

## VOLUME 21, NO. 3 Fall 2003

### Learning the Secrets of Bats Andy Moore

The moon is nearly full, but the darkness along the streambed, beneath the cottonwoods and cypress, is almost total. So is the silence. The only sound is the soft gurgle of the creek - an inches-deep hint of the river that carved this remote, rocky canyon in the distant past.

Then the detector comes to life with a string of noisy clicks. A thirsty bat is using the open flyway just over the stream, scanning for obstacles with constant echolocation calls. It swoops low over the little pool formed at a bend in the stream, dipping its chin to drink while skimming over the water. The bat detector goes suddenly silent. Two headlamps flick on, their beams bouncing over the pool.

The lights settle on a dark shape tucked into the barely visible fold of a mist net: "We got one!" Two people splash quietly into the water. Hands gently peel the net's gossamer strands from the entrapped pipistrelle, starting with the feet, then moving to the wings and head. The tiny bat sits warily in the net as the humans disentangle it. Freed from the net and nestled in a gloved hand, the bat sits calmly for a brief examination.

Although the western pipistrelle (*Pipistrellus hesperus*) is fairly easy to identify, the pair nonetheless pull out their "identification key." They measure its forelimbs and ears, weigh the bat, and determine its sex. Yep, it's a male *hesperus*.

The keys run several pages, for this is one of the most diverse bat habitats in North America - the Arizona site of one of Bat Conservation International's most popular and longest-running Bat Conservation and Management Workshops.

Sixteen species are often netted, studied, and safely released in a single night, and that can go as high as 18. Where else could wildlife professionals and amateur enthusiasts come face-to-face with so many different bats?


"My primary reason for taking the course was to get hands-on experience in trapping bats, field identification, and the use of keys," says a delighted Joe Lowe of the U.S. Bureau of Land Management in Idaho Falls, Idaho. "That couldn't have been done any better."

Each night, after the nets are struck, the 14 participants gather in the canyon with captured bats of various species. Workshop leader Janet Tyburec, an energetic bat expert, guides the group through the process of species identification, using everything from appearance and measurements to distinctive echolocation calls funneled through bat detectors.

The workshop, one of several that BCI conducts each year, is held at the American Museum of Natural History's renowned Southwest Research Station in the Chiricahua Mountains, about three hours east of Tucson.

The sheer diversity of the site - a biogeographical crossroads where desert and mountain biota meet - attracts researchers from around the world. Birders consider Cave Creek Canyon, where the pipistrelle met the mist net, one of the top birding locales. (Participant



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Janet Marchand said an early morning outing to see the elegant trogon was “a once-in-a-lifetime experience.”)

The Research Station, complete with lodging, is at 5,400 feet (1,645 meters). Moving a bit higher or lower in the Chiricahuas takes you through five distinct life zones. Animal and plant species derive from the Sonoran and Chihuahuan Deserts, while mountain species come from the Rockies and Mexico’s Sierra Madre Occidental.

Besides the remarkable collections of bats and birds, participants often spot such seldom-seen wildlife as wide-eyed coatimundis, ringtail cats, and sometimes even Mexican wolves and reclusive mountain lions. During one evening training session along South Fork Creek, U.S. Fish and Wildlife Service biologist Curt McCasland pointed out that the group was being watched with great interest by a ringtail. Bats were forgotten for a moment or two, as a half-dozen headlamps scanned the steep rock wall rising from the far side of the creek and finally focused on the curious, bushy-tailed cousin of the raccoon staring back at them.

BCI has been conducting workshops here for well over a decade, and Tyburec has been leading them since 1994. Participants split into groups of four or five, each including an expert from BCI or the Arizona Game and Fish Department, for the nightly netting activities. Tyburec’s demonstrations and lectures during the day lay the foundation for the hands-on experiences after the sun goes down.

A bat in a mist net looks at first like a hopeless tangle of animal and netting - until Tyburec demonstrates techniques that let anyone safely remove a bat in five seconds flat. The skill is quickly mastered: Workshop students get plenty of practice with up to 100 bats captured and released in a single night.

More than 1,400 BCI workshop graduates are now scattered among at least 18 countries and well over 220 federal and state agencies, universities, conservation organizations, and corporations. Many have become leading advocates of bats around the world. Although the hands-on work is vital, all sessions also include wide-ranging lectures on conservation strategies, public education, and similar topics.

Regena Orr of the California Department of Parks and Recreation cited especially the information on conflict resolution. Noelle Ronan, a Bureau of Land Management biologist in Spokane, said, “The lecture on educating the public made a big impression on me” and will prove valuable in the future.

Cave Creek Canyon, meanwhile, is a near-perfect classroom. Its rock walls are pocked with caves, many of them roosts for a medley of bats; the canyon floor offers rich riparian and desert-scrub habitats and even an abandoned mine closed with a bat-friendly gate.

South Fork Creek, visited on the first night, offers a special attraction. Tyburec’s discussion of bat detectors came to an abrupt intermission when a student shouted: “There they are! Wow!” About 100,000 Mexican free-tailed bats (*Tadarida brasiliensis*) stream out of Statue Cave above the creek, weaving a black ribbon across the sky over the Cave Creek Canyon cliffs. “I’ve seen the emergence at Bracken Cave [in Texas, home of the world’s largest bat colony], but this one was right up there,” says Rick Lance, biologist for the U.S. Army Corps of Engineers.

It gets even better from there, as the five-day workshop moves on to nets and species

identification. The experience, says Noelle Ronan, “helped me improve my bat-ID skills, as well as my capture effectiveness.” And, she adds, “the workshop was great fun.”

Getting into the field begins with an early dinner to allow time for scouting out locations and setting up the nets. Participants split into groups and look for natural flight corridors that the bats use to maneuver the canyons. They stretch nets across likely spots, especially the little pools in Cave Creek.

Then everyone settles down with headlamps and gloves to wait for the action to begin. The fluttering pipistrelles usually are the first to arrive. They execute a “zip and run” over the pools, swooping down quickly for a drink, then moving on. Less maneuverable freetail need a longer drop zone; they come in long and low and leave the same way. Among the most entertaining to watch are Townsend’s big-eared bats (*Corynorhinus townsendii*) and Allen’s big-eared bats (*Idionycteris phyllotis*). They can almost hover like helicopters and typically dart straight in and out.

Nets are checked constantly after the first capture, since bats are invisible in the darkness and most hit the nets silently. The exceptions are bigger bats, such as the irascible hoary bats (*Lasiurus cinereus*). They thunk into the net and often protest their capture with a distinctive hissing and clicking sound. This, along with beautiful fur in hues of orange, brown, yellow, silver, and white, makes hoary bats easy to identify.

If all this doesn’t sate your enthusiasm, the spring-fed swimming pool at Research Center headquarters is a popular watering hole for big and pocketed free-tailed bats (*Nyctinomops macrotis* and *Nyctinomops femorosaccus*), which are also netted and studied. Nearby hummingbird feeders even attract Mexican long-tongued bats (*Choeronycteris mexicana*).

When asked how the workshop might be improved, Kim Hall, a wildlife technician with the Vermont Fish and Wildlife Department, said simply, “Make it longer. I didn’t want to leave. It was nice being with people who are as crazy about bats as I am,” she said as she showed off her bat tattoo.

ANDY MOORE is Conservation Programs Administrator at BCI.

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