



## ARIZONA BAT RESOURCE GROUP NEWSLETTER

Winter 2005

Arizona Bat Conservation News and Information...

### From the Editor:

*Season's Greetings! Thank you to all those batty people out there for sending updates. This edition includes the latest on some of the projects going on around the state, as well as recently announced, excellent bat opportunities. If you are interested in working in Honduras this summer, or if a Graduate Research Assistantship in northern Arizona is for you, check out the Announcements section.*

*It was great seeing many of you recently at the 35<sup>th</sup> Annual North American Symposium on Bat Research (NASBR). For those unable to attend, NASBR was a great success again this year and lots of fun. It was held at the Holiday Inn Capitol Plaza in Sacramento, California, October 19-22. Winston Lancaster (California State University Sacramento) served as the local host. Three hundred and fifty registered participants attended the three-day scientific conference, making it the largest non-international NASBR meeting ever held. In addition to the regular participants, there were approximately 35 local educators who attended the special 10th Anniversary Teacher Workshop on Saturday morning. If you've never attended a NASBR meeting, start saving to attend the 2006 meeting in North Carolina, and keep in mind NASBR is planned for Merida, Mexico in 2007.*

*Speaking of Mexico, a big thanks to all that donated mist nets to help biologists in Mexico. Nets donated so far were given to Arnulfo Moreno at NASBR. I'll continue to pass your used nets (and related equipment) on to biologists in Mexico, so please keep this in mind as you purge and purchase gear before the next field season gets underway.*

*Lastly, the Arizona Bat Resource Group will be meeting in Flagstaff in conjunction with the Wildlife Society Meeting February 2-4, 2006. Please send me your agenda ideas to me by December 31.*

*Have safe and happy holidays!*

A handwritten signature in black ink that reads "Angela McArthur".

*Bat Management Coordinator  
Arizona Game and Fish Department*

## National and Regional Updates:

### Western Bat Working Group Conference Call

The last conference call was on November 15. Notes from the call are now posted on the WBWG website, under the "Business" section. The next conference call will be held on December 14. Please let Angie know if you have an issue for discussion, or if you'd like to participate on the call (amcintire@azgfd.gov)

### Mary Kay Clark First To Serve As SBDN's Bat Conservation Director

From Troy L. Best, President of the SBDN:

On behalf of the Board of Directors of the Southeastern Bat Diversity Network (SBDN) I am pleased to announce that SBDN has secured funding to support a staff position to address issues of concern regarding bats in the region. The North Carolina Wildlife Resources Commission has agreed to host this full-time position, which is funded for 3 years. This position, known as "Bat Conservation Director", will begin 1 November 2005. Mary Kay Clark has been hired to serve in the position. Many of you already know Mary Kay from her previous work with the SBDN and as Curator of Mammals at the North Carolina Museum of Natural Sciences.

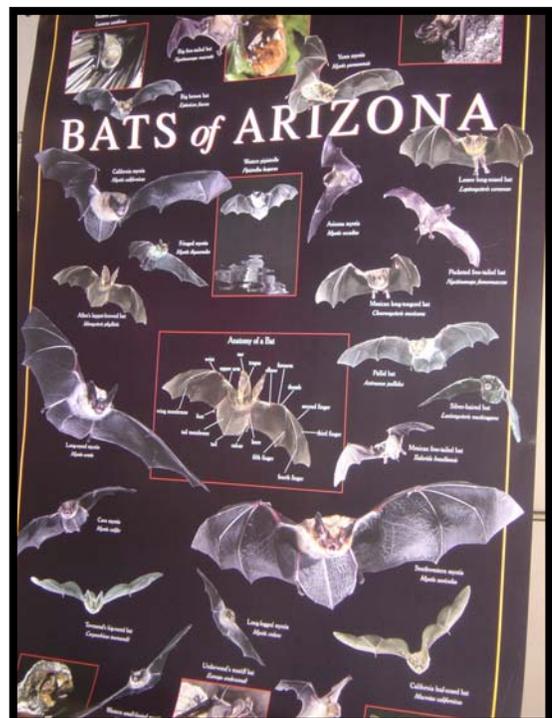
The Board of Directors of SBDN believes that it is desirable for the SBDN to extend its outreach to work more closely and consistently with agency personnel and others to develop specific programs to preserve diversity of bats in the southeastern United States. We look forward to hearing about your needs and ideas and to working more closely with you. A portion of the annual meeting in February 2006 will be devoted to more fully explaining the position and its objectives and to receiving your input.

### State Update:

Be sure to check out the Bat Conservation and Management page on the Arizona Game and Fish Department webpage at [http://www.azgfd.gov/w\\_c/bat\\_conservation.shtml](http://www.azgfd.gov/w_c/bat_conservation.shtml) you'll find a downloadable copy of the Arizona Bat Conservation Strategic Plan, previous newsletters, and information on bats of Arizona. Suggestions and comments are always welcome.

### New - Bats of Arizona Poster!

The Arizona Game and Fish Department recently revised the Bats of Arizona poster (see photo to the right, which doesn't do it justice but will give you an idea of the layout). The glossy black poster features stunning photos of Arizona's 28 bat species, with many excellent new photos by Bruce D. Taubert. You can get one at the Phoenix office, or at one of our six regional offices. Please call ahead to ensure availability.



## **Field Activities/Updates:**

### **Lesser long-nosed bat Habitat Selection Criteria Model (AGFD: Shawn Lowery)**

This project is in the data collection phase. This model looks at temperature, relative humidity, and light levels within specific roosts that met criteria set at the initiation of the project; i.e. occupation for the past two years with more than 50 individuals counted in the yearly simultaneous LLNB census. We are currently retrieving all data loggers from sites throughout southwestern Arizona. Data loggers have been collected from the Maternity roosts. The next segment of this project will be to deploy data loggers in mines and caves within northern Mexico LLNB roosts.

### **Forest Treatment Study (AGFD: Valerie Horncastle and Mylea Bayless)**

This season (2005) 288 artificial roosts were installed in three different forest treatment areas (proposed thin, thin/burn treatments and a control). Once each month all the bats roosting in the boxes were removed using a modified harp trap which captures the bats as they exit the boxes in the evening. Eighty-seven bats were captured and marked (with tattoos and color id bands) during three trapping events. Fourteen bats were recaptured in the boxes during the season's trapping events. Six species used the boxes (*Eptesicus fuscus*, *Myotis auriculus*, *M. evotis*, *M. occultus*, *M. thysanodes*, and *M. volans*). Bats occurred most often in east facing boxes, followed by west, south and north facing boxes respectively. Bat box use peaked in mid-August with an 11.5% occupancy rate. We also mist-netted once a month in each of the three treatment areas and netted an additional 168 bats comprised of 11 species. In addition to those listed above we captured *Antrozous pallidus*, *Idionycteris phyllotis*, *Lasiurus cinereus*, *Myotis yumanensis*, and *Tadarida brasiliensis*. Also in 2005 we installed temperature sensors in each box and the data are currently being analyzed to determine the relationship between temperature within and artificial roost and its occupancy status by bats (project location: near Flagstaff, northern Arizona).

### **Mine Closure Evaluations (AGFD: Bill Burger)**

Bill Burger, AGFD biologist, is working with the U.S. Forest Service, Payson Ranger District to evaluate abandoned mines for closure options.

### **Hualapai Reservation Bat House Project (Lower Colorado River RC&D, Hualapai Tribe, AGFD)**

The goal of this project is to construct a bat house or bat tower in early 2006 to replace lost habitat for Townsend's big-eared bat (*Corynorhinus townsendii*) when the historic Valentine schoolhouse is renovated (Hualapai Reservation, Mohave County).

### **San Tan Regional Park Bat Gates (AGFD & Maricopa County Parks and Recreation)**

The goal of this project is to construct a bat gate to protect a California leaf-nosed bat (*Macrotus californicus*) roost in a Phoenix area Mountain Park. Gate construction is planned for early 2006.

### **California leaf-nosed Bat Winter Roost Cupola Installation (AGFD: Shawn Lowery)**

Recently, a cupola was installed on a mineshaft near Buckeye, Arizona that is a winter roost for about 200 California leaf-nosed bats (*Macrotus californicus*). One post-structure survey has been done (the bats just returned in November) and so far the bats are continuing to use the shaft.

### **Landscaper/Bat Encounter Survey (AGFD: Nancy Renison)**

AGFD and volunteer Nicole Mann are conducting a survey of landscape companies in the Phoenix metropolitan area (to be followed by a survey of Tucson, Yuma, Kingman, and Flagstaff) to learn more about how and where bats use trees in major urban areas in Arizona and the relative frequency that they are encountered by landscape workers.

### **Phoenix Bat House Investigation (AGFD: Nancy Renison)**

AGFD is working with the Phoenix Desert Botanical Gardens (DBG) to install bat houses at the DBG to investigate design options for the Phoenix area and provide bat educational information to visitors.

### **Sampling in southeastern Arizona mountain ranges for *Euderma maculatum*, *Idionycteris phyllotis*, and *Leptonycteris curasoae* (Ronnie Sidner, Debbie Buecher)**

The objective of this project was to sample the sky island ranges in southeastern Arizona for three species of bats, *Euderma maculatum*, *Idionycteris phyllotis*, and *Leptonycteris curasoae*. The mountains sampled included the Huachucas, Dragoons, Grahams, Galiuros, Santa Ritas, and Santa Catalinas. Before beginning the project, project leads established a sonar call library for these species in areas where they are known to occur. This project has increased our understanding of the lesser long-nosed bat distribution at the northeast edge of their range. Project leads also captured a western yellow bat (*Lasiurus xanthinus*), which is the first record in the Galiuros.

### **Seventeenth annual Lesser long-nosed bat monitoring at Fort Huachuca (Ronnie Sidner)**

Funded by the U.S. Army, during summer/fall 2005, Dr. Sidner continued into the 17<sup>th</sup> consecutive year of monitoring bats, especially *Leptonycteris curasoae*, at Fort Huachuca. We obtained the highest exit count of *L. curasoae* that we've ever recorded at Pyeatt Cave, over 11,000 bats. Considering the highest count as of 2004 was 9400, and that there were no *L. curasoae* at this known roost in 1989 through 1995, the continuous increase in numbers there every few years since 1995 has shown that strict protections of roosts does allow species recovery. It also indicates that management strategies may have to tolerate a considerable period of time for recovery to occur. Other species, *Myotis velifer*, *Choeronycteris mexicana*, and *Corynorhinus townsendii*, at various roosts continued to show stable or increasing numbers at Fort Huachuca.

### **Bat-Use Pilot Study (Debbie Buecher, Ronnie Sidner, U.S. Bureau of Reclamation)**

In the summer of 2005 we conducted a pilot study funded by USBR to evaluate and compare bat-use between native cottonwood galleries and non-native saltcedar groves along a riparian corridor near Winkleman, AZ. The study involved acoustic sampling (using two detector systems) with bat-use quantified by the number of feeding buzzes in each habitat. We are currently evaluating our call files and anticipate presenting our results at the 2006 AZ-NM Wildlife Society Meeting in Flagstaff, AZ.

### **Determining the Distribution in, and Seasonal Use of, the Tucson Area by *Leptonycteris curasoae* and *Choeronycteris mexicana* by Monitoring Hummingbird Feeders (Sandy Wolf)**

The goal of this project is to involve and educate members of the community to monitor hummingbird feeders for lesser long-nosed and Mexican long-tongued bats, the two species of nectar bats that feed at hummingbird feeders in the Tucson area.

### **Foraging patterns and roost sites of big free-tailed bats (*Nyctinomops macrotis*) in northern Arizona (Jason Corbett, MS project)**

The big free-tailed bat (*Nyctinomops macrotis*) is one of North America's largest bats yet little published biological or ecological information exists for the species and most references are incidental. The bat appears to feed on a variety of flying insect species, is associated with rocky terrain, and, based on 2 records, roosts in cracks located in high, vertical cliffs. The species is patchily distributed across its range but present throughout Arizona. I attached radio transmitters to 8 female big free-tailed bats (*Nyctinomops macrotis*) captured at 3 locations throughout northern Arizona, June-August 2005. We tracked bats until they lost transmitters to identify foraging patterns, roost locations, and travel corridors. Tagged bats kept

their transmitters for only 2 ( $\pm$ 2) days. One bat was tracked for 7 nights and spent almost all of its time foraging over Great Basin desert scrub vegetation and on at least one occasion made a 1-hr round trip flight from desert scrub to ponderosa pine forest, an elevation gain of  $\sim$  1100 m. Great Basin desert scrub and various tributaries to the Colorado River were used extensively as foraging areas and travel corridors. Total distance traveled nightly was estimated as  $\sim$ 32 km each for 2 bats. Roost sites were in cracks and crevices in limestone and sandstone in the upper portions of vertical cliffs along the upper Colorado River (Marble Canyon), Kanab Creek (Grama Canyon), and Canyon de Chelly. Of the 7 bats tracked back to roost sites, 3 roosted at the same location in Marble Canyon and 2 other bats roosted at the same location at Canyon de Chelly. An exit count conducted at the Canyon de Chelly roost confirmed at least 4 bats at the roost thus suggesting big free-tailed bats form small maternity colonies which is consistent with the literature. We were unable to document night roosting for big free-tailed bats. Bats emerged from day roosts  $\sim$ 2030 each night, foraged for approximately 6 hours and returned to their day roost. Previous work in the southwestern United States with big free-tailed bats indicated similar roost sites; however, information regarding foraging patterns is absent from the literature. Big free-tailed bats appear to be patchily distributed in northern Arizona and use similar habitat compared with other populations in Utah, New Mexico, Texas, and Mexico. Loss or decreased availability of water sources could have negative impacts on populations of the big free-tailed bat.

## Cienega Creek Maternity Roost Restoration



Now that most bats have migrated to their winter homes, Don Carter, a biologist with Pima County Natural Resource Parks and Recreation, is busy creating and stabilizing bat habitat near Cienega Creek, southeast of Tucson. One objective of this project is to stabilize some of the erosion caves in the area to prevent them from collapsing. These erosion caves (also called soil-piping caves) are used as maternity roosts by Mexican long-tongued bats, and are also used as day roosts for

Townsend's big-eared, pallid, pipistrelle, and *Myotis* bats. Another goal of the project is to construct an artificial cave, designed to mimic natural features in the area. Here, Don's brother creates the rebar skeleton of the roost structure.

### Miscellaneous Observations

On 12/5 a Tucson resident reported that he has observed a bat draining his hummingbird feeder nightly, in spite of below 30-degree temperatures.

## Lesser long-nosed bat Annual Simultaneous Counts

To meet objectives in the lesser long-nosed bat Recovery Plan and help track the status of this endangered bat, roosts are surveyed simultaneously (typically once in June and once in August). A few site counts are still being verified.

### June 18, 2005 Maternity roosts:

Copper Mountain – 37,863  
Old Mammon –  
Bluebird –  
Pinacate –

### August 22, 2005 Late Summer roosts:

State of Texas –13,650	Pyeatt – 8,000
Patagonia Bat Cave – 15,500	Rincon Gold – (9/10 - 4,834)
Mustang -	Copper Mountain – No Count (Border issues)
Little Dragoon – 3,796 (9/4 - 6,800+ )	Pinacate – 8,111
Lonestar Mine – 50	New Mexico – (8/27 - 6,200-6,500, >1 site)
Hilltop -	

## Announcements and Notes:

### Graduate Research Assistantship (GRA)

#### Forest Restoration and Bat Communities in a Wildland Urban Interface

The School of Forestry at Northern Arizona University will fund a Masters-level graduate assistantship starting in July 1, 2006 (or as early as May). This 2-yr project has the objectives of describing bat communities in the wildland urban interface around Flagstaff Arizona and assessing the impacts of forest restoration treatments on bats. Specific objectives are to (1) describe bat species in the wildland urban interface (WUI) of Flagstaff and determine if bat communities in the WUI differ from those outside the WUI, (2) describe habitat use by bats, (3) quantify use (foraging, roosting) by bats of different forest restoration treatment areas, and (4) identify management options to protect, retain, or enhance habitat for bats during forest management treatments (density of leave trees, types and numbers of snags to retain, timing of forest operations). The project is a cooperative effort between Northern Arizona University School of Forestry, the Arizona Game and Fish Department, and the USDA Forest Service.

Applicants must have an undergraduate degree in an appropriate field (for example, Forestry, Biology, or Environmental Science), be willing to work and camp in remote areas, work an irregular schedule including long hours day and/or night (for example, 6 pm to 4 am), experience possible encounters with venomous animals (scorpions, snakes) and large mammals (mountain lions, bears), and must have a valid driver's license.

The ideal candidate will have: excellent bat identification skills for the 28 species of bats that occur in Arizona; experience or familiarity sampling bats including mist netting, radio telemetry, use of Anabat detectors; experience or familiarity sampling vegetation and habitat elements; experience or familiarity sampling bat prey (for example, insect sampling using light traps); rabies pre-exposure shots and titer check; demonstrated quantitative, verbal, and writing skills; ability to maintain consistent focus on detail-intensive tasks; ability to work well with other field crew members; ability to conduct field work on rough terrain during inclement weather; ability to drive 4WD vehicles in a safe and careful manner.

This GRA is funded at \$14,708 per year. Health insurance is provided as an additional benefit.

For additional information contact Dr. Carol Chambers: Telephone 928/523-0014 or E-mail: Carol.Chambers@nau.edu

To apply, send (1) letter of application and interest, (2) resume, (3) unofficial college transcripts from all schools attended, (4) GRE scores (if available), and (5) list of 3 references (include address/phone/email) to: Carol Chambers, School of Forestry, PO Box 15018, Northern Arizona University, Flagstaff, AZ 86011 **Closing Date For Applications: February 3, 2006**

### **Opportunity to Survey Bats in Honduras**

Operation Wallacea is currently accepting applications from enthusiastic and experienced bat scientists to join their survey teams in Parque Nacional Cusuco, northern Honduras for their 2006 field season. These teams will contribute data towards a long-term monitoring study of the biodiversity within the region using a standardized protocol while working closely with the protected area authorities.

The survey teams operate out of a variety of remote forest camps assisted by student volunteers. This is an opportunity to contribute towards a valuable conservation management study and also to publications arising from data collected.

Applicants need to have extensive experience of mist netting for bats within a forest habitat (preferably within the Neotropics), as well as evidence of leadership skills and an ability to work in remote areas as part of a small friendly team. Previous experience working within a developing country and a working knowledge of Spanish are desirable attributes.

This is a voluntary post, however all food and accommodation costs in country are covered by the project.

#### **Contract period: Various dates available:**

**Full – June 27 – September 8**

**Part – June 27 – August 9**

**Part – July 25 – September 8**

Location: We have surveys operating out of ten sites within the highland forests of Parque Nacional Cusuco, northern Honduras – see [www.opwall.com](http://www.opwall.com)

Applications: Applications to be made by email to [info@opwall.com](mailto:info@opwall.com). Applicants should enclose a 1 to 2-page CV and a covering letter identifying how they meet the attributes, skills and experience requirements listed above. Please put "Bat Scientist – Cusuco Forest" in the email subject field.

**Closing date: December 23, 2005**

### **Bat News - Bats and Ebola Virus**

Three species of bats that are eaten by people in central Africa may be carriers of the [filovirus] Ebola virus that has killed hundreds of humans and great apes, scientists said on Wed 30 Nov 2005.

Although the bats do not show any evidence of infection, the International Centre for Medical Research in Franceville, Gabon discovered genetic evidence or an immune response in the animals, captured during outbreaks between 2001 and 2003. "We find evidence of asymptomatic infection by Ebola virus in 3 species of fruit bat, indicating that these animals may be acting as a reservoir for this deadly virus," Eric Leroy and his colleagues said in a report in the science journal Nature.

Ebola hemorrhagic fever, which was first identified in 1976, is one of the most virulent viral diseases, according to the World Health Organisation. It damages blood vessels and can cause extensive bleeding, diarrhea and shock. The virus killed more than 240 people in the Democratic Republic of Congo [formerly Zaire] in 1995. Several outbreaks, which resulted in 254 deaths, occurred between 2001 and

2005 in Gabon and the Republic of Congo. The virus is transmitted by infected body fluids and kills up to 90 percent of victims, depending on the strain. There is no cure for Ebola hemorrhagic fever.

Leroy and his team captured and tested more than 1000 animals [i.e. small vertebrates including frugivorous bats - Mod.CP] in Ebola virus-infected areas of Africa to find possible reservoirs of infection. Each of the bat species that showed evidence of the virus had a geographical range that included regions where human outbreaks of Ebola had occurred.

The researchers said the findings could help to reduce infections in both great apes and people. "Human infection directly from fruit bats might in part be countered by education, as these animals are eaten by local populations living in the outbreak regions," Leroy added.

### **Summary of the Special Session Cave Resource Management, 8<sup>th</sup> Biennial Conference for Research on the Colorado Plateau, Flagstaff, Arizona**

Last month (November) at the 8th Biennial Conference of Research on the Colorado Plateau, Flagstaff, Arizona, speleologists, bat biologists, paleontologists and the caving community convened for an all day special session on Cave Resource Management. Ronal Kerbo, National Cave Management Coordinator, National Park Service was the keynote speaker for this event, and Jerry Trout, National Coordinator of Cave Resources, USDA Forest Service also presented. Researchers, managers and National Speleological Society members gave presentations on a wide array of cave issues and topics. Talks included cave restoration techniques, an update of the newly created private speological preserve at Cathedral Caverns in northern Arizona, a talk about the 15,000 year old mummified spotted bat from a Navajo Nation cave, several presentations on management and research at Grand Canyon National Park, an update on the progress on the Arizona Cave Survey, two paleontology presentations and several talks on bats and cave ecology. Following presentations, participants and presenters met for a breakout session to begin dialogue regarding how to best study, responsible use, and manage caves on the Colorado Plateau. Most participants agreed the development of a multidisciplinary, multi-interest Colorado Plateau Cave Ecological Network should be established. This could serve not only to bring together varied interest, but will also serve as a core group of individuals to execute cave projects. Currently, USGS-Southwest Biological Science Center wildlife ecologist and NAU PhD candidate J. Judson "Jut" Wynne is working with the Cave Resource Foundation to develop such a network. So, stay tuned...

The day after presentations and the break out session, participants had the opportunity to visit Cathedral Caverns near Ash Fork, Arizona. Preserve stewards (Doug Billings and Tom Gilliland) and Jut led the field trip. During the field trip, Jut was conducting preliminary invertebrate sampling of both Cathedral and Indian Caves, which gave field trip participants the opportunity to observe invertebrate sampling techniques. Of notable mention was the discovery of a high cave-adapted millipede (*Speodesmus* sp.). Currently cave adapted millipedes are known from only one other cave in northern Arizona. Researchers are optimistic this likely represents a new species discovery. For more information, please contact J. Judson Wynne at 928.556.7172 or jut.wynne@nau.edu.

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### **Funding Opportunity**

The U.S. Fish and Wildlife Service has announced it is seeking proposals for conservation projects on private lands through its Private Stewardship Grants Program. For FY 2006, approximately \$6.5 million is available through this grant program to support on-the-ground conservation efforts on private lands. **Proposals must be submitted to the Regional Offices of the Service by January 23, 2006.**

This program provides Federal grants on a competitive basis to individuals and groups engaged in voluntary conservation efforts on private lands that benefit imperiled species such as Federally listed endangered or threatened species as well as proposed, candidate and other at-risk species. Landowners

and their partners may submit proposals directly to the Service for funding to support those efforts. For more information regarding this grant opportunity and on how and where to submit proposals, please visit the Services Private Stewardship Grants Website at [http://endangered.fws.gov/grants/private\\_stewardship.html](http://endangered.fws.gov/grants/private_stewardship.html).

## Meetings and Events:

### **Arizona Bat Resource Group Meeting at Joint Annual Meeting Arizona/New Mexico chapters of The Wildlife Society, Radisson Hotel, Flagstaff, Arizona, February 2-4, 2006**

Mark your calendars. The Arizona Bat Resource Group meeting will be held in Flagstaff, in conjunction with the Joint Annual AZ/NM TWS Meeting. Meeting and Conference details will be forthcoming, but if you have meeting agenda ideas, please let Angie know.

### **Bat Conservation And Management Workshops**

Each year Bat Conservation International offers a comprehensive curriculum for an introductory field workshop designed to train serious students of bat conservation in the current research and management techniques for the study of bats. Following an intensive 6-day and 5-night agenda, BCI biologists and professional colleagues will bring workshop participants a combination of lectures and discussions, field trips to view bat habitat resources, and hands-on training to catch and identify bats. Learn species identification, netting, radio-tracking, night-vision and habitat assessment, while working in extraordinary settings. **Arizona workshop** in the Chiricahua Mountains emphasizes western bats. The Chiricahuas offer a biodiversity unequalled anywhere else in North America. You can expect to see, and even to capture and handle, as many as 18 bat species in a single evening, and then watch endangered long-nosed bats visit hummingbird feeders at your front door. Participants have also enjoyed spotting ring-tailed cats, coatis, and trogons. BCI workshop veteran Janet Tyburec, Dr. Katy Hinman, and Arizona Game and Fish Department biologists will share a wealth of knowledge on species identification (including by echolocation calls), bat conservation, management, education, public health and nuisance issues, artificial habitats, and much more. We will stay at the American Museum of Natural History's famous Southwest Research Station, where you will enjoy superb dining with researchers from around the world.

*Two sessions: June 12-17 and June 17-22, 2006. Each session limited to 15 people. Departure city: Tucson, AZ. Cost: \$1295*

Our **Pennsylvania workshop** highlights eastern bats and their habitats. We'll net, trap, and release bats over trout streams and beaver ponds, observe endangered Indiana bats swarming at a mine entrance, watch 20,000 little brown bats in a spectacular dawn return to their roost at a restored church, and examine them up close. Workshop co-leader, Cal Butchkoski of the Pennsylvania Game Commission, is a leading expert on surveying and radio-tracking Indiana bats, as well as one of America's most successful builders of bat houses and other artificial roosts. He and Janet Tyburec will share a wealth of knowledge covering all aspects of bat conservation, management, education, public health and nuisance issues. Home cooking is but one of many unexpected treats at historic Greene Hills Lodge, our workshop headquarters.

*One session: August 7-12, 2006. Limited to 20 people. Departure city: Harrisburg, PA. Cost: \$1295*

A **Kentucky workshop** focuses on cave-dwelling bats, taking us to the heart of America's karst country at the Cave Research Foundation's Hamilton Valley facility. In the company of experts, we'll visit hibernation and nursery caves of endangered gray and Indiana myotis, and learn how to detect bats' prior use of caves and to identify habitat conditions that meet their needs. Fieldwork includes netting and harp trapping at cave entrances and at nearby feeding and drinking habitats, with hands-on identification of 10 Eastern species. We will visit bat gates with their designers and also discuss habitat assessment, field research techniques, bat houses, and public health issues.

*One session: August 16-21, 2006. Limited to 20 people. Departure city: Nashville, TN. Cost: \$1295*

### **Acoustic Monitoring Workshop**

In response to many requests, BCI is offering an acoustic monitoring workshop session in conjunction with our Bat Conservation and Management sessions in **Portal, Arizona**. The workshop will cover hardware and software including Anabat, Pettersson and SonoBat, teach call identifications and how to develop a monitoring program. Joining BCI's Janet Tyburec will be acoustic experts Sybill Amelon, Joe Szewczak, and Ted Weller. The session

format will be similar to BCI's Bat Conservation and Management workshops combining current research discussion with hands-on demonstrations and fieldwork. Each night we will be capturing bats and developing call libraries so participants can return to their home study areas and begin their own projects armed with knowledge and experience. BCI will have equipment on hand but participants are encouraged to bring their own systems as well. The Acoustic Monitoring Workshop is an advanced workshop designed for graduates of previous BCI workshops and/or experienced bat workers.

*One session: June 22-27, 2006. Limited to 15 people. Departure city: Tucson, AZ. Cost: \$1295*

**For information and applications, visit [www.batcon.org](http://www.batcon.org) or contact Kari Gaukler, BCI, 512-327-9721 or [kgaukler@batcon.org](mailto:kgaukler@batcon.org)**

### **36<sup>th</sup> Annual North American Symposium on Bat Research – Wrightsville Beach, North Carolina, October 18-21, 2006**

The 36<sup>th</sup> Annual North American Symposium on Bat Research will convene in Wrightsville Beach, NC. Mary Kay Clark will host the Symposium. Information will be posted on the website as it becomes available.