favored by wild red bats.

The orphans fed mainly on moths, a common food of red bats in the wild. They also occasionally went on midges — a type of swarming fly that may be rather easy prey for young bats still learning to feed. They largely ignored most other insect species identified from the traps.

One evening, French watched in surprise as all of the young bats suddenly flew into roosts at the same time. A moment later, the shadow of a great horned owl passed overhead. The bats not only sensed the presence of this potent predator, but responded appropriately by hiding in foliage. This behavior almost certainly is innate, since no experienced bats were available to teach it.

Evidence suggests red bat pups in the wild continue nursing while learning to fly and capture insects. But red bat mothers lactate for only about 38 days after giving birth, so the young apparently must feed on their own after that. Our orphan bats, however, needed an estimated 50 to 82 days after birth to learn to forage for insects. The much longer time before self-feeding was most likely due to the absence of their mothers.

Although it appears that insect-hunting with echolocation is innate, a mother’s presence probably speeds up acquisition of these essential skills. A baby bat would be unlikely to survive this learning period in the wild without its mother’s assistance. Our experience suggests, however, that providing protection and supplemental feedings in captivity may give young bats enough time to hone the skills needed for survival.

BARBARA FRENCH is Science Officer for Bat Conservation International and bat rehabilitator for Wildlife Rescue in Austin, Texas.

JOHN O. WHITAKER, JR., is Professor of Life Sciences at Indiana State University, Terre Haute.
Conserving Costa Rica’s Bats

A New Program Takes 110 Bat Species Under its Wing

by Richard K. LaVal and Bernal Rodríguez-Herrera

The tropical forest rang with the laughter of delighted youngsters. Four schoolchildren, their faces scrunched in concentration, maneuvered gingerly across the clearing, each with a marble riding precariously in a spoon held by clenched teeth. They were the bats and the marbles were pollen. When they reached the baskets masquerading as flowers, they dumped the marbles, “pollinated” the plants, and kept the forest healthy and growing. Then another crew of “bats” took off, amid the cheers of classmates. And, at least for these kids, Costa Rica’s bats were starting to become familiar friends.

Costa Rican youngsters learn how much bats contribute to the environment through a game that simulates bats’ pollination of plants.

The “pollination race” at La Tirimbina Biological Reserve last spring was part of the initial educational efforts of a vigorous new program in Costa Rica — Programa para la Conservación de los Murciélagos de Costa Rica (the Program for the Conservation of Costa Rican Bats) —PCMCR.

Costa Rica, with at least 110 different bat species living within its 20,000 square miles (52,000 square kilometers), probably has a greater variety of bats for its size than any other nation in the world. These bats include what may well be the cutest bat: the tiny Honduran white bat (Ectophylla alba); the largest New World bat — the carnivorous false vampire bat (Vampyrus spectrum); and the peculiar sucker-footed bats (of the genus Thyroptera). One species, the fruit-eating Talamancan yellow-shouldered bat (Sturnira mordax), is found only in the mountains of Costa Rica and small areas of adjacent Panama and Colombia.

But, as is true in much of the world, Costa Rican bat habitats are disappearing in the face of spreading agricultural and urban development, and harmless bats that are essential to forest regeneration are indiscriminately killed in misinformed efforts to control vampire bats.

In response, bat biologist Bernal Rodríguez-Herrera of the National Museum of Costa Rica and longtime BCI member Richard K. LaVal launched the Programa para la Conservación de los Murciélagos de Costa Rica in May 2001, with the support of Bat Conservation International and Mexico-US. Programa para la Conservación de Murciélagos Migratorios (Program for the Conservation of Migratory Bats). Results of our initial public-education efforts are encouraging, and future plans are ambitious.

The need for PCMCR is clear. Costa Rica has not been immune to the wholesale deforestation that is denuding tropical forest regions worldwide. A century ago, 80 percent of Costa Rica...
was covered by primary forest. Today, that has been reduced to just 20 percent. Fortunately, about a fourth of the country, most of it forested, is now protected by a national system of conservation areas — and these protected areas are gradually increasing.

Costa Ricans in general are poorly informed about bats. As throughout much of Central and South America, the most critical danger for beneficial bats is the widespread misconception that all bats are vampires. And vampire bats are, indeed, a problem in Costa Rica. At least two outbreaks of paralytic bovine rabies occur each year as a result of vampires, with a loss of at least 30 animals annually and a cost to the cattle industry of more than $600,000 during the last 15 years.

The Costa Rican government maintains a very successful vampire-elimination program that moves into affected areas whenever a rabies outbreak is reported. Yet people often take the situation into their own hands, with or without an outbreak, and kill bats randomly in caves and other roost sites. Bananas and other fruits are sometimes laced with poison to kill fruit-eating bats. Harmless, beneficial species are the victims of these attacks. In a country where forest regeneration and polli
tation are heavily dependent on bats, effective conservation and education measures are critical.

Meanwhile, even though Costa Rica has the most carefully studied bat fauna of any Central American country and a few species have been studied extensively, we know relatively little of the basic biology of most bat species. Specific conservation plans simply cannot be developed at this time for most species, some of which may be endangered. The smoky bat (*Furipterus borrensis*), for example, is known from a single Costa Rican colony that has not been seen since 1973, despite concerted efforts to find it.

In March 2000, Rodríguez took a critical step in building public enthusiasm for bat conservation. With the support of BCI, he designed an interactive bat exhibit featuring live bats in a “bat cave” at the National Museum (see “Nocturnal Navigators,” Page 8). The exhibit proved so popular that museum visitation jumped threefold, with huge increases among schoolchildren.

Encouraged by that success, Rodríguez, with the assistance of LaVal, began developing a conservation program for Costa Rican bats. From the very beginning, help and advice were provided by BCI and Mexico’s *Programa para la Conservación de Murciélagos Migratorios* (PCMM).

The idea became reality with an organizational workshop at the National Museum in May 2001, when Laura Navarro and Joaquin Arroyo-Cabrales of PCMM described their program’s eight years of very successful work in Mexico. And to get *Programa para la Conservación de los Murciélagos de Costa Rica* off to a strong start, PCMM, in conjunction with BCI, provided a supply of teaching materials. These include the wonderful series of bilingual children’s books (such as *Marcelo the Bat*) by Laura Navarro, PCMM’s environmental education coordinator. The goal of PCMCR is to adapt the education and conservation techniques developed in Mexico for use in Costa Rica.

The program is focusing initially on elementary schoolchildren, primarily in the tropical dry-forest region — the most threatened ecosystem in Central America. We decided to concentrate on areas near national parks and other institutions where the infrastructure
Costa Rica is home to an incredible diversity of bat species, from the delightful Honduran tent-making bats (above) to the carnivorous false vampire bat, shown at right with a captured bird.

for environmental-education programs already exists. These included 15 schools near six national parks in the northwestern Pacific dry-forest region, one school hosted by the Simón Bolívar National Zoological Gardens in the capital of San Jose, and a school in the Caribbean lowlands hosted by the private La Tirimbina Biological Reserve. We have so far reached about 550 students with this educational program.

Rodrigo Medellín, the coordinator of PCMM, along with several members of his staff and BCI Executive Director Steve Walker, visited Costa Rica in April 2002 to review the new program with Rodríguez, LaVal, and PCMCR Field Coordinator Marcela Fernandes. During that visit, a bat workshop was presented to 30 local schoolchildren at La Tirimbina, with participation of both Mexican and Costa Rican staff.

At the end of the visit, BCI and the PCMM announced that they would provide significant support to continue and expand the program in Costa Rica.

As PCMCR moves into the future, research is being blended into its education and conservation efforts. We continue to collect data on the distribution, abundance, and biology of Costa Rican bat species. Much of this information is included in our new bilingual book Murciélagos de Costa Rica/Bats. LaVal has detailed the threats to Costa Rican bats in a chapter of a book entitled Biodiversity Conservation in Costa Rica, Learning the Lessons in the Seasonal Dry Forest, edited by Frankie, Mata, and Vinson and due for publication by the University of California Press. We are making extensive use of bat detectors to identify and study insectivorous bats all over the country and augmenting our data with conventional mist nets and bat traps.

La Programa para la Conservación de los Murciélagos de Costa Rica faces many challenges, but with the commitment of our staff and dedicated volunteers in Costa Rica and the continued support of BCI and our colleagues in Mexico, we will have a major impact on bat conservation.

BERNAL RODRÍGUEZ-HERRERA, a bat biologist and mammalogist at the National Museum of Costa Rica, is Co-director of Programa para la Conservación de los Murciélagos de Costa Rica.

RICHARD K. LAVAL, longtime BCI member and bat conservationist, is Co-director of PCMCR.
Nocturnal Navigators

by Bernal Rodríguez-Herrera

With Costa Rica’s bats battered by habitat loss, disappearing roost sites, and widespread persecution, the National Museum of Costa Rica decided to take action. The result was Navegantes Nocturnas (Nocturnal Navigators), an innovative and extremely popular educational exhibit on bats and their conservation.

Constructed in the San Jose museum’s outdoor garden and aimed primarily at students, the exhibit ran from April to June 2000 and drew more than 35,000 people — three times the usual visitation rate.

Visitors encountered model bats, crafted by museum personnel, in every nook and cranny of the garden: a nectar bat visiting a flower, a fishing bat with a fish in its claws, a giant false vampire bat, a large fruit bat carrying a fig, and a harem of white-lined bats. Each bat was accurately reproduced at its natural size and was engaged in its normal activities.

The most popular attraction was an artificial cave that covered about 160 square feet (15 square meters) and held 18 live fruit bats of five species. The bats had been acclimated to a reversed day/night cycle, so they were active for daytime visitors.

A kiosk displayed posters based on the benefits of bats, control of vampire bats, the anatomy of bats, and the image of bats in indigenous cultures. A BCI video of Latin American bats played continuously.

Each child who visited received a bat mask and poster. Guides for school groups were specially trained in bat biology and conservation for this exhibit. Enthusiasm was obviously high among the kids, especially on seeing the live bats. The exhibition was widely publicized in the nation’s major newspapers, three television channels, and various radio stations.

Navegantes Nocturnos was created primarily by myself and museum exhibit expert Lidilia Arias, although many others helped with the design, production, and publicity. Bat Conservation International loaned photos by BCI Founder Merlin Tuttle, as well as brochures and other information on bats. The National Museum of Costa Rica financed the exhibit as part of its commitment to educate the public by making science accessible to everyone.

When the exhibition ended, the bats from the artificial cave were taken to their original capture site and released. The exhibit has since been taken into rural areas of Costa Rica, where deforestation and the destruction of roost sites are severe and access to information is sparse.

Translated by Richard LaVal

Join a Costa Rican Adventure

Explore Costa Rica’s dazzling diversity of bats and other wildlife next March on an unforgettable BCI ecotour/workshop led by Fiona Reid, author of A Field Guide to the Mammals of Central America and Southeast Mexico.

The 10-day itinerary includes the Pacific lowlands, the cloud forests, the Caribbean rain forests, and a cruise to Palo Verde National Park. BCI also offers an optional five-day extension on the remote Osa Peninsula. (You may sign up for this five-day excursion only.)

The ecotour leaves San José March 16. Cost of $2,400 includes meals, lodging, transportation from San José, and a $250 tax-deductible contribution to BCI’s Global Grassroots Conservation Fund. The extension begins March 25 and costs $1,850, including a $250 contribution. Both trips are $3,850.

Reserve your place now! Contact Andy Moore at BCI, PO Box 162603, Austin TX 78716; email amoore@batcon.org, or register online: www.batcon.org.
Bidding for Bats

A Tense Auction Buys Protection for a Critical Tennessee Cave

by Jim Kennedy

Time had all but run out for the bats of Wolf River Cave when the alarm sounded at BCI last July. The cave was going on the auction block in less than two weeks and the key bidder was planning to commercialize the cave, harvest the surrounding timber, and develop the area. Tennessee’s second-largest hibernation colony of endangered Indiana myotis (Myotis sodalis) would likely perish.

But in a remarkable cooperative coup, three conservation groups — Bat Conservation International, The Nature Conservancy of Tennessee, and the Southeastern Cave Conservancy — managed in a few days to come up with $74,000 to enter the auction. It took every dime, but the cave and 33 acres of surrounding countryside near Jamestown, Tennessee, are now safe.

Wolf River Cave, filled with dramatic rock formations, is more than eight miles long. A “wet cave,” it acts as a conduit that carries a stream of water runoff from a
Dramatic rock formations were carved throughout Wolf River Cave by runoff from the surface that feeds an underground stream and replenishes an important freshwater aquifer.

huge surface area into an underground aquifer. Cutting the timber over the cave could drastically alter its environment.

Indiana myotis are notoriously picky about their hibernation sites. BCI research shows that these bats need hibernation caves and mines that meet precise temperature requirements and that are structured in such a way that the roost stays cold enough for the bats to hibernate in the fall without freezing in the winter. Relatively few caves or mines meet these criteria, and human incursions often alter conditions and leave the roosts unusable.

Wolf River Cave is the winter hibernation home for some 2,500 Indiana myotis, as well as smaller numbers of endangered gray myotis (Myotis grisescens) and Rafinesque’s big-eared bats (Corynorhinus rafinesquii). The cave also includes important archaeological and paleontological features, including ancient human footprints and the bones of long-extinct jaguars.

But the cave’s entrance is conspicuously large and visible from a nearby road. The need for protection became especially clear two years ago, when cavers found the remains of about 40 bats that obviously had been intentionally knocked off the walls and killed. BCI helped finance installation of a bat-friendly gate on the cave later that summer.

The problem seemed solved until the heirs who owned the 474-acre farm that includes the cave decided to put the property up for auction. The farm was divided into 28 parcels for the sale.

That’s when Roy Powers, the world’s premier cave gater, BCI workshop instructor, and engineering professor at Mountain Empire Community College in Virginia, entered the picture. Powers called BCI with an urgent warning. Wolf River Cave was being auctioned off July 20 and commercialization was likely unless conservationists intervened.

We immediately called The Nature Conservancy’s Tennessee Chapter, which had been working for five years to protect the cave. Director of Protection Gabrielle Call said TNC was aware of the sale and the risk to the cave but could offer only about $31,000 — not nearly enough.

Next we contacted the Southeastern Cave Conservancy, Inc., where Acquisitions Chairman Mark Wolinsky said the group, after an emergency board meeting, was ready to add $33,000 to the fund. BCI pledged $10,000 in case the bidding went higher still. The BCI pledge was covered by longtime members Chuck Pease and Cynthia Vann.

The complex financial arrangements, along with agreements on purchasing and managing the critical cave, were completed within three days and the partnership signed up for the auction, which began on an ominous note — the first bid was $50,000 and climbed quickly.

The would-be developer eventually pushed the bidding to $73,000, which the partnership topped with a bid of $74,000 — all the money we had to spend. It was enough and Wolf River Cave was saved.

The check was delivered and the sale completed on August 16. SCCI and TNC will jointly manage the cave, with BCI available for advice on bat conservation and research at the site. The cave will be fully protected when the bats are present, from September 1 to May 1, and available to cavers, with some restrictions, the rest of the year.

JIM KENNEDY is BCI’s Cave Resources Specialist.

Rafinesque’s big-eared bats like this one share Wolf River Cave with an important hibernating colony of endangered Indiana myotis.
Bats Go Postal

A BCI Member Wins a Place for Bats on U.S. Stamps

by Robert Locke

Americans have been sticking postage stamps on envelopes for 155 years — yet not one official U.S. stamp had ever borne the image of a bat. As a likely measure of bats’ historic image problems, consider that the last time they were proposed for a commemorative stamp, bats reportedly lost out to a snake. Then rancher Carol Adams met history professor Virginia Noelke at a West Texas dinner party.

Adams and her husband Baxter are longtime members of Bat Conservation International and unabashed bat enthusiasts. Their Love Creek Ranch at Medina (northwest of San Antonio, Texas) sports a number of successful bat houses that often draw friends and neighbors for bat parties. We have, Adams says, “been big in bats for years.”

Noelke, it turns out, is not only a professor at Angelo State University in San Angelo, Texas, she is also chair, for almost 30 years, of the U.S. Postal Service’s Citizens’ Stamp Advisory Committee. At a party given by mutual friends in San Angelo, Adams says she discovered Noelke’s role on the stamp committee, and, “I guess because I’m a bat lover, I asked her, ‘Why haven’t you ever done bats? They’re wonderful, they have precious faces, and they need the help.’”

That was about two years ago. On September 13, 2002, four stamps featuring bat photos by BCI Founder and award-winning nature photographer Merlin Tuttle were dedicated with considerable fanfare. Noelke confirms that
tions were live bats, a bat-house-building workshop for kids (sponsored by BCI, the National Wildlife Federation, and Home Depot), stamp collectibles including first-day covers signed by Merlin Tuttle, and, of course, the spectacular evening emergence of some 1.5 million Mexican free-tailed bats (*Tadarida brasiliensis*).

Tapping this unique opportunity to teach new audiences about the true nature of bats and their critical role in the balance of nature, BCI joined the National Wildlife Federation in producing bat-education pamphlets that were distributed with U.S. Postal Service assistance to some 300,000 educators and others. Those flyers dispelled dangerous bat myths for many people and produced several hundred new BCI members.

While bat stamps aren’t likely to eclipse the 1993 Elvis Presley commemorative that became the Postal Service’s all-time bestseller with more than 124 million stamps, they are proving popular. And their release during National Stamp Collecting Month — a decision Noelke attributes to their expected fascination for children — is likely boosting sales.

As Carol Adams notes, bats on stamps are “just wonderful PR,” but that opportunity is rare indeed. Out of tens of thousands of proposed stamp subjects, Noelke says her committee recommends only about 20 topics (including multi-stamp sets) each year to the Postmaster General.

The competition is fierce. An Internet search for Noelke’s name finds thousands of individuals, organizations, fan clubs, even whole states that are urging email and letter-writing campaigns to convince her to choose some favored

---

The first-ever U.S. bat stamps grew directly out of that conversation with Carol Adams.

Each of the first-class (37-cent) American Bat Stamps in the four-stamp set bears the close-up profile of a different species: the California leaf-nosed bat (*Macrotus californicus*), the eastern red bat (*Lasiusurus borealis*), the pallid bat (*Antrozous pallidus*), and the spotted bat (*Euderma maculatum*). With the new stamps, the United States joins at least 75 other countries that have celebrated bats on their postage stamps (*BATS*, Spring 1999).

The dedication drew some 1,500 people to Austin’s famous Congress Avenue Bridge, home of the world’s largest urban bat colony. Among attractions were live bats, a bat-house-building workshop for kids (sponsored by BCI, the National Wildlife Federation, and Home Depot), stamp collectibles including first-day covers signed by Merlin Tuttle, and, of course, the spectacular evening emergence of some 1.5 million Mexican free-tailed bats (*Tadarida brasiliensis*).

Tapping this unique opportunity to teach new audiences about the true nature of bats and their critical role in the balance of nature, BCI joined the National Wildlife Federation in producing bat-education pamphlets that were distributed with U.S. Postal Service assistance to some 300,000 educators and others. Those flyers dispelled dangerous bat myths for many people and produced several hundred new BCI members.

While bat stamps aren’t likely to eclipse the 1993 Elvis Presley commemorative that became the Postal Service’s all-time bestseller with more than 124 million stamps, they are proving popular. And their release during National Stamp Collecting Month — a decision Noelke attributes to their expected fascination for children — is likely boosting sales.

As Carol Adams notes, bats on stamps are “just wonderful PR,” but that opportunity is rare indeed. Out of tens of thousands of proposed stamp subjects, Noelke says her committee recommends only about 20 topics (including multi-stamp sets) each year to the Postmaster General.

The competition is fierce. An Internet search for Noelke’s name finds thousands of individuals, organizations, fan clubs, even whole states that are urging email and letter-writing campaigns to convince her to choose some favored

---

The new bat stamps offer an outstanding educational opportunity. Youngsters at the unveiling ceremony in Austin not only learned about bats and their essential role in nature, but also got a hands-on lesson in bat-house building.
subject or another for a U.S. postage stamp.

“We as a committee are the target of any number of campaigns for certain stamps,” Noelke says. “Sometimes a group even hires a PR firm to organize their campaign. If an idea piques our interest, it goes forward. Sometimes it does and sometimes not.”

Two years ago, when Noelke asked Adams why bats might belong on stamps, Carol had the right answer: “I showed her a poster from BCI ... Once she saw the pictures and heard the story about the Austin connection, she seemed interested.”

Noelke says she’s never been much of a fan of bats, but “I asked around and found a lot of people were interested in [bat stamps] as a general conservation topic. In Washington, I talked to our art director and he became very excited. It turns out they are very interesting and very photogenic. And on top of that, we thought kids would really enjoy it ... We take seriously the idea that we can educate people with these stamps.”

The Postal Service eventually contacted Tuttle about artwork for the stamps. He said the four bats were chosen for their attention-getting appearance and for their diverse geographic distribution. “We wanted the bats to represent every part of the United States,” he said.

The process from dinner party to postage stamp was long and uncertain, but, Tuttle says, the stamps’ educational value is immense. The wait was well worth it.

ROBERT LOCKE is Managing Editor of Bat Conservation International.
**Member Nights at Bracken**

Start Planning for Next Summer’s Exclusive Visits

Each summer, BCI members are offered the chance to experience an awesome natural spectacle seen by few people in the world: the unforgettable evening emergence of the world’s largest bat colony. Some 20 million Mexican free-tailed bats (*Tadarida brasiliensis*) swirl up from Bracken Cave and form enormous columns that head out over the Central Texas countryside for a night of foraging on more than 200 tons of flying insects. It is an incredible sight!

To protect this priceless natural resource, BCI Members-Only Nights are limited to 50 people per evening, so they fill up quickly. Start planning for 2003 now so you don’t miss out on what is likely to be the highlight of your summer.

The 2003 member nights at the San Antonio-area cave will be on the Saturdays of June 28, July 12, August 2, August 15, August 30, and September 6. July 26 is reserved for new members or first-time Bracken visitors only.

Registration begins May 1, 2003 (and will not be accepted earlier). Simply send BCI your name and member number, address, phone number and email address, the number of people attending, and your first and second choice for dates. Email that information to bracken@batcon.org; fax it to 512-327-9724, attention: Members Night Coordinator; or call BCI at 512-327-9721 during business hours (7:30 a.m.-4:30 p.m., Central Time Zone, Mon-Fri) and ask for the Members Night Coordinator.

After you register, we’ll send you confirmation of the date of your visit, along with a map and additional information. These tours are a special privilege for members and their immediate families only. Please be considerate of others and restrict your group size to about four people. No pets, please.

Mark your calendar now.
BCI’s Bat Conservation and Management Workshops offer an unparalleled opportunity for hands-on experience in conservation and research techniques. One of our most popular and effective programs, the field workshops have provided the foundation for hundreds of graduates to become key bat conservationists, both nationally and internationally.

BCI staff and local researchers share their knowledge of bat habitat management, field research techniques, bat houses, public health issues, nuisance abatement, bat capture and identification, acoustic monitoring, radio-tracking, and much more. Reserve your place now for one of our summer 2003 workshops. The cost covers all tuition, lodging, meals, fees, and transportation from the local departure city.

**Arizona**

Janet Tyburec, our most experienced workshop leader, hosts this program at the American Museum of Natural History’s Southwestern Research Station. Located in a beautiful riparian canyon in the Chiricahua Mountains, this is one of the most species-rich areas of North America. Working in the lowland desert one night and confinesus pine forests the next, we will compare and contrast the Western bats we find.

The emphasis is on species identification and habitat assessment, and we expect to capture and release as many as 17 species in a single evening, along with observations of endangered lesser long-nosed bats (*Leptonycteris curzao* - *abuenas*) and Mexican long-tongued bats (*Cbroenonycteris mexicana*).

Three 6-day, 5-night sessions, each limited to 12 people, depart from Tucson. Workshops begin May 17, May 22, and May 27, 2003. Cost: $1,195.

(A limited number of full and partial scholarships are available for federal and state biologists, land managers, and other professionals with special needs.)

**Pennsylvania**

This central Pennsylvania workshop emphasizes Eastern bats and their habitats, management, and conservation. Led by Janet Tyburec and wildlife biologist Cal Butchkoski, a noted bat-house designer, participants will net and release bats over streams, beaver ponds, mine entrances, and forest trails.

We will enter a gated mine to learn about the hibernation needs of endangered Indiana myotis (*Myotis sodalis*) and five other species. We’ll use night-vision equipment to watch the fall swarming behavior of thousands of bats. During an early morning field trip, more than 20,000 little brown myotis (*Myotis lucifugus*) will be seen filling the sky as they return to their roost in an old church that’s now a bat sanctuary. The workshop will also explore how bat houses and other artificial roosts are helping to protect bat populations.

One 6-day, 5-night session, limited to 20 people, departs from Harrisburg, PA. Workshop begins August 19, 2003. Cost: $1,195. (A limited number of scholarships are available.)

**Neotropical Bat Workshop**

Join Fiona Reid, artist, naturalist, and author of *A Field Guide to the Mammals of Central America and Southeast Mexico*, and BCI staff on a remarkable journey to Belize, home to an amazing array of neotropical bats. We expect to encounter frog-eating and fishing bats, fruit and nectar feeders, vampire bats, and a variety of insect-eating bats. We will investigate capture techniques especially suited to tropical situations, including raising extra-large nets into the forest sub-canopy and using a boat to erect and check mist nets set across waterways.

The 8-day, 7-night session, which is limited to 15 people, departs from Belize City, Belize, July 20, 2003. Cost: $1,995, including a $250 tax-deductible contribution to BCI’s Global Grassroots Conservation Fund.

For more information and online applications, visit BCI’s Web site, www.batcon.org/trips/toptrips.html, or contact: Andy Moore, BCI, PO Box 162603, Austin, TX 78716; Tel: (512) 327-9721; amoore@batcon.org.
Bats’ Sonar ‘Vision’ May Help the Blind

BATS FLYING AT TOP SPEED EASILY DODGE OBSTRUCTIONS AND CHASE DOWN MOVING INSECTS EVEN ON THE DARKEST OF NIGHTS. THE REMARKABLE SONAR SYSTEM THAT PERMITS SUCH NIGHTTIME AEROBATICS BY MANY BAT SPECIES PRODUCED THE MYTH THAT BATS ARE BLIND. THEY'RE NOT, OF COURSE, BUT THEIR AGILITY WHEN VISION IS USELESS INSPIRED A BRITISH INVENTION THAT MAY GIVE NEW MOBILITY TO HUMANS WHO CANNOT SEE.

A “Batcane,” developed by Sound Foresight Ltd. and Cambridge Consultants Ltd., directly mimics bats’ echolocation by emitting ultrasonic pulses of sound (beyond the reach of human hearing) and analyzing the echoes that bounce back from nearby objects. Obstacles trigger vibrations on one of four pads in the cane’s handle. The closer the object, the faster the vibration.

The unique cane is designed to allow the blind to build a sort of mind-map of their immediate surroundings, locating obstacles at both ground level and head height to their front and sides. Similar in appearance to the traditional white cane, the Batcane requires no programming and runs on conventional AA batteries.

Trials with prototype models are under way in the United Kingdom, United States, Canada, and Germany. A CCL spokesman said preliminary results are very encouraging, and the cane may be available in 2003.

The connection to bats is no coincidence. The spokesman said Sound Foresight’s Board of Directors includes Dr. Dean Waters, a Senior Lecturer in the University of Leeds’ School of Biology. Bat echolocation is among Waters’ major research topics, and he has published extensively in the scientific literature.

Adding Bats to a Pest-Control Program
by Scott Diemer


So how can a small town with almost no budget tackle pest control? In Cinco Bayou, in northwest Florida, resident Jim Bratton had an inspiration. He knew that a few bats already lived under the Cinco Bayou Bridge near his home, and he knew that bats eat an enormous amount of bothersome insects. So why not recruit more bats to help fight insect pests?

Jim pitched his plan to the Town Council in July 2001. Four months later, the initially skeptical council had warmed to the idea of placing a bat house under the bridge to increase the bat population, but the $5,000 cost was prohibitive for a town of about 500 people. Councilman and educator Dan Farley suggested partnering with Liza Jackson Preparatory School to defray costs.

The goal was a Bridge Lodge bat house from BCI friends Marvin and Linda Maben of Maben Centre Bat Homes. The super condo is a 183-pound (83-kilogram), 16-crevise structure with room for 5,000 bats. Designed specifically for bridges, Florida already has 37 installed.

Liza Jackson’s K-8 students adopted the plan as a combination community service/science project and began fund-raising — and studying bats. They quickly covered the $2,000 cost of the Bridge Lodge. Engineering fees ($1,000) we’re waived, and a local marina donated installation ($2,000).

The June 2002 dedication marked the culmination of a significant community effort at no taxpayer expense. Bats are already in residence, and the town is hoping to see a nursery colony next year. Bats are staying on the school’s curriculum and the students will report each year to the BCI’s Bat House Research Project.

SCOTT DIEMER is a BCI member in Fort Walton Beach, Florida.

Wish List
Help us “Server” you
BCI’s headquarters is struggling with an obsolete computer network. The aging network server is being overwhelmed by the volume of traffic and the huge multimedia files that have become a crucial part of our operation. The Norcross Foundation generously donated $5,000 to help us upgrade our system, but we still need at least $7,000 more for a new server. This is our single most important piece of computer equipment, and any donation toward this upgrade will greatly improve BCI’s efficiency.

Desktop Workstations
Three of our desktop computers are so outdated and inadequate that replacing them is the only option; they simply can’t handle current projects and software. Powerful new Hewlett-Packard workstations are now just $850 each and the return on donations will be immediate.

Mist Nets
The mist nets we use to safely capture bats in the wild have a rough time. Used year round for research and workshops, many of our nets simply wear out each year. We need 12 new nets: four 18-foot nets ($58 each), four 30-foot nets ($70 each), and four 42-foot nets ($94 each) for a total of $888.
A Primer on Planned Giving
by Michael L. Cook

This is a brief summary of a much more detailed description of planned giving strategies prepared by attorney Michael L. Cook. The complete manuscript is available at BCI’s Web site: www.batcon.org.

Dedicated members who remember Bat Conservation International in their wills are providing a lasting legacy of support for critical research, education, and conservation projects. And as the options for planned giving become more sophisticated, we increasingly receive inquiries about the best strategies for structuring an estate plan to benefit BCI while fulfilling other goals of the donor. BCI always advises potential donors to consult their own attorneys and financial advisers. This article is not intended as legal advice. It outlines the fundamentals of planned giving to help prepare you for discussing these issues with your estate planner.

Planned giving is simply a strategy for structuring gifts that are made during a person’s lifetime and afterwards to ensure that charitable goals are met and to minimize the tax burden facing recipients of this generosity. The principles and rules on which it is based are part of the Internal Revenue Code; this is not an attempt to sidestep taxes the federal government intended taxpayers to pay.

The Uncertain Estate Tax
The estate tax itself is under attack, of course. Current law phases out the estate tax, with progressively higher exemptions and lower rates until the year 2010. Then the tax disappears completely, only to return in 2011 just as it existed in 2000. Not to worry, though; no one expects that scenario to play out as designed. Exactly what will happen, however, is difficult to predict. The need for planning remains.

First, consider the various levels of estate planning. The first level, which is adequate for most married couples, usually involves nothing more than executing wills — or revocable living trust agreements — that maximize the estate tax exemption through a device variously called a by-pass trust, a family trust, or a credit-shelter trust. This level may also include an irrevocable life insurance trust to protect life insurance proceeds from taxes. In most instances, first-level estate planning does not include extensive charitable giving, other than perhaps a direct bequest to a charity.

A Sophisticated Strategy
The next level utilizes more sophisticated strategies. The most commonly used vehicle for minimizing federal and state transfer taxes while shifting wealth from one generation to another is the family limited partnership. Sophisticated estate planners are beginning to use family limited partnerships in combination with charitable trusts to achieve especially effective charitable giving.

The most commonly used instrument for this purpose is the charitable remainder trust (CRT). The CRT distributes a defined amount at least annually to non-charitable beneficiaries for a lifetime, a combination of lifetimes, or a fixed period of years. At the end of that time period, ownership of the trust (the “remainder interest”) is distributed to a charity or charities.

The opposite of a CRT is a charitable lead trust. It distributes a defined amount to a charity or charities for a specific number of years, then the remainder interest is distributed to one or more non-charitable beneficiaries, such as grandchildren.

This raises an important point about all gifts to charities: Make gifts of appreciated assets whenever possible. Appreciated assets have inherent, untaxed gains attributed to them, and a gift of the asset generally allows a contribution deduction equal to the fair market value of the contributed asset. The charity can sell the asset without paying tax on the inherent gain.

Insurance can also play a significant role in planned giving. Insurance can be used in two ways. In one, the person buys life insurance, usually established in the form of a trust, with the charity named as beneficiary. The opposite approach can produce a virtually tax-free estate. In essence, the donor leaves his entire estate to charity - either as a direct bequest or through a private foundation, trusts, or other endowments. The donor provides for the family’s needs by purchasing significant life insurance. The insurance proceeds are not taxable if the person has established an irrevocable life insurance trust, which, through contributions made by the donor, buys the life insurance. Since the irrevocable life insurance trust, rather than the donor, owns the policies, the value of the insurance is not included in the donor’s estate, and the taxable estate would be zero.

Endowed Gifts
Another popular strategy, especially for donors who have worked hard for years on behalf of a favorite charity,
Help Plan the Future of Bat Conservation

Planned gifts to BCI help ensure that awe-inspiring emergences like this can be experienced for generations to come.

Planning often makes the difference between failure and success. Bat Conservation International’s first twenty years testify to that truth. BCI’s well-planned strategy of cooperative action, relying on earning the trust of vital partners, has forged two decades of remarkable progress.

With your help, we can continue that success far into the future. Planned giving — through a myriad of techniques including a bequest in your will — doesn’t have to affect your lifestyle, but it will assure that you have a positive impact for years to come.

With your planned gift, you join BCI’s Legacy Circle. This is a group of concerned individuals who have invested a small amount of time now to maximize future benefits for bat conservation. As a Legacy Circle member, you will receive periodic conservation updates, helpful financial planning information, and invitations to participate in extraordinary nature tours.

For information on how you can become a part of this distinguished group, please contact BCI or your financial advisor. If you decide to include BCI in your estate plans, please let us know. We look forward to welcoming you as our newest Legacy Circle Member.

Remember, the future happens whether you plan for it or not. By including conservation in your plan, you’ll be making a unique contribution to healthy environments for generations yet to come.

For obligation-free information on how to use planned giving to support BCI, please contact Denise Meikel, Development Director, at dmeikel@batcon.org or (512) 327-9721, ext. 26.

the creation of an endowed fund in the name of the donor or the family. An endowed gift simply means that the principal remains intact, while the charity enjoys income from the fund in perpetuity. This is normally done through a trust or a nonprofit corporation, and the donor usually names friends or relatives as trustees, although institutional trustees are sometimes chosen.

Another approach to a permanent endowment is to create a private foundation that lets the donor’s surviving family decide how and when benefits are distributed. This approach is preferred only when a number of charities are named as beneficiaries and the donor has no clear preference for one charity over another.

Community Foundations

An increasingly popular device is known as the donor-advised fund, in which the gift is made to a large public charity, such as a community foundation. Income from the fund, and ultimately the principal, are distributed by the foundation according to recommendations made by the donor or someone designated by the donor.

Many tools are available to ensure that our charitable goals are met beyond our lifetimes, and most estate planners enjoy developing the most effective approach to charitable giving. Planning now can make a huge difference for the future.

MICHAEL L. COOK is a shareholder and director in the law firm of Jenkins & Gilchrist, P.C., at its Austin office. He is a member and former Chairman of the Board of BCI. The author thanks Michele Mobley, a partner in the firm of Graves, Dougherty, Hearon & Moody in Austin, for her comments and observations.
Helping Dedicated Young Bat Conservationists Around the World

Since 1990, BCI’s Student Scholarship Fund has helped 158 graduate students, with grants totaling more than $344,560, conduct important, often vital, bat-conservation research around the world. In 2002 alone, we helped 23 young scholars gain valuable knowledge and experience in 16 countries. This year’s recipients are working on such critical topics as:

- Testing artificial roosts for endangered Indiana myotis in the eastern United States.
- Determining causes of decline for endangered Mexican fishing bats.
- Developing land-management strategies to facilitate forest regeneration by fruit bats in Panama.
- Studying the ecological needs of endangered insectivorous bats in The Netherlands.
- Researching the pollination impact of long-tongued fruit bats on endangered mangrove ecosystems in Malaysia.
- Determining the roosting and habitat requirements of India’s rarest fruit bat.

We are pleased to help nurture new generations of conservation-minded scientists, many of whom already are contributing greatly to conservation. Lack of knowledge remains a serious obstacle to bat-conservation progress, and the greatest hindrance is a lack of financial support for young conservationists. Every year, we must reject worthy applicants because we simply do not have the funds to help them.

To learn how you or your company can support deserving young conservationists, contact:

Denise Meikle, Director of Development
Bat Conservation International
P.O. Box 162603
Austin TX 78716
(512) 327-9721
dmeikle@batcon.org

Oracle Scholar Steffen Watzke uses an antenna to receive signals from bats tagged with radio transmitters as part of his research in Malaysia.