



Nightwing News

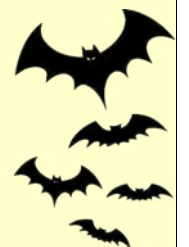


The Newsletter of the Southeastern Bat Diversity Network



Volume 109, Number 2

Fall/Winter 2019





Nightwing News



The Newsletter of the Southeastern Bat Diversity Network

Volume 109, Number 2

Fall/Winter 2019

In This Issue

	Page
In This Issue	2
President's Address	3
Executive Committee Contact Information	4
Executive Committee Meeting	5
Committees Contact Information	6
Committee Reports	7
WNS Update	10
2019 SBDN Bat Blitz	11
State Updates	14
Awards and Recognition	50
Meeting History of the Colloquium & SBDN	51
Upcoming Events	52
Closing Comments	56

Cover Photo: Southeastern *Myotis* exiting roost tree in the Delta National Forest, MS.

President's Address:

I hope everyone had a fun and productive summer field season this year. Like many of you, I was afraid when white-nose syndrome came on the scene years ago that bat work was going to dry up. It has undoubtedly become harder to work with what were once our common species in the southeast, but I learned about, and was lucky to be involved with, new and exciting research this season and it sounds like that is going to continue. Of course, for many members this marks the beginning of the underground field season so I would like to wish the best of luck to all of you with your boots in the mud or your backs against the ceiling of a culvert. Be safe out there and make sure you clean said mud off your boots!

We are also now in the season of state bat meetings and as many of you know, our friends in the Mississippi Bat Working Group lost one of their bedrock members. Kathy Shelton, who also served on the SBDN board, passed away unexpectedly this past July. The MBWG has established a fundraiser to memorialize Kathy, and you can find more information about contributing to her memory in the Mississippi section of this edition of Nightwing News.

The state working group meetings provide an excellent opportunity to learn about ongoing research and collaborate with those conducting it. I encourage everyone to attend your local bat working group meeting and even cross those state lines if you can. The annual meeting of the SBDN certainly provides similar opportunities but the smaller group settings of the state meetings give us a chance to interact in more one-on-one situations.

Speaking of the annual meeting, I look forward to seeing everyone in Athens in February! I've been on a few of the planning committee calls this fall, and the local host committee has some fun and exciting things lined up. Keep an eye out for more information on the listserv. And in keeping with the "N" in SBDN theme from the last edition of Nightwing News, let's all try to step out of our comfort zones at this year's meeting. I think we tend to gravitate to old friends and groups, which is great, because talking with friends I haven't seen in a year is one of the most exciting things about the meeting. However, I'm sure if all of us who have been around the bat world for a while think about it, we can trace some pretty amazing experiences back to a quick conversation with a stranger at a meeting. So be brave, introduce yourself, and see where the conversation goes.

Steve Samoray

Executive Committee Contact Information

President:

Steve Samoray
Biologist/Project Manager
Copperhead Environmental Consulting
Paint Lick, KY 40461
615) 542-1000
Ssamoray@copperheadconsulting.com

Treasurer:

Luke Dodd
Assistant Professor
Department of Biological Sciences
Eastern Kentucky University
Memorial #183
Richmond, KY 40475
859-622-2523
luke.dodd@eku.edu

President Elect:

Holly Ober
Associate Professor
Dept. of Wildlife Ecology and Conservation
University of Florida
155 Research Rd.
Quincy, FL 32351
Office: 850-875-7150
Cell: 850-879-7113
holly.ober@ufl.edu

Secretary:

Katherine Caldwell Etchison
Wildlife Diversity Biologist
Associate Wildlife Biologist
NC Wildlife Resources Commission
24 Looking Glass Lane
Ashville, NC 28805
828-545-8328
Katherine.caldwell@ncwildlife.org

Past President:

Trina Morris
Wildlife Biologist
Georgia Department of Natural Resources
Nongame Conservation Section
2065 U.S. Hwy. 278 S.E.
Social Circle, GA 30025-4743
Office: 706-557-3220
Cell: 678-836-5769
Fax: 706-557-3580
katrina.morris@dnr.ga.gov

Board Member at Large:

Scott Bergeson
Indiana State University
sbergeson@gmail.com

Executive Committee Meeting

**Southeastern Bat Diversity Network
Executive Committee
Minutes of the Mid-Year Board Meeting
September 4, 2019**

Attendees

Steve Samoray, President
Trina Morris, Past President
Luke Dodd, Treasurer

Katherine Etchison, Secretary
Scott Bergeson, Member at Large
Holly Ober, Incoming President Elect

Action Items:

- AI1:** Morris and 2020 SBDN Meeting Hosts revise meeting host package while planning 2020 meeting.
- AI2:** Morris, Burns, and Pattavina revise Bat Blitz host package.
- AI3:** Morris get information regarding poster committee from Carver for Bats of North America poster.
- AI4:** Morris and Bergeson post Washington Post article and other relevant information on bat carcass import to Facebook before Halloween season begins.
- AI5:** Morris bring up bat carcass import issue to NABCA for recommendations and for other groups to post information to social media.
- AI6:** Dodd follow up with Kentucky Bat Working Group about SBDN's involvement as bank for biodiversity meeting.
- AI7:** Samoray follow up with Bats and Mines Hosts to determine expectations for SBDN involvement regarding financial responsibilities. Also offer Ober as SBDN representative for steering committee.
- AI8:** Samoray check with Robinson to make sure recent Award Winners are added to website.
- AI9:** Samoray and Ober continue to look for 2021 SBDN Meeting hosts (SC, AR, KY, MS, TN).

Call to order: 10:00AM CST, President Samoray

February 2019 Executive Committee Meeting Action Items:

- Not Complete. **AI1:** Morris and Samoray revise meeting host package and post to website. Will incorporate 2019 meeting host feedback. Will also include statement to encourage non-bat presentations for Mammal Colloquium.
- Not Complete. **AI2:** Morris continue working with contributors to post bat blitz host package to website.
- Not Complete. **AI3:** Carver and Morris work with regional groups to make progress on Bats of North America poster.
- Not Complete. **AI4:** Morris continue working with BCI to draft letter regarding the import of bat carcasses.
- Action Items 5-6 are complete.

New Business

Kentucky Bat Working Group's Plan for a Biodiversity Meeting in 2020

Kentucky Bat Working Group has plans to expand the content of their annual meeting to include involvement of biologists dealing with varied at-risk taxa and biodiversity as a whole (i.e., mussels, fish, pollinators, birds), but would still need SBDN to serve as bank for the event. Dodd will send email acknowledging SBDN can serve as bank if the meeting is a one-time occurrence, wherein registration is collected through SBDN's online payment system. The meeting will focally involve bats and bat biologists, and financial responsibilities do not exceed the scope of SBDN's banking capabilities.

National Bats & Mines Workshop - 2020

SBDN was approached about participating in the National Bats and Mines Workshop in Nashville in 2020 by, 1) having a representative join the steering committee to help inform planning, and 2) be the financial intermediary for the workshop. Samoray will follow up with meeting hosts to determine what is expected from SBDN before proceeding and Ober will serve as SBDN representative on the steering committee. Addendum from Dodd on 1 Oct 2019 – Following additional correspondence after the conference call, the EC voted that SBDN should only offer to assist with online payments and registration at this point.

2020 SBDN Meeting

Meeting planning is on-track and a social, museum tour, and quiz bowl have been scheduled. Hosts are incorporating feedback from 2019 SBDN Meeting into meeting planning. Fundraising efforts are going well, and hosts are working on the agenda and logo. This meeting will include a memorial for Kathy Shelton. Registration is tentatively planned to open in October.

2021 SBDN Meeting

South Carolina is a potential option for 2021 Meeting. Samoray has been in touch with Palmetto Bluff and will reach out to others in SC (Kindel, Long, Loeb). Will also reach out to Arkansas. If SC and AR cannot host, other options include: Kentucky (last hosted in 2011), Mississippi (last hosted in 2012), and Tennessee (last hosted in 2013).

Treasurer's Report

As of 4 Sept 2019, there were \$72,386.55 in SBDN accounts. Of that, \$3,185.41 was in our general account. Membership dues remain our primary source of operating income. The largest expenses to be incurred this past year are related to tax preparation (\$600, awaiting invoice) and website maintenance (\$2,100 in 2018, \$350 in 2019 to date). The inflow of funds for the year to date totaled \$59,466.04, whereas outflows totaled \$56,770.89. We serve as a bank for 5 different state bat working groups (AL, GA, KY, NC, and TN). As is readily apparent from the amount of money moving through our bank account, and the amount of money held on behalf of various functions and groups, we perform a valuable service to the bat community.

Beyond the aforementioned state and general SBDN account, other accounts that have seen activity in 2019 include: 2019 Bat Blitz (now closed out), 2019 Meeting (now closed out), 2020 Meeting, Bat Blitz Funds (+ \$6,150.83 from 2019 SBDN blitz), and Colloquium Surplus Funds (+ \$4,496.37 from 2019 meeting).

On a final note, there have been 132 transactions in the year to date.

Respectfully submitted: 4 Sept 2019 – By Luke Dodd – SBDN Treasurer.

COMMITTEE UPDATES

Website Committee: (Robinson): website is working well for collecting membership dues and registration and is otherwise not very busy this time of year.

Blitz Committee: (Pattavina): Pattavina and Burns are co-chairs of this committee. Blitz will be held in northern Alabama August 3-7, 2020 and funding is on-track and will be primarily provided by the USFS. More information can be found at <https://sbdn.org/bat-blitzes-2/>

Membership Committee: (Bergeson): Sirajuddin is working on Conservation Research about Bats (CRAB) Facebook posts. Bergeson and Sirajuddin are only committee members and will consider what direction to take committee and potential action items.

Awards Committee: (Burnett): Chester Martin received the Lifetime Achievement Award at the 2019 SBDN Meeting and Alex Grimaudo from Virginia Tech was awarded the Student Travel Award to for his presentation at NASBR 2019 titled: *Host and Environment Interact to Drive Colony Persistence of Myotis lucifugus Impacted by White-Nose Syndrome*. Samoray will check with Robinson to get award winners added to the website.

WNS Committee: (Pattavina): this committee was created when WNS first arrived in the region, but has not been active in recent years, so it has been discontinued.

NABCA Update: (Morris): Morris serves as the SBDN representative to the North American Bat Conservation Alliance until end of her term as past president. The NABCA website was created through the Organization for Bat Conservation and has been discontinued, but it will soon be hosted through Bat Conservation International. Work on the State of the Bats of North America is ongoing and the wiki page is available and in need of content: <http://batconservationalliance.wikidot.com/>

Meeting adjourned at 10:52PM CST.

Committee Contact Information

BAT BLITZ COMMITTEE

Member

Pete Pattavina (Co-Chair)

Leanne Burns (Co-Chair)

Tim Carter

Nikki Castleberry

Michael Whitby

Bree McMurray

Katrina Morris

Joy O'Keefe

Gary Libby

Jason Robinson

Katie Teets

Affiliation

USFWS

Bat Biologist-Independent Biological Consultant

Ball State University

University of Georgia

University of Nebraska-Lincoln

MO DOT

Georgia DNR

Indiana State University

Skybox Ecological Services, LLC

Biological Systems Consultants, Inc.

Florida FWC

E-Mail

Pete_pattavina@fws.gov

leanneklb@gmail.com

tcarter@bsu.edu

neotoma@uga.edu

Michael.whitby@gmail.com

mobatgirl1@yahoo.com

Katrina.morris@dnr.state.ga.us

joyokeefe@gmail.com

garylibby@windstream.net

jason@biologicalsystemsconsultants.com

Katie.Teets@MyFWC.com

AWARDS COMMITTEE

Steven Burnett (Chair)

Nikki Castleberry

Pallavi Sirajuddin

Kristina Hammond-Rendon

Lisa Gatens

Clayton College & State University

Georgia Museum of Natural History

Clemson University

WEST, Inc.

NC Museum of Natural Sciences

StephenBurnett@mail.clayton.edu

neotoma@uga.edu

psiraju@g.clemson.edu

khammond68@yahoo.com

lisa.gatens@naturalsciences.org

MEMBERSHIP COMMITTEE

Scott Bergeson (Chair)

Steve Thomas

Blake Sasse

Indiana State University

Mammoth Cave National Park

Arkansas Game and Fish Commission

sbergeson@gmail.com

steve_thomas@nps.gov

dbasse@agfc.state.ar.us

WHITE-NOSE SYNDROME COMMITTEE

Pete Pattavina (Chair)

Katie Gillies

Katherine Caldwell

Emma Wilcox

Dottie Brown

Caroline Byrne

USFWS

Bat Conservation International

NC Wildlife Resources Commission

UT-Knoxville

Ecological Solutions

Biodiversity Research Institute

Pete_pattavina@fws.gov

kgillies@batcon.org

katherine.caldwell@ncwildlife.org

ewillcox@utk.edu

dottiebrown@ecologicalsolutions.net

caroline.byrne@briloon.org

BYLAWS COMMITTEE

Nikki Castleberry (Chair)

Tim Carter

Brian Carver

Georgia Museum of Natural History

Ball State University

Tennessee Technological University

neotoma@uga.edu

tcarter@bsu.edu

bcarver@tntech.edu

WEBSITE COMMITTEE

Jason Robinson Chair)

Biological Systems Consultants, Inc.

jason@biologicalsystemsconsultants.com

Committee Reports

BAT BLITZ COMMITTEE:

See the Alabama section for information on the 2020 SBDN Bat Blitz.

No changes to current committee membership.

AWARDS COMMITTEE:

Chester Martin received the Lifetime Achievement Award at the 2019 SBDN Meeting.

Alex Grimaudo from Virginia Tech was awarded the Student Travel Award to for his presentation at NASBR 2019 titled: *Host and Environment Interact to Drive Colony Persistence of Myotis lucifugus Impacted by White-Nose Syndrome*.

WHITE-NOSE SYNDROME COMMITTEE:

This committee was created when WNS first arrived in the region, but has not been active in recent years, so it has been discontinued.

BYLAWS COMMITTEE:

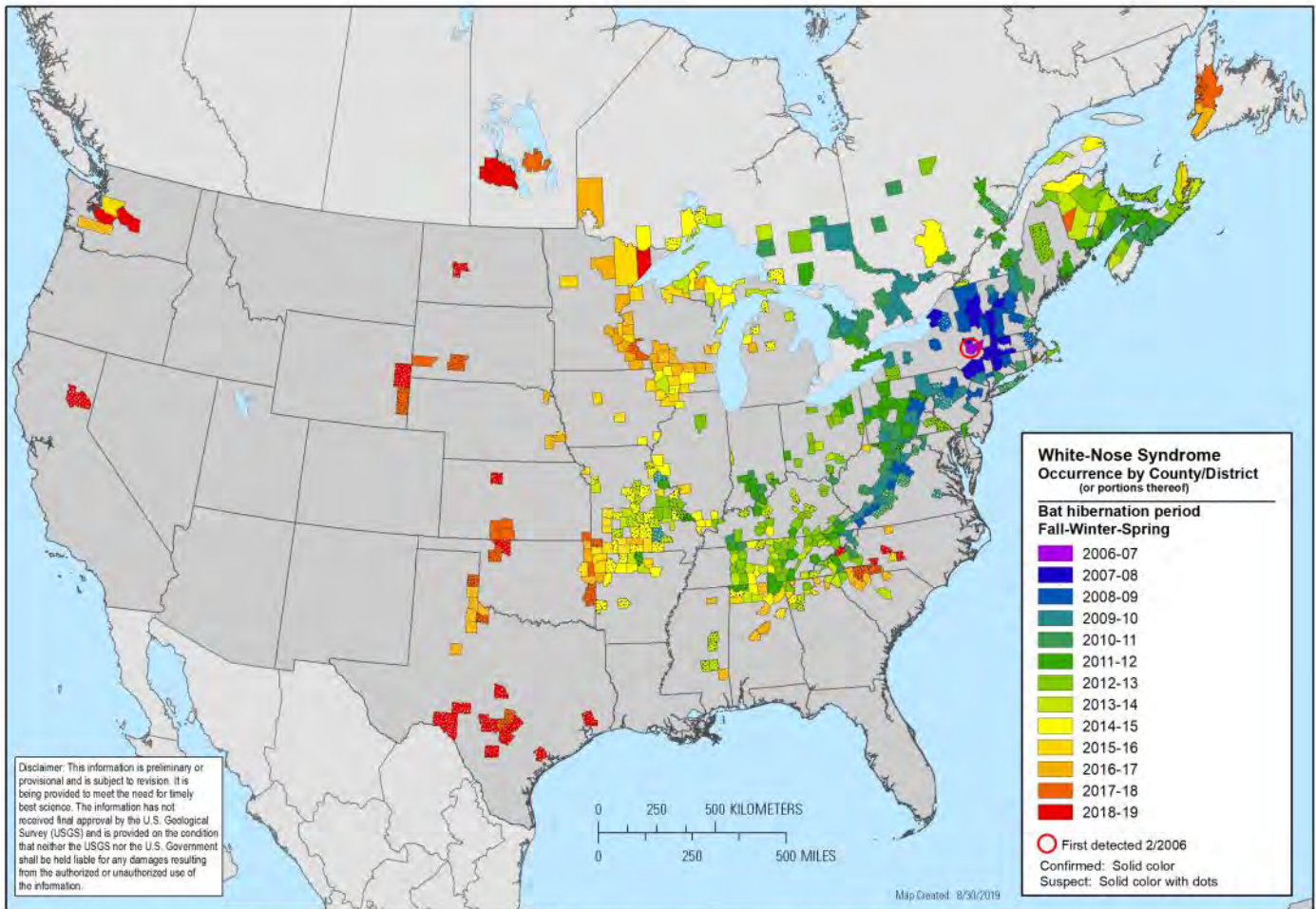
There is no committee business to report.

No changes to current committee membership.

WEBSITE COMMITTEE:

The website continues to operate as a source for SBDN announcements and serving state working groups by providing registration and payment options. Jason Robinson continues as the current webmaster.

White Nose Syndrome Update



Citation: White-nose syndrome occurrence map - by year (2019). Data Last Updated: 8/30/2019. Available at: <https://www.whitenosesyndrome.org/static-page/wns-spread-maps>.

White-nose syndrome (WNS) has continued to spread rapidly. Bats with white-nose syndrome have been confirmed in 33 states and seven Canadian provinces:

Alabama - Arkansas - Connecticut - Delaware - Georgia - Illinois - Indiana - Iowa - Kansas - Kentucky - Maine - Maryland - Massachusetts - Michigan - Minnesota - Missouri - New Hampshire - Nebraska - New Jersey - New York - North Carolina - Ohio - Oklahoma - Rhode Island - Pennsylvania - South Carolina - South Dakota - Tennessee - Vermont - Virginia - Washington - West Virginia - Wisconsin

Manitoba, Canada - New Brunswick, Canada - Newfoundland and Labrador, Canada - Nova Scotia, Canada - Ontario, Canada - Prince Edward Island, Canada - Quebec, Canada

There is evidence that the fungus that causes white-nose syndrome, *Pseudogymnoascus destructans*, is present in five additional states:

California - Mississippi - North Dakota - Texas - Wyoming

2019 SBDN BAT BLITZ

2019 SBDN Bat Blitz

During the first week in June bat biologists and enthusiasts from across the Southeast gathered on the Albemarle Peninsula in eastern NC for the 2019 SBDN Bat Blitz. North Carolina last hosted the Blitz in 2011 in the northern mountains of western NC. With great facilities and beautiful views, the Eastern 4-H Conference Center served as home base. NCWRC's Wildlife Education Staff kicked off the first night of the Bat Blitz with an educational program for the public. The program, titled "Bats Working the Night Shift" informed attendees on bat biology, behavior, conservation needs, and highlighted local bats during a night hike in which bat echolocation calls were recorded and identified. Mist netting surveys were conducted during the following three nights and targeted 28 survey sites in 8 counties, including sites on game lands, refuges, state parks, and NCSU experimental forest. Organizers and hosts for this year's Bat Blitz were Katherine Etchison (NC Wildlife Resources Commission), Ed Corey (NC Division of Parks and Recreation), Michael Morse (Alligator River National Wildlife Refuge), and Lisa Gatens (NC Museum of Natural Sciences).

A total of 225 bats of 8 species were caught and highlights included the capture of a federally threatened northern long-eared bat and three species of greatest conservation need: southeastern bat (31), Rafinesque's big-eared bat (9), and tri-colored bat (3). Attendance included over 50 participants, which consisted of biologists from state and federal agencies, students, professors, and environmental consultants.

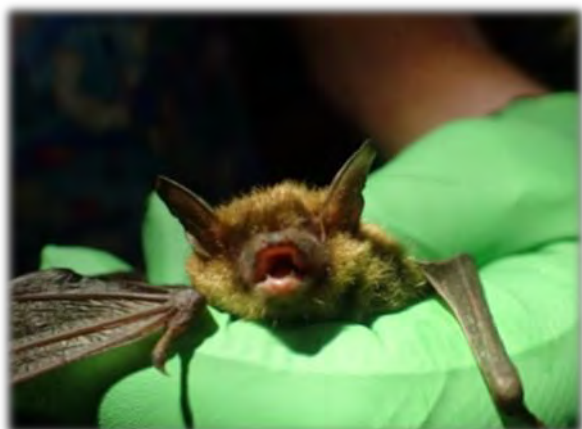


Figure 1. Single MYSE captured during the blitz. Team leader Mary Frazer captured this adult male on June 6 at a site on ARNWR.



Figure 2. One of several MYAU captured during the blitz, this one by Katherine Etchison on Lower Roanoke River Wetlands Game Land. (Photo by Kristi Confortin)

2019 SBDN BAT BLITZ

The reasons for holding the 2019 blitz in this area were to better understand the distribution and habitat associations of Species of Greatest Conservation Need on the Albemarle Peninsula, and to establish long-term bat mist-net monitoring sites to develop baseline data and track subsequent trends in bat populations, in light of WNS, wind energy development, and other threats. And, those goals were met.



Figure 3. One of the Rafinesque's Big-eared Bats captured during the blitz. (Photo by Ed Corey)



Figure 4. Kristi Confortin and Katherine Etchison band bats during the SBDN Bat Blitz (photo by Kevin Parker).

2019 SBDN BAT BLITZ

Additionally, this annual event allowed for comradery among far-flung friends who typically see each other once or twice a year. And so, traditions continue.



Thanks to all who helped make the 2019 SBDN Bat Blitz a success. The hosts could not have done this without the help and support from many.

State Updates

Submit Your State Updates

Thank you for your submissions! We love reading about all of the research and outreach you are conducting in your regions. From those regions that didn't contribute this year, we look forward to hearing from you for next year's state updates.

Send in your reports and photos anytime from the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Send summaries and photos to nightwingnews@gmail.com

Alabama

Allison Cochran
Wildlife Biologist
Forest Service
Bankhead National Forest

The Alabama Bat Working Group and the Alabama Chapter of the Wildlife Society in conjunction with the Talladega National Forest, Shoal Creek Ranger District held the Bats and Forests Workshop at the Cleburne County Mountain Center on the Shoal Creek Ranger District.

More than 70 professionals attended the professional development workshop to learn about federally listed bats found in Alabama, including on our National Forests and surrounding landscapes. Foresters, wildlife biologists, fire managers and other natural resources professionals learned how to include best management practices for bats in their land management plans and prescriptions. They also learned about consultation requirements with the U.S. Fish and Wildlife Service and programs available for private forest landowners through the U.S. Department of Agriculture Natural Resources Conservation Service.

The attendees participated in a field trip to the Shoal Creek Ranger District to see Indiana and Northern long-eared bat roost trees in a managed, working forest that is also managed for the federally listed Red-cockaded Woodpecker. Participants enjoyed an educational program on bats featuring a live, captive, big brown bat. The field trip created an opportunity for participants to also learn about research conducted on the Shoal Creek Ranger District related to listed bat habitat and effects of fire on that habitat.



Alabama



NEWS ALERT!!!

Planning for SBDN's 2020 Annual Bat Blitz is in full-swing, with this year's events featured at the Bankhead National Forest in northern Alabama, from August 3-7, 2020. Details can be found on our website here: <https://sbdn.org/bat-blitzes-2/>.

Blitz headquarters will be at Camp McDowell in Nauvoo, Alabama, (<https://campmcdowell.com/conference-center/accommodations>) and we welcome up to 100 bat biologists, wildlife professionals, and volunteers to attend this year's event. This year's SBDN blitz represents some important benchmarks for bat conservation in Alabama. Not only will this year mark the 20th anniversary of state bat blitzes in Alabama, this year's 2020 SBDN blitz will be an exact reboot of netting sites surveyed in 2008, six-years before the detection of white-nose syndrome. We will compare 2020 captures from this year's blitz (six years after white-nose syndrome) to captures in 2008.

Special thanks to the U.S. Forest Service, our blitz hosts, for all their hard work. Stay tuned in the coming weeks for registration information.





Blake Sasse
AR Game and Fish Commission

Recycled utility poles offer endangered bats refuge

In September crews from Craighead Electric Cooperative, the Arkansas Game and Fish Commission, Arkansas State University, SWCA Environmental Consultants, and the U.S. Fish and Wildlife Service's Arkansas Ecological Services Field Office placed special surrogate structures on Shirey Bay Rainey Brake Wildlife Management Area to encourage the continued use of the area by Indiana bats, an endangered species native to Arkansas.

Earlier this year, the only currently known maternity roost in Arkansas was identified on the WMA, but researchers feared the tree where the roost was located would be at risk for falling during storms. They also wanted to offer increased roosting opportunities for other Indiana bats to help in the recovery of the species. After coordinating with many partners, biologists developed a plan to help ensure long-term survival of the colony.

New roosting structures were created with used utility poles, donated by Craighead Electric Cooperative. Craighead Electric also donated labor and the use of a special track auger to dig and place the pole. The poles were made more usable for the bats by scoring the sides so bats could grip them more easily and covering them in BrandenBark. This artificial bark is used in zoos and theme parks. Three sheets of the material were donated to this project by The Nature Conservancy. The resulting structure should last much longer than the deteriorating tree where the bats have been roosting.

The maternity colony was located at Shirey Bay as a result of a separate project sponsored by the U.S. Fish and Wildlife Service, U.S. Forest Service, Arkansas Department of Transportation, Arkansas State University, and the Commission. Female Indiana bats were captured in April at a cave they used for hibernation in Newton County and one was followed as she migrated eastward across the Ozarks and finally settled down at Shirey Bay Rainey Brake WMA. Later, teams from ASU and Copperhead Consulting captured more bats and tracked them for several weeks while they foraged for insects on the WMA.

Experiments at Fort Knox Military Installation in Kentucky and other known summer roost sites have shown very promising results by using structures similar to those used in the Shirey Bay Rainey Brake Project.



*Photo credit:
Blake Sasse*

Tommy Inebnit (left) and Blake Massey (right) placing artificial bark on a telephone pole.

Florida

Lorraine “Rain” Ketzler, AWB
USFWS Liaison to Hurlburt Field, FL
1 SOCES/CEIE, Natural Resources

The USFWS and USAF continue to study the tri-colored bat (PESU) at the Hurlburt Field and Eglin AFB in Florida.

USFWS, in partnership with the USAF, is surveying bridges and culverts on Hurlburt Field and Eglin AFB to assess tri-colored bat (*Perimyotis subflavus*, PESU) occupancy in structures. We're using d500x acoustic devices and SonoBat to view recorded acoustic call files, and we're using IR cameras to video record bats leaving the structures at sunset. We will be conducting surveys through this winter when PESUs are more likely to be using these structures. We hope that understanding which structures PESUs are using will help the USAF to schedule maintenance and repairs to structures when impacts to bats can be minimized. This is important for us as natural resources managers because we'd like to minimize impacts to the military mission while conserving natural resources, particularly petitioned species.



Acoustic device deployed near a box culvert on Eglin AFB.



Jeff Van Vranken and Sinead Borchert set up an IR camera to record bats exiting a box culvert on Eglin AFB.



Lisa Smith & Liz Braun de Torrez
Florida Fish and
Wildlife Conservation Commission

First Bat Outreach Booth at FWC's Marine Quest – Lisa Smith & Liz Braun de Torrez, Florida Fish and Wildlife Conservation Commission

Florida Fish and Wildlife Conservation Commission (FWC) biologists attended the 25th Annual Marine Quest this fall and set up the first ever interactive bat display for attendees to learn about Florida's bats. Biologists constructed a cave on site and instructed students (grades 4th- 8th) on how to conduct their very own bat survey for 3 species of cave-roosting bats. Students also learned about the importance of bats and the dangers of WNS.



The Batacombs Outreach Cave



**Florida Bonneted Bat Microclimate Study Underway –
Lisa Smith & Liz Braun de Torrez, Florida Fish and Wildlife Conservation Commission**

This April, FWC biologists started a project to evaluate the microclimate inside bat houses used by the endangered Florida Bonneted Bat (*Eumops floridanus*). Biologists deployed small HOBO temperature loggers into bat houses to determine if bat houses are reaching temperatures that may place bats at risk of overheating or freezing. This information is crucial for understanding how these bats respond to temperature fluctuations throughout the year, and informing management strategies for the species.

FWC biologist climbs up to bat house to deploy a HOBO data logger

Florida

Lisa Smith
Florida Fish and Wildlife
Conservation Commission

White-nose Syndrome Monitoring and Surveillance – Lisa Smith, Florida Fish and Wildlife Conservation Commission

FWC biologists surveyed 30 caves and over 200 culverts last winter to monitor Florida's cave roosting bats and complete surveillance efforts for *Pd*. No physical sign of WNS was observed on any of the roosting bats and all sites swabbed for the fungus came back negative for *Pd*. Florida appears to be safe from WNS for another year. Last year, many of Florida's caves in the panhandle were hit hard by Hurricane Michael. Despite the extensive destruction topside, overall numbers of tri-colored bats within the caves remained stable. Ongoing USFWS funding support will enable us to continue monitoring and research efforts this upcoming winter so that we can evaluate trends in Florida's cave bat populations.



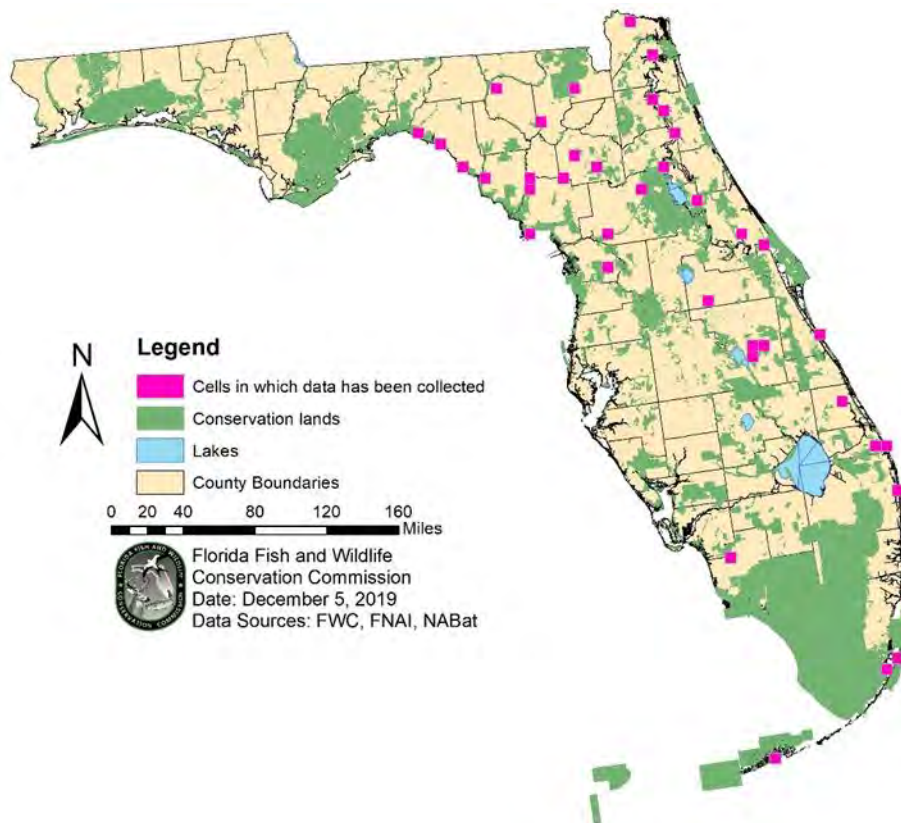
Healthy tri-colored bat roosting in a Florida cave

Florida

Katie Teets
Florida Fish and Wildlife
Conservation Commission

Florida's Long-term Bat Monitoring Program turns 1! – Katie Teets, Florida Fish and Wildlife Conservation Commission

In November 2019, Florida's Long-term Bat Monitoring Program (LTBMP) officially turned 1 year old! Within the first year of this statewide, SWG-funded program, we collaborated with 61 partners from several different organizations, collected data in 45 cells, established 102 stationary points and 3 mobile routes, and collected over 1 TB of data. During the next year, we will continue to expand this program into underrepresented regions of Florida, bring on new partners, design a website to establish an internet presence for the LTBMP, and continue to share data with NABat. The LTBMP creates a network for coordinating the sharing of resources, accessing instructional information and protocols, and designing a data analysis workflow for all participants. Through the LTBMP, FWC biologists and partners are collecting new information on bat species throughout the state that will be used to identify potential threats to bats, detect changes in the status of bat populations, and understand the role of land management activities on bat communities.



Map of cells in which data has been collected for the Long-term Bat Monitoring Program across the state of Florida.



Megan Wallrichs
Florida Fish and Wildlife
Conservation Commission

Tracking Tri-Colored Bats in Winter Habitat –Megan Wallrichs, Florida Fish and Wildlife Conservation Commission

Winter 2018-19 acoustic surveys revealed unexpected levels of tricolored bat activity in Osceola National Forest (ONF). The Forest is in northern Florida along the Georgia state line and is characterized by wet pine flatwoods and swamps and lacks open-air caves found in other parts of the state. Because tricolored bats are well-documented using caves to overwinter in the panhandle and in west-central Florida, biologists were interested in locating winter roosts in this area with less-exposed karst features (i.e. no caves). In November 2019, biologists tracked 4 tricolored bats to 5 roosts. All roosts were located in Big Gum Swamp Wilderness Area of ONF in bald cypress (*Taxodium distichum*) and black gum (*Nyssa sylvatica*) trees, likely roosting in epiphytic *Tillandsia spp.* on the tree trunks and branches. More roost-finding efforts will continue in January 2020.



A large bald cypress roost in ONF. Tracking indicated the bat was high in the Spanish moss-covered canopy



A tri-colored bat with a transmitter



Emily Ferrall

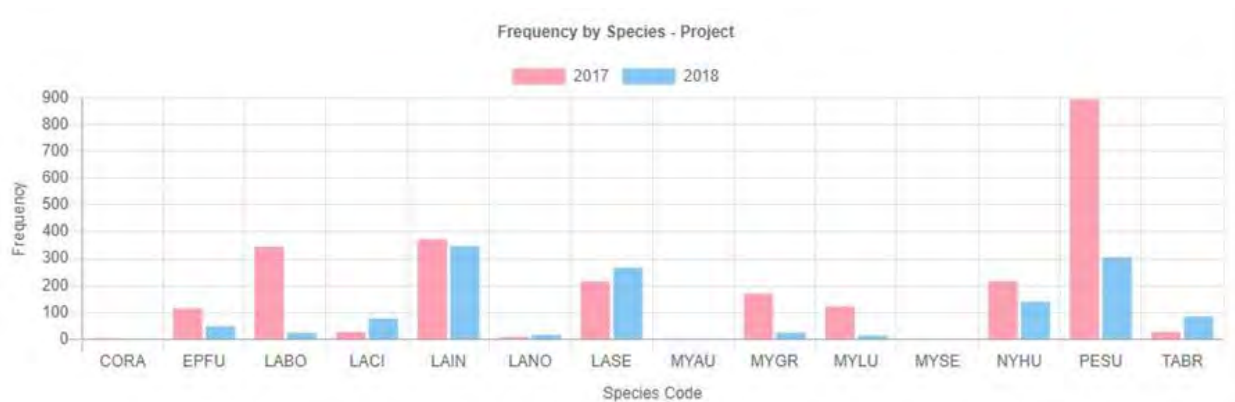
Wildlife Technician, Wildlife Conservation
Wildlife Resources Division
Georgia Department of Natural Resources

Anabat Routes

Georgia had many acoustic routes being run this year across the state; continuing work started years ago for many of these routes ([http://georgiawildlife.com/Anabat Project](http://georgiawildlife.com/Anabat%20Project)). Most of the routes were completed during the 2019 season, but analysis is just beginning for this season. Results from 2014 are available on the website listed above. We just finished analyzing our 2018 results and will have those result posted on our website soon.

NA Bat

Georgia continued to run NABat routes that were begun in 2016, and this year they began running many new routes that were developed in 2017/2018. They sampled 13 sites this year selected the 30 cells we will use for sampling across the state. Directions for routes were created for all cells. Most of our data through 2018 has been uploaded to the NABat website, with only a few years missing. We are working to get the 2019 data processed and uploaded as well!



Screenshot of frequency of species calls from the NABat website with data currently submitted.

UGA Grad Student

UGA PhD student Jack Grider completed the field work for his joint project between UGA and GA DNR in 2017. He has since been working on creating a distribution map for *Myotis septentrionalis* to refine their range in Georgia. This new range was used to influence the species consultation ranges used by the USFWS in Georgia.



Emily Ferrall

Wildlife Technician, Wildlife Conservation
Wildlife Resources Division
Georgia Department of Natural Resources

Bats in Bridges

The Georgia Department of Natural Resources organized three bats in bridges training classes for GDOT and private consultants and participated in filming for a video training to be provided by the USFWS. The purpose of these classes was to teach individuals how to detect and properly survey for bats in bridges to obtain accurate information on these roosts. These classes were a huge success, and we have already gotten requests for further similar trainings, so this is something GA DNR will be continuing in the years to come.

Coastal Plain Culvert Sampling

In 2017 the Georgia Department of Natural Resources, in conjunction with Kennesaw State University, began sampling culverts in the coastal plain of the state to look for bat presence, and to determine use by Tri-colored bats. This effort was met with many successful bat discoveries, including a culvert with over 100 tri-colored bats and one Gray bat. GA DNR plans to continue this survey monitoring into the future, focusing especially on areas near karst in north Georgia.

This research aims to address the knowledge gap regarding tri-colored bat ecology in Georgia by surveying transportation structures such culverts for bat presence. Additionally, we are collecting swabs of the animals and substrate to test for the presence of *P. destructans*. During the 2018-2019 hibernation season we surveyed 87 culverts in Georgia, and 41 of these structures had at least one bat present. The most common species encountered were *Perimyotis subflavus* and *Myotis austroriparius*. Bat presence, species and location within the culvert was recorded. We collected over 100 swabs and will use qPCR (quantitative polymerase chain reaction) to determine fungal presence and burden.



Tri-colored bats in a Georgia culvert.

Photo by Emily Ferrall.



Emily Ferrall

Wildlife Technician, Wildlife Conservation
Wildlife Resources Division
Georgia Department of Natural Resources

White Nose Syndrome Winter Monitoring and Surveillance

As with previous years, we do not have the manpower with our biologists throughout the state to monitor every cave in the state every year. We are continuing to ask for caver volunteers from around the state to assist with WNS winter monitoring and surveillance. We ask these volunteers to submit a survey form, even if bats are not present. If there are bats present, then we ask those volunteers with swab kits to collect samples for us. More information on this project can be found here: <http://georgiawildlife.com/WNS>. We could not conduct the monitoring that we do without the help of these volunteers!

This year, total bat numbers in all yearly monitored sites with previous declines were down 93% from the previous high counts, which is the same as the previous years counts, but a smaller portion of surveys were done this year compared to normal. No *Myotis* bats were observed in caves besides *Myotis grisescens*. *Myotis* bats have had lower numbers in Georgia caves compared to our most abundant cave species, *Perimyotis subflavus*, but we are now seeing declines in both of these groups. This decline in tri-colored bats being documented during summer mist-net surveys and acoustic monitoring work. The GA DNR social media staff has worked hard to create an interactive page for the public to view regarding WNS, and this also contains the link to our yearly cave report. That page can be found here: <https://georgiawildlife.com/WNS>

TAG Fall Cave-In

Education about bats and WNS continues to be a focus for GA DNR. We attended the Fall TAG Cave-In once again this year to provide information about WNS and decontamination protocols. We had 'Save Our Sky Puppies' stickers; which were a huge success! This booth is a popular stop for event attendees, and it allows us to spread the most current knowledge we have on bats and WNS in the southeast.



*GA DNR technicians and biologists entering a north Georgia cave.
Photo by Trina Morris*



GA Bat Working Group (<http://www.gabats.org/>)

Bat Blitz 2019

This year the Georgia Bat Working Group did not have a bat blitz. They have one planned for 2020 on the Georgia coast October 9-11! Visit the GA Bat Working Group Webpage (<https://www.gabats.org/news-and-events/>) for more information.

GBWG board members:

Laci Coleman, GA DNR, laci.coleman@dnr.ga.gov - Chair

Emily Ferrall, GA DNR, emily.ferrall@dnr.ga.gov – Secretary

Maggie Hunt GA DNR, aduddell.ma@gmail.com- Treasurer

Pete Pattavina USFWS, pete_pattavina@fws.gov - Board

Chris Cornelison, Kennesaw State University, ccornel5@kennesaw.edu - Board

Trina Morris GA DNR, katrina.morris@dnr.ga.gov - Board

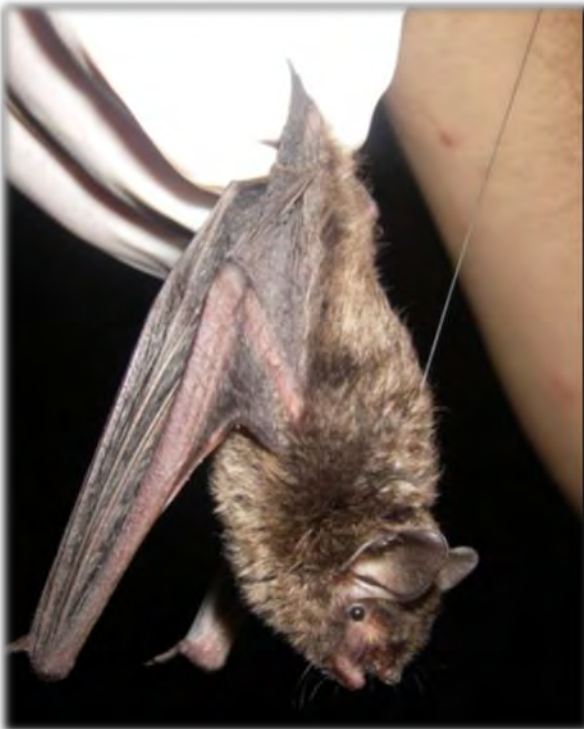
Nikki Castleberry, GA Museum of Natural History, neotoma@uga.edu – Board

Kentucky

Copperhead Environmental Consulting

Copperhead has been monitoring the bat populations located on base in Fort Knox, KY for the past 15 years. In this time, we have conducted a variety of studies including standard mist-net surveys, roost monitoring, and radio-telemetry studies on summer foraging behavior.

Throughout the years, we have banded 1,432 individuals, including 235 recaptures. We have also deployed 200 transmitters, 174 of which were attached to Indiana bats while the remaining 26 were attached to a mix of little browns (*Myotis lucifugus*), northern long-eared bats (*Myotis septentrionalis*), tri-colored bats (*Perimyotis subflavus*), and one hoary bat (*Lasiurus cinereus*).



These tracking efforts have led us to identify three independent Indiana bat summer maternity colonies on base. We have installed a total of 22 BrandenBark™ structures between two of the colonies and plan to install 4 more in the next year. During these studies we have recorded the four largest Indiana bat roost emergence counts within the range of the species (n=407, 427, 451, and 475). We are currently compiling and analyzing all 15 years' worth of data with plans to release population size and range details in the near future.

Kentucky

James Kiser

Stantec Environmental

2019 Kentucky Bat Working Group (KBWG) Annual Meeting

James Kiser – Out-going President

The Kentucky Bat Working Group Annual Meeting was held at Carter Caves State Resort Park on October 17 & 18. This meeting wouldn't have been possible without the generosity of our sponsors, including Apogee Environmental & Archaeological, Atwell, Biological Systems Consulting, Copperhead Environmental Consulting, Environmental Solutions & Innovations, Harrod Concrete and Stone Company, HMB Professional Engineers, Redwing Ecological Services, Stantec Consulting Services, SWCA Environmental Consultants, and Third Rock Consultants (See Thank You Photo below). This year's meeting was attended by 52 bat enthusiasts representing environmental consultants, state and federal agencies, non-profit groups, academia, and private industry. Attempts by about 30 meeting participants to capture Indiana bats at a known hibernaculum containing nearly 15,000 bats failed miserably due to unseasonable cold weather, sunset temperature around 49°F. After failed attempts to see Indiana bats, the drinks and snacks provided by KBWG sponsors at the evening social warmed participants up and turned frowns to smiles. On Friday, meeting participants were enlightened and entertained by 13 oral presentations, including 5 student papers. The five student papers were excellent and provided challenges for the judges in determining this year's (2nd annual) "Best Student Paper Award". With the generous support of our sponsors this year, KBWG was able to award \$150 to Ms. Michaela Rogers (Eastern Kentucky University) for her presentation entitled "**Recapture trends in WNS-impacted maternity colonies of Indian bats in Kentucky**". In an attempt to help with travel expenses and to encourage future student presentations, KBWG decided to provide a \$50 travel grant to each of the five student presenters, including Michaela Rogers (EKU), Emma Fehlker Campbell (Murray State University), Sam Holst (Murray State University), Courtney Hayes (EKU), and Ash Cable (Eastern Illinois University).



Student Presenters At the 2019 Kentucky Bat Working Group Meeting

Kentucky

James Kiser

Stantec Environmental

Business meeting items discussed included a follow-up of past discussion items. The first of these items included the Coach and James Cave Systems cleanup, primarily removing old decaying wood material left from previous commercialization activities. Action was not taken on this item by KBWG during 2019 because additional information was requested about the presence of endemic cave beetles that may be using the woody debris in these cave systems. Spring Cave trapping was previously attempted but canceled due to inclement weather. This activity is a priority for spring 2020 and may occur somewhere on the Daniel Boone National Forest. Other items discussed included the establishment of a Life-time Achievement Award for persons contributing significantly to bat conservation in the Commonwealth, and the development of KBWG tee shirt design. Southeast Bat Diversity Network's (SBDN) Treasurer, Luke Dodd (Eastern Kentucky University), provided a positive financial report showing enough operating capital to host future meetings without any additional incoming funds. New Board members were introduced to the meeting participants, and these future board members include the following:

President – Zack Couch (Kentucky Department of Fish and Wildlife Resources)

Past President – James Kiser (Stantec Consulting Services)

Secretary – Todd McDaniel (HMB Professional Engineers)

Consultant Representative – Rain Storm (Third Rock Consultants)

Student Representative – Ash Cable (University of Tennessee)

At Large Representative – Courtney Hayes (Kentucky Office Nature Preserves)

Academic Representative – Terry Derting (Murray State University)

State Government Representative – Andrew Logsdon (Kentucky Transportation Cabinet)

Federal Government Representative – Santiago Martin (U.S. Fish and Wildlife Service)

As the out-going President, I would like to thank everyone for making the past two years a success. We as a group continued to provide opportunities for members to capture bats and exchange information. Our Bat blitz's have gained a great reputation and attracted bat enthusiasts from as far away as Pennsylvania, northern Ohio, and Bloomington, Indiana. Our great sponsors have allowed us to continue to provide meetings at no cost, and award financial incentives to student presenters. In closing, I would like to thank everyone for helping protect and manage the Commonwealths Bats.

Michaela Rogers receives Best Student Presentation Award



Kentucky



James Kiser Receives an Appreciation Award For His Dedication to KBWG



Mississippi

Mississippi Bat Working Group
Becky Rosamond

Second Cave Gating in Mississippi!!

A second cave in Wayne County was gated in August 2019. This cave is used by over 600 tri-colored bats and a few southeastern myotis in the winter months. Additionally, it is used by a small maternity colony of southeastern myotis during spring and summer. This cave was gated to prevent unwanted guests from carving in the cave walls, throwing mud pies at the bats, and littering beer bottles throughout the cave. The cave is located on Rayonier property. Wildlife Mississippi used allocated funds from the U.S. Fish and Wildlife Service to contract with Kristen Bobo to gate the cave. They also hired EcoRestore to haul in the steel as well as to treat the surrounding forest for kudzu. This was a great example of multiple partners working together to accomplish a common goal



Completed gate (photo by K. Cross)



The gating team (photo by R. Smith)

Third Annual Culvert Blitz

In a continuing effort to monitor winter populations of bats in Mississippi, the Working Group held its third annual culvert blitz January 4 – 6, 2019. Culverts were primarily associated with interstate highways and major (4-lane) state highways, with routes (typically consisting of 8 – 12 culverts) spread across the state.

Thirty-four volunteers ran 16 routes and checked 212 culverts. Of the inspected culverts, 106 had bats present. A total of 1,188 bats were found representing five species, with the tri-colored bat accounting for approximately 80% of the observations (948 individuals). Other species detected (in order of abundance) include southeastern bats (146), big brown bat (56), Brazilian free-tailed bat (32) and Rafinesque's big-eared bat (2). In 2019, all new volunteers were provided more formal training and the majority were paired with experienced surveyors. The group plans to continue this blitz annually. Dates for the 2020 blitz are January 3 – 5. Contact the Mississippi Bat Working Group (msbats@hotmail.com) for more information.

Mississippi



Annual Meeting and Mist Net Event



Above: Tri-colored bats roosting in iron deposits
Right: Tri-colored bats covered in condensation roosting in ceiling crevice with a southeastern bat.
Photos by B. Rosamond

The MBWG met for their 17th Annual Meeting at the Mississippi Museum of Natural Science in Jackson Mississippi on March 28th. The meeting featured presentations on current research occurring in the state, updates on various monitoring activities, and discussion of upcoming events. Tami Hudson of Possum Hill Wildlife Rehabilitation and Bat Education was the guest speaker and provided recommendations on how to handle calls from the public regarding bats. Jackie Henne-Kerr received the Education/Outreach Award and James Austin and Kathy Shelton received Research/Conservation Awards for their coordination of the first cave gating for bat conservation in the state.

The Sixteenth Annual Mist Net Event was held September 24 - 26 in Louisville, MS. Twenty-five attendees surveyed eight sites on the Tombigbee National Forest (4 sites) and Noxubee National Wildlife Refuge (4 sites). A total of 21 bats of six species were captured (see table below). During the day on Wednesday, participants visited a Rafinesque's big-eared bat roost in an abandoned house and a second roost in a tree. Several participants also took advantage of the opportunity to canoe Bluff Lake on Noxubee NWR. The group held a brief business meeting before netting Wednesday evening.





Mississippi Bat Working Group
Becky Rosamond

Annual Meeting and Mist Net Event

We would like to thank the following:

Event hosts - Sam D. Hamilton Noxubee National Wildlife Refuge and the Tombigbee National Forest,

Sponsors - Chester O. Martin and
Environmental Solutions and Innovations, Inc.,

Team leaders - Chazz Coleman, Katelin Cross,
Amber Floyd, Nicole Hodges, Eva Kristofik, Chester Martin, and Kelly Morris,
and all our participants!

Captures during the 16th annual mist net event on Tombigbee National Forest and Noxubee National Wildlife Refuge.

	Tombigbee	Noxubee
Rafinesque's big-eared bat		1
Red bat	4	4
Seminole bat	1	
Southeastern bat		2
Evening bat	2	4
Tri-colored bat	1	
Unknown (escaped)	1	1



Rafinesque's big-eared bats in roost near Noxubee National Wildlife Refuge (left); Checking a roost tree – southeastern myotis and Rafinesque's big-eared bats were observed roosting (right)



Mississippi Bat Working Group

Becky Rosamond

Outreach and Education

Members of the group presented educational programs and invited talks throughout the state at schools, festivals and to various civic organizations, reaching over 2,000 individuals across the state. Additionally, the MBWG staffed booths at NatureFest (Jackson), DeSoto Earth Day BioBlitz, Choctaw Wildlife Jamboree, Audubon Hummingbird Festival (Strawberry Plains, Holly Springs), Wildlife Outdoor Learning Festival (Noxubee National Wildlife Refuge, Louisville), and Park after Dark (Jackson). Some highlights from 2019 include:

- Development of a mist net simulation which provides an interactive platform to use at outreach events.
- Mist-netting demonstrations at the DeSoto Earth Day BioBlitz, Lee Tartt Nature Preserve, and Strawberry Plains Audubon Center.

Members involved in education and outreach include: Katelin Cross, Amber Floyd, Nicole Hodges, Jackie Kerr, Chester Martin, Alison McCartney, Kelly Morris, Becky Rosamond, Kathy Shelton, and Deb Waz.



Left – Alison McCartney talks to students at East Rankin Academy about bats.

Right – Participants at mist-netting demonstration (Strawberry Plains) gather around for a close-up view of a red bat



Mississippi Bat Working Group

Becky Rosamond

Other Items of Note

Chester Martin, founder of the Mississippi Bat Working Group, was awarded the SBDN Lifetime Achievement Award in February.



Chester Martin (center) with MBWG members Becky Rosamond, Kathy Shelton, Alison McCartney, and Darrin Miller after receiving his lifetime achievement award.

Attendance at the annual meeting of the Mississippi Bat Working Group can now earn you 5 hours towards The Wildlife Society's Certified Wildlife Biologist certification.

Upcoming Events

Culvert Blitz – throughout the state, January 3 – 5, 2020.

Annual Meeting – Mississippi Museum of Natural Science, February 6, 2020.

Mist Net Event – location and date to be determined, Fall 2020

Watch our website (msbats.org) for updated information or follow us on Facebook!



Katherine Etchison

Wildlife Diversity Biologist

North Carolina Wildlife Resource Commission

Record Number of Little Brown Bats Caught in Avery County in Wake of WNS

The North Carolina Wildlife Resources Commission's long-term bat surveys have been instrumental in determining impacts of white-nose syndrome (WNS) since its detection in the state in 2011. Mist-net captures have declined dramatically in the Mountain Region (92% for little brown bats, 85% for northern long-eared bats, 73% for Indiana bat, 68% for tricolored bats) except for at one net site in Avery County. In July, little brown bat presence was documented at this site for the fourth consecutive year. Eight little brown bats were captured during the survey, which is a record high in the state for the years following WNS arrival. The most exciting capture was a juvenile little brown, which is the first captured at this site since 2011. Plans are being made to conduct radio-telemetry efforts on this survivor population in 2020 to better understand the colony. Little browns were not caught during any other Mountain survey this year, so this site stands out as an important area for the species.

For more information on NCWRC bat surveys and other nongame work, check out the [Wildlife Diversity Program Quarterly Reports](#).



Figure 1. A little brown bat caught in a mist net in Avery County (photo by Katherine Etchison)

North Carolina

Heather Wallace

Environmental Services Group Manager

I got an interesting call from one of our survey crew leaders, saying, “we found a bunch of bats inside a manhole. Can you come take a look?” I wasn’t expecting much; probably a handful of big brown bats. I met him on site on May 24, 2019. To my surprise, when he pulled the cover off I saw a south-eastern myotis maternity roost! More than 200 bats (adults and hairless pups with eyes still closed) were counted roosting on the walls of the riser. All the bats appeared healthy. This species is not well-documented in the Piedmont of NC, and no maternity roosts are currently documented anywhere in the state. Bats turn up in the strangest places, and this was definitely a pleasant surprise for me.





Mary Frazer

Biologist/Project Manager
Three Oaks Engineering

The N.C. Bat Working Group met in November at the N.C. Zoo. One of the items on the agenda was soliciting volunteers for a culvert survey blitz, which is being coordinated by the N.C. Wildlife Resources Commission and will be held this winter. Volunteers will inspect culverts for bats with the goals of 1) finding more information about where bats in eastern NC spend their winters, collecting data about Species of Greatest Conservation Need, and 3) swabbing for WNS, which has not been found in the NC coastal plain yet.



North Carolina

Aiding the northern long-eared bat

Service and partners team up in battle against deadly white-nose syndrome

By Gary Jordan, Fish and Wildlife Biologist, Raleigh, North Carolina, Field Office November 19, 2019

Bats provide valuable ecosystem services that impact the world's economy and our lives. They pollinate cash crops and forests, disperse seeds, produce fertilizer and control pests by devouring insects. Many bat species are in decline, however, due to habitat loss and disease, especially white-nose syndrome (WNS).

The Service has been working with partners promoting conservation, research and innovation to fight back at the national level. In the eastern half of the U.S., the northern long-eared bat (NLEB) has seen severe population declines due to white-nose syndrome (WNS), a disease that kills bats by increasing the amount of energy they use during winter hibernation and by creating physiological imbalances that can inhibit normal body functions.



North Carolina

Frankie Tousley

M.S. Student, Dr. Joy O’Keefe Lab
Center for Bat Research, Outreach, and Conservation
Indiana State University

The Center for Bat Research, Outreach, and Conservation at Indiana State University is nearing the end of a 2-year study on gray bats (*Myotis grisescens*) in western North Carolina. The project, funded by the NCDOT, has employed acoustic sampling, radio telemetry, and randomized bridge surveys to understand the distribution, movement, and habitat use of gray bats within the French Broad River Basin. Western North Carolina’s lack of natural caves appear to prevent it from hosting gray bats throughout the winter months, but some bat populations emerge from their Tennessee cave hibernacula, and migrate south to roost in North Carolina transportation structures from March through October. In North Carolina, large colonies of gray bats day roost at multiple concrete bridges and culverts, where they will occasionally cohabitate with big brown (*Eptesicus fuscus*) and Mexican free-tailed bats (*Tadarida brasiliensis*). Between 20–25% of gray bats captured at roosts in mid-to-late July were either juveniles or post-lactating females, so there is potential that bridges and culverts in North Carolina act as maternity sites. Based on our radio telemetry surveys, gray bats were discovered to make the flight from their North Carolina bridge roosts to Tennessee caves as rapidly as in a single night—a distance greater than 50 miles! Gray bats primarily commute on waterways, and the French Broad and Pigeon rivers serve as the two main routes connecting roosts in North Carolina and Tennessee. We tied North Carolina summer bat populations to a known gray bat hibernaculum in Cocke County, Tennessee, and in 2019 to a known summer cave roost on private land in Greene County, Tennessee. Aerial telemetry also tracked foraging bats from North Carolina to Tennessee. Automated telemetry and acoustic recording stations continue to collect data, and will soon reveal bat activity throughout the French Broad River region. The detectable signs of White Nose Syndrome in gray bats amplified in 2019 over 2018. In April 2018, we saw no bats with wing damage index scores greater than 1; in April 2019, ~ 5.4% of captured gray bats had wing damage index scores of 2 or 3.



Photo of gray bat (*Myotis grisescens*). (photo by Ellen Pierce)

Oklahoma

Melynda Hickman

Wildlife Diversity Biologist

OK Department of Wildlife Conservation

Bat Acoustic Surveys on Wildlife Management Areas in Oklahoma (submitted by Melynda Hickman, Wildlife Diversity Biologist, OK Dept. of Wildlife Conservation)

The Wildlife Diversity Program has established a long-term bat acoustic survey program for Wildlife Management Areas (WMAs) after researching bat acoustic survey protocols and reviewing other State's bat acoustic survey methodologies. Acoustic surveys are cost effective and are widely used for describing bat occurrence and activity patterns and are increasingly important for addressing concerns for habitat management, wind energy, and disease on bat populations. They are also a non-invasive method and allow for monitoring multiple bat species simultaneously at a large spatial scale. This methodology is also in keeping with the OK Department of Wildlife Conservation's Recommendations and Suggested Best Management Practices to Address White-nose Syndrome in Oklahoma.

Due to their compactness and high-quality recordings and analysis, the decision was made to use Wildlife Acoustics' Echo Meter Touch™ module and software for the bat surveys. Each unit includes an iPad mini and an Echo Meter Touch™ module. This program would not be possible without the continued support and funds through the Oklahoma City Zoo Conservation Fund.

ODWC recognizes seven distinct Ecological Regions (6 terrestrial Regions and the Large River Ecological Region) as outlined in the Oklahoma Comprehensive Wildlife Conservation Strategy: A Strategic Conservation Plan for Oklahoma's Rare and Declining Wildlife (CWCS). We have now established bat acoustic survey routes in all 6 terrestrial Regions, focusing on the Wildlife Management Areas located in high-priority conservation landscapes within each Region:

Shortgrass Prairie Region:

Beaver River WMA

Mixed-Grass Prairie Region:

Sandsage Shrubland:

Cimarron Hills/Bluff WMAs

Shinnery Oak Shrubland:

Packsaddle WMA

Gypsum Canyonlands:

Sandy Sanders WMA

Tallgrass Prairie Region:

Osage Plains:

Spavinaw WMA

Cross Timbers Region:

Post Oak/Blackjack Oak

Lexington WMA

Bottomland Hardwood

Eufaula WMA – Deep Fork Arm

Ozark Region:

Spavinaw WMA and Ozark Plateau WMA

Ouachita Mountains/West

Gulf Coastal Plain Region:

McGee Creek WMA

The survey methodology was designed for long term monitoring of bat occurrence and habitat association and seasonal activity patterns within Wildlife Management Areas. Established routes driven within WMAs are based on few criteria such as the route should be drivable for most of the year and the route should have cellular data availability for most of the route. It was important that the timing of surveys be flexible and the only requirement for number of surveys is four times a year or once in each season (winter: December – February; spring: March – May; summer: June – August; fall: Sept. – November). Over the two years the surveys have been conducted, the methodology has necessarily been revised based

Oklahoma

Melynda Hickman

Wildlife Diversity Biologist
OK Department of Wildlife Conservation

The results to date have been more than encouraging. Most of the WMAs have now been conducting bat acoustic surveys for at least a year, some for more than 2 years. Though the actual species identification is not as important to the purpose of the survey as to understanding bat occurrence, habitat association and seasonal activity, we have also conducted limited mist-net nights on some of the WMAs. On Cimarron Hills WMA several recorded echolocation calls were identified as Evening Bat (*Nycticeius humeralis*). According to the *Bats of Oklahoma Field Guide*, the Evening Bat had not been validated for northwest or west central Oklahoma. The capture of two Evening Bats (photographed for validation) helped validate the identification analysis of the software used (*Kaleidoscope Pro*TM).



This Evening Bat Captured at Cimarron Hills WMA represents the first documented Evening Bat for Woods County, northwest Oklahoma. (Photo: Jay-T Parrish, Oklahoma City Zoo)



Tony Crawford, Spavinaw WMA technician (northeast Oklahoma), one of the first to join the program. (Photo: ODWC)

The generated GPS maps show general habitat where bat activity is detected. Over time this acoustic data with GPS can help wildlife biologists direct management activities for bats.

The biologists and technicians involved in the program have expressed surprise over the amount of bat activity they are recording on their respective WMAs as well as the number of species identified. They are sharing their enthusiasm with other WMA biologists and we have received numerous requests to participate in this program. To that end our next step will be to purchase additional equipment for more WMAs, along with the cellular data plans needed to tag GPS data to the acoustic files and generate habitat-associated maps.

Tennessee

Liz Hamrick

Terrestrial Zoologist
Biological Compliance
Tennessee Valley Authority



The Tennessee Bat Working Group held their annual meeting at the Henry Horton State Park, Chapel Hill, Tennessee on November 14, 2018. Approximately 60 people attended. Those in attendance included private citizens, students, professors, and university employees (University of Tennessee (Knoxville), University of Tennessee (Martin), Auburn University, East Tennessee State University, Middle Tennessee University, University of Arkansas, Center for Bat Research, Outreach, and Conservation at Indiana State University), federal agencies (Oak Ridge National Lab, US Fish and Wildlife Service, US Forest Service, Tennessee Valley Authority, Arnold Air Force Base, and Fort Campbell), state agencies (Tennessee Wildlife Resources Agency, Tennessee Department of Environment and Conservation, and Tennessee Department of Transportation), consulting firms (Copperhead Environmental Consulting, Stantec, Civil & Environmental Consultants, Inc., BDY Environmental, LLC, AECOM, Skybax Ecological, and Third Rock consultants), and Non-Governmental Organizations (The Nature Conservancy).

Student presenters discussed ongoing research on winter foraging activity of bats, antifungal activity of the cutaneous microbiota of bats, use of Deep Learning to automate identification of feeding buzzes in acoustic recordings, bat use of ephemeral wetlands, and using guano deposits in caves as an archive of paleoclimate data. One student, Mallory Tate, also shared fascinating dilemma encountered by herself and park staff in the Great Smoky Mountains when one of Mallory's study sites, an important hibernacula, was sealed shut when a boulder and debris fell in the opening. She outlined the challenges undergone by federal agencies to balance compliance with Endangered Species Act and the National Park Service Organic Act that prevents the undoing of events that occurred naturally. Also presented was a component of Dr. Piper Roby's thesis looking at torpor-assisted migration of Indiana bats using temperature sensitive radio-transmitters. Additional talks included the White nose Syndrome update for Tennessee. The most recent update from the 2019 cave surveys can be found at www.tnbwg.org.



Tennessee

Tennessee Bat Working Group Cont.

Despite grim news of the spread of WNS across our nation and continued local declines in observations for most of our cave-dwelling bat species, gray bat populations continue to be doing well in the southeast. Other interesting findings from winter surveys include band recoveries: bands recovered on gray bats were an average age of 6.7 years old while bands recovered on Indiana bats were an for bands recovered on gray bats and 7.3 years for bands recovered on Indiana bats. Joey Weber of the Center for Bat Research, Outreach, and Conservation at Indiana State University shared the results of his efforts to find gray bat roosts in North Carolina using



bridge surveys, culvert surveys, and radio telemetry. We also got an update on the landscape model the Natural Conservancy is working on examining gray bat cave connections. Ash Cable was awarded the Best Student Presentation Award for her research of the landscape-level factors influencing Indiana bat conservation efforts while she was getting her Master's Degree at the Eastern Illinois University.

At the business meeting three new board members were elected. Kitty McCracken (Oak Ridge National Laboratory) was re-elected to be a board member and will be joined by the newly elected Sara Samoray of BDY Environmental, LLC, and Dave Pelren from the US Fish and Wildlife Service. Existing board members to remain in place are Scott Hollis (University of Tennessee), and Daniel Istvanko (Tennessee Wildlife Resources Agency). Liz Hamrick (Tennessee Valley Authority) was re-elected to the secretary position.

Tennessee

Spring Migration Copperhead Consulting

Spring 2019 Copperhead assisted The Tennessee Chapter of the Nature Conservancy on a project to address migration behavior of gray bats during spring and investigate migration pathways to determine if any patterns exist. Transmitters were attached to a total of 11 adult female gray bats at Hubbard's Cave on 9, 10, and 15 April 2019. Two of the bats migrated to Ament Cave in the city of Cookeville, TN, and a third bat was tracked to an unknown cave near Dale Hollow Lake in Clay County, TN. One of the gray bats roosted in a green ash tree for a day and subsequently in a culvert in Cookeville, TN before continuing to Ament Cave. The data collected during this study show that female gray bats tend to migrate along relatively straight paths regardless of land type but do show a preference for foraging over water. The number of foraging areas and time spent in each did vary but the overall migration path and direction for all three bats were remarkably similar. This suggests the existence of migration corridors for this species that should be avoided during wind energy development.



Copperhead group photo.

Tagged gray bat.
(photo by Copperhead
Consulting)



Tennessee

Dr. Emma Wilcox

Bat Lab at University of Tennessee Knoxville

Dr. Emma Willcox's Bat Lab at University of Tennessee Knoxville has been busy this year. Ash Cable started a PhD program studying the roosting and foraging ecology of female tri-colored bats (*Perimyotis subflavus*) near large reservoirs. In the coming years, she will be working in TN and surrounding states to address knowledge gaps pertaining to tri-colored bats and other imperiled bat species.

Mallory Tate has been finishing up data collection for her MS project investigating fall swarming and spring staging by two white-nose syndrome (WNS) imperiled bat species, the Indiana bat (*Myotis sodalis*) and tri-colored bat. Mallory hopes to determine the timing of fall swarming and spring staging activity for these two species, as well as to understand roost site selection during these important peri-



ods. In addition, after an entrance collapse at one of her study caves and subsequent decline in bat activity at the site, she is conducting a case study examining bat response to the cave being reopened.

Reilly Jackson, now a PhD student at the University of Arkansas, completed her MS examining the winter hibernation activity of four WNS-susceptible bat species in Tennessee. The results of the project, funded by the U.S. Fish and Wildlife Service and National Park Services, provide possible explanations for some of the differences in WNS susceptibility observed among species, particularly resistance of the eastern small-footed bat (*Myotis leibii*) to the disease. We hope to submit these results for publication soon

Technician Laura Vining confirms the roost tree for a female tri-colored bat captured near Norris Reservoir. The roost was a live sugar maple (*Acer saccharum*).



Sara Waever, PhD, AWB
Biology Lecturer, A&M-San Antonio

Dr. Sarah Fritts at Texas State University is collaborating with NextEra Energy, Texas Christian University, Texas A&M-San Antonio, Bat Conservation International, the National Renewable Energy Lab, the Department of Energy, and NRG Systems to optimize the signal of ultrasonic acoustic deterrents (deterrents). Dr. Fritts and Dr. Sara Weaver (A&M-San Antonio, Department of Science and Mathematics) are co-advising a M.Sc. student, Brittany Stamps, in the Wildlife Ecology program at Texas State. Together with collaborators, they recently constructed a large (L x W x H = 198 ft. x 30 ft. x 14 ft.), open-air flight cage at the Freeman Center owned by Texas State. Using thermal video cameras and acoustic detectors, researchers will use the bat flight cage to observe how species respond to different signal patterns emitted by the deterrents. Results from this project will improve deterrent effectiveness with the intent of minimizing bat fatalities and maximizing energy production from wind turbines.



Figure 1. NRG Systems ultrasonic acoustic deterrent.



Sara Waever, PhD, AWB
Biology Lecturer, A&M-San Antonio



Figure 2.
Flight cage
construction.



Figure 3. Completed
flight cage.



Sara Waever, PhD, AWB
Biology Lecturer, A&M-San Antonio



Figure 4. M.S. student Brittany Stamps and Dr. Sarah Fritts reviewing thermal video footage of a bat in the flight cage.

IN MEMORIAM

Kathy Riggs Shelton

October 16, 1964 – July 17, 2019



A champion of bat conservation passed away in Biloxi on July 17, 2019. Kathy Shelton (54) was a dedicated state biologist who made significant contributions to our knowledge of bats in Mississippi. Kathy was originally from Greensboro, North Carolina and received a B.S. in Wildlife Science from North Carolina State University in 1995 and an M.S. in Wildlife Science from Mississippi State University in 2000. After seven years with the Wildlife Bureau of Mississippi Wildlife, Fisheries, and Parks, mostly dealing with game management on public lands, Kathy transferred to the Mississippi Museum of Natural Science in 2007 and focused on the conservation and management of nongame species, including amphibians, gopher tortoises, and bats.

Kathy joined the Mississippi Bat Working Group (MBWG) in 2007 and served as Vice-Chair of the group from 2012 until her death. She was a key player in planning and coordinating annual meetings and mist net events and greatly expanded our knowledge of bat distribution in the state by targeted mist-netting on state wildlife management areas throughout the state. She provided guidance to other biologists in regards to bat research, management, and conservation. Kathy was instrumental in obtaining grants for cave, bridge, and culvert surveys to determine the occurrence of White Nose Syndrome (WNS) and monitor bat populations. Her proudest achievements, though, were implementing the first cave gating in Mississippi at Pitts/Williams Cave in 2018 and the discovery of the first northern yellow bat in Mississippi since 1937.

Kathy accomplished many things throughout her too-short career—she was active in outreach, published both popular articles and research papers, and served in various leadership roles. However, what she will be missed for the most is her directness and willingness to advocate on the behalf of the resource. These are qualities that can't be replaced. Kathy was a voice and champion for Mississippi's wildlife, especially those less understood and under-appreciated species. As a colleague, mentor, and friend, she will be missed by many.

The Mississippi Bat Working Group is raising funds to place a bench in her memory at the Mississippi Museum of Natural Science in Jackson. Any additional funds will be used to facilitate research and conservation projects in Mississippi. If you would like to make a donation, please visit our website: www.ms bats.org.

Direct link to Kathy's memorial fund: <https://msbats.org/kathy-shelton-memorial-fundraiser/>

Awards and Recognition

SBDN SERVICE AWARD

Purpose: To recognize outstanding service and contributions to the Southeastern Bat Diversity Network.

Nomination Procedure: The SBDN awards committee will call for nominations in September or October of each year through the SBDN mailing list. Nominations will be submitted to the committee by December 1. Nominations can be submitted by any SBDN member, including members of the Executive Committee and the Awards Committee. Nominations will consist of a letter that describes the nominee's service to SBDN. The committee will review the nominations and evaluate them based on significance of the contributions to SBDN. One name will be forwarded to the SBDN Executive Committee for final approval by January 1. If no worthy nominees have been submitted for consideration, no name will be forwarded to the Executive Committee.

Award Process: The awardee will be announced at the SBDN annual meeting, usually held in February. A plaque will be presented to the awardee by the previous recipient or the SBDN president. The Awards committee will be responsible for obtaining the plaque and funds will be provided by SBDN. A copy of the nomination letter and pictures of the award presentation will be deposited in the SBDN archive.

SBDN LIFETIME ACHIEVEMENT AWARD

Purpose: To recognize individuals who have made significant contributions to the conservation of southeastern bats through research, education, or management efforts. The intent of this award is to recognize more senior individuals who have amassed a variety of accomplishments throughout their careers. The award is SBDN's highest honor. The award may not be given every year.

Nomination Procedure: The SBDN awards committee will call for nominations in September or October of each year through the SBDN mailing list. Nominations can be submitted by any SBDN member, including members of the Executive Committee and the Awards Committee. Nominations will be submitted to the committee by December 1. Nominations will consist of: 1) a letter that describes the nominee's accomplishments and how they have impacted bat conservation in the southeast, and 2) the nominee's Curriculum Vitae. The committee will review the nominations and evaluate them based on the totality of the accomplishments and their impact on bat conservation and/or our understanding of bat ecology. The committee will forward one name to the SBDN Executive Committee for final approval by January 1. If no worthy nominees have been submitted for consideration, no name will be forwarded to the Executive Committee.

Award Process: The awardee will be announced at the SBDN annual meeting, usually held in February. A plaque will be presented to the awardee by the previous recipient or the SBDN president. The Awards committee will be responsible for obtaining the plaque and funds will be provided by SBDN. A copy of the nomination letter, the awardees' CV, and pictures of the award presentation will be deposited in the SBDN archive.

History of the Mammal Colloquium and SBDN Meetings

COLLOQUIUM	SBDN	YEAR	LOCATION	HOST
29 th	24 th	2019	Jacksonville, FL	
28 th	23 rd	2018	Roanoke, VA	Joint Bat Working Group Meeting
27 th	22 nd	2017	Asheville, NC	Tim Carter, Mary Kay Clark, Katherine Caldwell
26 th	21 st	2016	Guntersville, AL	Tennessee Valley Authority
25 th	20 th	2015	St. Louis, MO	Joint Bat Working Group Meeting
24 th	19 th	2014	Nacogdoches, TX	Chris Comer
23 rd	18 th	2013	Fall Creek Falls, TN	Brian Carver
22 nd	17 th	2012	Louisville, MS	Darren Miller
21 st	16 th	2011	Louisville, KY	Tim Carter & Brooke Hines
20 th	15 th	2010	Asheville, NC	Mary Kay Clark
19 th	14 th	2009	Jonesboro, AR	Tom Risch & Blake Sasse
18 th	13 th	2008	Blacksburg, VA	Michael St. Germain
17 th	12 th	2007	Destin, FL	Jeff Gore
16 th	11 th	2006	Chattanooga, TN	Tim Carter & Troy Best
15 th	10 th	2005	Paris Landing, TN	John Nelson
14 th	9 th	2004	Helen, GA	Steven Castleberry
13 th	8 th	2003	Mississippi State, MS	Darren Miller
12 th	7 th	2002	Clemson, SC	Susan Loeb
11 th	6 th	2001	Memphis, TN	Michael Kennedy
10 th	5 th	2000	Guntersville, AL	Troy Best
9 th	4 th	1999	Wytheville, VA	Rick Reynolds
8 th	3 rd	1998	Hot Springs, AR	David Saugey
7 th	2 nd	1997	Black Mountain, NC	Mary Kay Clark
6 th	1 st	1996	Somerset, KY	Mike Lacki
5 th		1995	Cookeville, TN	Michael Harvey
4 th		1994	Athens, GA	Joshua Laerm
3 rd		1993	Mountain View, AR	Gary Heidt & Rick McDaniel
2 nd		1992	Guntersville, AL	Troy Best
1 st		1991	Memphis, TN	Mike Kennedy

Upcoming Events



**25th Annual Meeting of the Southeastern Bat Diversity Network
and
30th Annual Colloquium on the Conservation of
Mammals in the Southeastern U.S.**

February 12—14, 2020

**THE CLASSIC CENTER
ATHENS, GEORGIA**

<https://sbdn.wpengine.com/2020-annual-meeting/>



2020 ANNUAL MEETING OF THE NORTHEAST BAT WORKING GROUP (NEBWG)

The Gideon Putnam Hotel, Saratoga Springs, New York

January 14-16, 2020.



2020 ANNUAL MEETING OF THE MIDWEST BAT WORKING GROUP

RUNGE NATURE CENTER, JEFFERSON CITY, MO

APRIL 6—7, 2020



100TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF MAMMALOGISTS.

June 5th – 9th, 2020

BOULDER, COLORADO



27TH ANNUAL CONFERENCE OF THE WILDLIFE SOCIETY

September 27 - October 1, 2020

Galt House Hotel

Louisville, Kentucky



Mississippi Bat Working Group
February 6, 2020
Mississippi Museum of Natural Science, MS

NASBR

North American Society for Bat Research

50th Annual Meeting of the North American Symposium on Bat Research

October 28-31, 2020 Tempe, AZ

Local Hosts:

Angie McIntire - Arizona Game & Fish Department

and

Marianne Moore - Arizona State University

Tempe Mission Palms, Tempe, AZ

Editors Closing Comments



Even though we got off to a slow start
once again everyone stepped up and
we have another great newsletter
I know I say it every issue but it is so true:
None of this is possible without all of you!



Thank You! Thank You! Thank You!



I hope everybody has a truly Merry Christmas,
and will have a most prosperous and productive New Year



Be safe out there and take good notes!

Take good pictures, too!

Have a little fun along the way!

