

22nd Annual Meeting of the Southeastern Bat Diversity Network & 27th Annual Colloquium on the Conservation of Mammals in the Southeastern U.S.

February 16-17, 2017



Renaissance Asheville Hotel-Marriott, Asheville, NC

Vendors

*Thursday – Friday
All vendors are located in Salon A&B*

Apogee Environmental

Bat Conservation and Management, Inc.

Center for Bat Research, Outreach, and Conservation

Copperhead Environmental Consulting

Environmental Solutions & Innovations, Inc.

North Carolina Bat Working Group

North Carolina's Candid Critters

S&ME

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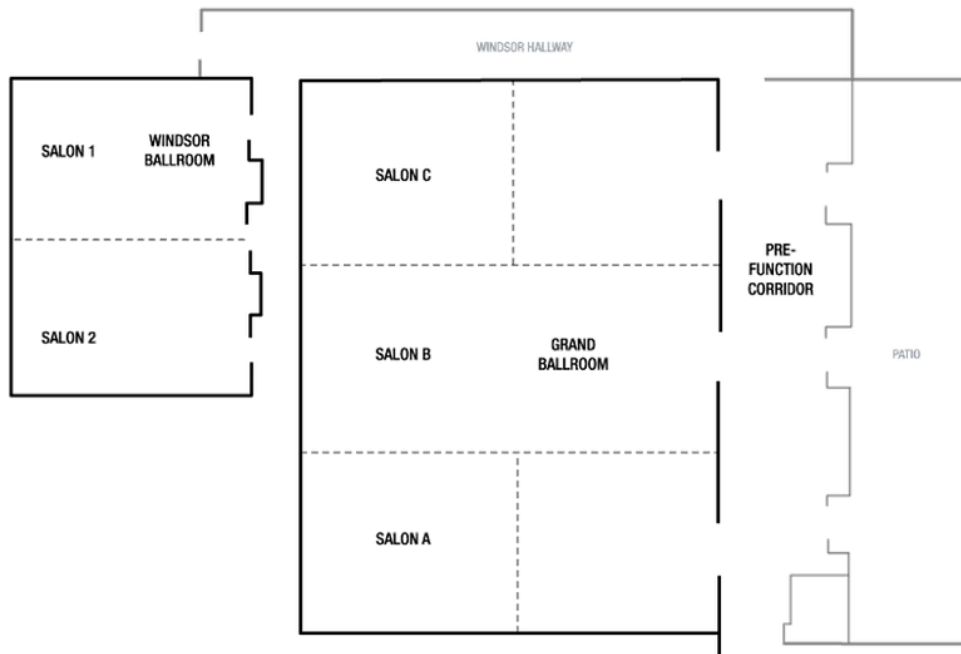
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LOBBY LEVEL



LOCATIONS OF EVENTS

Vendors.....	Salon A & B/C
Oral Presentations.....	Salon A & B/C
Posters.....	Salon C

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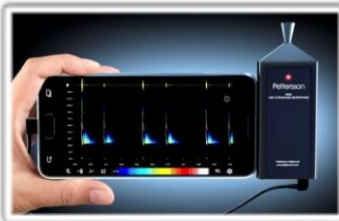
Bat Houses - Low-maintenance plastic shell with wood core, or traditional all-wood



Harp Traps - Use at caves or mines, or to supplement mist-net surveys



Monitoring Tools - Infrared video and thermal camera setups



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CONFERENCE SCHEDULE OVERVIEW

THURSDAY, FEB 16, 2017 - SBDN MEETING AND ASSOCIATED MEETINGS

7:00 a.m.-1:00 p.m.	Registration
7:00 a.m.-12:30 p.m.	Vendor/Exhibitor Setup/Display
8:00 a.m.-9:30 a.m.	SBDN Board Meeting
9:30 a.m.-9:45 a.m.	Plenary Speakers: Alexis and Logan – Bat Squad Members
9:45 a.m.-10:45 a.m.	Rafinesque's Big-eared Bat Working Group
10:45 a.m.-11:00 a.m.	Break
11:00 a.m.-12:00 p.m.	Eastern Small-footed Bat Working Group
12:00 p.m.-1:30 p.m.	Lunch on your own
1:30 p.m.-2:30 p.m.	Gray Bat Working Group
2:30 p.m.-3:00 p.m.	Regulatory Updates
3:00 p.m.-3:30 p.m.	Break
3:30 p.m.-4:30 p.m.	SBDN Business Meeting
4:30 p.m.-4:45 p.m.	Break
4:45 p.m.-5:30 p.m.	WNS and NA Bat Monitoring Protocol Update
5:30 p.m.-7:00 p.m.	Dinner on your own
6:15 p.m.-7:00 p.m.	Poster Setup
7:00 p.m.-10:00 p.m.	Social, Poster Session, Silent Auction

FRIDAY, FEB 17, 2017 - COLLOQUIUM ON THE CONSERVATION OF MAMMALS

6:30 a.m.-8:00 a.m.	Breakfast – Windsor Ballroom
7:00 a.m.-11:00 a.m.	Registration
8:00 a.m.-10:00 a.m.	SWAP Symposium (concurrent A)
8:00 a.m.-10:00 a.m.	Oral Presentations (concurrent B)
10:00 a.m.-10:30 a.m.	Break
10:30 a.m.-12:30 p.m.	Northern Flying Squirrel Symposium (concurrent A)
10:30 a.m.-12:30 p.m.	Oral Presentations (concurrent B)
12:30 p.m.-2:00 p.m.	Lunch on your own
2:00 p.m.-4:00 p.m.	Eastern Spotted Skunk Symposium (concurrent A)
2:00 p.m.-4:00 p.m.	Oral Presentations (concurrent B)
4:00 p.m.-4:30 p.m.	Break and Awards
4:30 p.m.-6:00 p.m.	Oral Presentations (concurrent A)
4:30 p.m.-6:00 p.m.	Oral Presentations (concurrent B)

WE THANK S&ME FOR THEIR GENEROUS SUPPORT

Breaks this morning are sponsored by



RAFINESQUE'S BIG-EARED BAT WORKING GROUP

Thursday - February 16th 2017, 9:45-10:45

9:45 - Introduction:

Mary Kay Clark, *Moonlight Consulting, Raleigh, NC*

9:50 - Range-wide population genetic structure of the Rafinesque's Big-eared Bat, *Corynorhinus rafinesquii*

Jessica M. Vannatti, *Tennessee Technological University, Cookeville TN*

10:05 - Selection of roost trees by Rafinesque's big-eared bats in relation to land-use history

Susan B. Loeb, *US Forest Service, Clemson, SC*

10:20 - State reports (various representatives from southeastern states)

Group discussion: distribution; conservation status; survey and monitoring needs; research and study priorities

Mary Kay Clark

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wildlifeacoustics.com/bats

    Watch the tutorial videos on our website.

Attend our Lunch-and-Learn!

Thursday February 16, 12:15-1:15
in the Swannanoa Room



EASTERN SMALL-FOOTED BAT WORKING GROUP

Semi-annual Meeting

Thursday - February 16th 2017, 11:00-12:00

11:00 - Eastern Small-footed Bat Conservation and Research in Ontario, Canada *Remote presentation

Christy L. Humphrey¹, Heather A. Fotherby¹, Jeff Bowman², Mark H.R. Browning², Laura Bruce², Michelle M. Karam³

1: Natural Resource Solutions Inc., Waterloo, ON, N2K 4M8.

2: Ontario Ministry of Natural Resources and Forestry, Peterborough, ON, K9L 1Z8

3: Ontario Ministry of Natural Resources and Forestry, Vineland, ON, L0R 2E0

11:15 - Characteristics of Male and Female Roosts in Rock Outcrops in Illinois

Kristi Confortin, *Ball State University*

11:25 - A Technique for Quantifying Populations on Talus Slopes and Preliminary Trends in Virginia

Paul Moosman, *Virginia Military Institute*

11:35 - Acoustic Identification of Eastern Small-footed Bats

Chris Corben

11:45 - Group discussion on priorities in 2017, gaps in distribution data, species distribution modeling

Led by Joy O'Keefe, *Indiana State University*

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POSTERS FOR THE EASTERN SMALL-FOOTED BAT WORKING GROUP

Roosting Habits of Male Eastern Bats

Susan Loeb, *USFS*, and Patrick Jodice, *USGS-Clemson University*

Current Distribution Map

Gary Libby, *Skybax Consulting*

Details on Acoustic ID

Chris Corben

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GRAY BAT WORKING GROUP

Thursday - February 16th 2017, 1:30-2:30

1:30 - Introduction and welcome

Shauna Marquardt, *USFWS Gray Bat Recovery Coordinator*

1:35 - Fern Cave winter survey

Nick Sharp, *Alabama DCNR*, and Pete Pattavina, *USFWS*

1:45 - Kentucky cave protections

Mike Armstrong, *USFWS*

1:55 - Database and reporting

Scott House, *Cave Research Foundation*

2:10 - New discoveries: North Carolina

Sue Cameron, *USFWS*

2:20 - West Virginia

Barb Douglas, *USFWS*, and
Craig Stihler, *West Virginia DNR*

**Discussion on priorities:
research, WNS, monitoring, etc - Group**

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S C I E N T I F I C

SBDN AFTERNOON PROGRAM

Thursday - February 16th 2017, 2:30-10:00
Brian Carver, Moderator and SBDN President

2:30 p.m. - Regulatory Updates

Mike Armstrong – *SE Region Bat Recovery Coordinator,*
U.S. Fish & Wildlife Service

3:00 p.m. - Break

3:30 p.m. - SBDN Business Meeting

4:30 p.m. - Break

4:45 p.m. - White-Nose Syndrome Update

Pete Pattavina - *Southeast White-nose Syndrome Coordinator,*
U.S. Fish and Wildlife Service

5:10 p.m. - NA Bat Monitoring Protocol Update

Susan Loeb - *Research Ecologist, Southern Research Station, USDA Forest*
Service and Department of Forestry and Natural Resources, Clemson
University

5:30 p.m. - Dinner on your own

(6:15 p.m.-7:00 p.m. - Poster Setup)

7:00 p.m. - 10:00 p.m. - Social, Poster Session, Silent Auction

SWAP SYMPOSIUM SCHEDULE

Salon A

Friday - February 17th 2017, 8:00-10:00

8:00 - Introduction: History of State Wildlife Action Plans and the State Wildlife Grants Program

Anna Huckabee Smith /SWAP Coordinator, SCDNR

8:05 - South Carolina's Perspective: Success Stories and Future Directions

Anna Huckabee Smith, SWG/SWAP Coordinator, SCDNR

8:20 - North Carolina's Perspective: Success Stories and Future Directions.

Cindy Simpson Carr, WAP Coordinator, NCWRC

8:35 - Georgia's Perspective: Success Stories and Future Directions

Katrina Morris, Wildlife Biologist - Nongame Conservation, GADNR

BREAK (5 min.)

8:50 - State Ranking Revisions: North Carolina's Completed Process and Outcomes

Cindy Simpson Carr, WAP Coordinator, NCWRC

9:00 - Results of South Carolina's Ranking Survey. With Group Worksheet and Discussion

Mary Bunch, Wildlife Biologist, SCDNR
Symposium attendees (group discussion)

ORAL PRESENTATIONS

Salon B/C

Friday - February 17th 2017, 8:00-10:00

Dottie Brown, Moderator

8:00	<p>RELATIONSHIP OF <i>PEROMYSCUS</i> MICE TO HEMLOCK AND NON-HEMLOCK FOREST COMMUNITIES OF THE CUMBERLAND PLATEAU, TENNESSEE</p> <p><u>K.S. Howser*</u></p>
8:15	<p>ACTIVITY PATTERNS OF SQUIRRELS USING CAMERA TRAPS</p> <p><u>Corinne Diggins*</u>, K. Aylett Lipford, Summer D. Higdon, and W. Mark Ford</p>
8:30	<p>PREVALENCE OF <i>TOXOPLASMA GONDII</i>, <i>LEPTOSPIRA SPP.</i>, AND <i>PARVOVIRUS SPP.</i> IN NORTH AMERICAN RIVER OTTER THROUGHOUT NORTH CAROLINA</p> <p><u>Charles Sanders II*</u>, Christopher S. DePerno, and Colleen Olfenbuttel</p>
8:45	<p>SEARCHING FOR SURVIVORS: POST-WHITE-NOSE SYNDROME DAY-ROOSTING OF NORTHERN LONG EARED BATS IN THE MID-ATLANTIC</p> <p><u>Nick Kalen*</u>, M. S. Muthersbaugh, S.M. Deeley, A. Silvis, and W.M. Ford</p>
9:00	<p>ROOSTING HABITS OF THE EASTERN SMALL-FOOTED BAT IN THE SHAWNEE NATIONAL FOREST, ILLINOIS</p> <p><u>Kristin Confortin*</u> and Timothy C. Carter</p>
9:15	<p>WHY ARE ROCKET BOXES FAVORED BY AN INDIANA BAT MATERNITY COLONY IN THE CORE OF ITS' RANGE?</p> <p><u>Julia Hoeh*</u> and J. M. O'Keefe</p>
9:30	<p>ROOST NETWORK OF SOUTHEASTERN MYOTIS IN AN OLD-GROWTH BOTTOMLAND HARDWOOD FOREST</p> <p><u>S.P. Kimpel*</u> and S. C. Loeb</p>
9:45	<p>TEMPORAL FORAGING ACTIVITY OF SYNTOPIC BAT SPECIES FOLLOWING WHITE-NOSE OCCURRENCE IN LAND BETWEEN THE LAKES NATIONAL RECREATION AREA</p> <p><u>M.J. Kailing*</u>, T.L. Derting, and C. N. Walker</p>
10:00-10:30	<p>BREAK</p>

NORTHERN FLYING SQUIRREL SYMPOSIUM

Salon A

Friday - February 17th 2017, 10:30-12:30

Sue Cameron, Moderator

10:30 - Carolina northern flying squirrel surveys, monitoring, and habitat restoration in North Carolina

Christine Kelly, North Carolina Wildlife Resources Commission

10:50 - Virginia northern flying squirrels and red spruce restoration in West Virginia

*Shane Jones and Craig Stihler. Monongohela National Forest; West Virginia
Division of Natural Resources*

11:10 - Carolina northern flying squirrel surveys, monitoring, and research in Tennessee

Kelsi Palmer, Nathanael Prather, and Michael Kennedy. University of Memphis

11:30 - Monitoring of the Carolina northern flying squirrel using ultrasonic acoustics

*Corinne Diggins, L. Michelle Gilley, Christine Kelly and W. Mark Ford. U.S.
Geological Survey, Virginia Cooperative Fish and Wildlife Research Unit;
Mars Hill University; North Carolina Wildlife Resources Commission; U.S.
Geological Survey, Virginia Cooperative Fish and Wildlife Research Unit*

11:50 - Habitat selection and den use of Carolina northern flying squirrels from radio-telemetry data

*W. Mark Ford, Corinne Diggins, and Christine Kelly. U.S. Geological Survey,
Virginia Cooperative Fish and Wildlife Research Unit; U.S. Geological Survey,
Virginia Cooperative Fish and Wildlife Research Unit; North Carolina Wildlife
Resources Commission*

12:10 - Panel Discussion - Q/A **Symposium Speakers, Audience**

ORAL PRESENTATIONS

Salon B/C

Friday - February 17th 2017, 10:30-12:30

Heather Wallace, Moderator

10:30	<p>ADDRESSING VARIATION IN TIMBER HARVEST TECHNIQUES AND THE EFFECTS ON BAT OCCUPANCY AND DETECTION</p> <p><u>Keifer Titus*</u>, Timothy C. Carter, and Scott Haulton</p>
10:45	<p>INTERACTING EFFECTS OF PRESCRIBED FIRE AND WHITE-NOSE SYNDROME ON BAT ACTIVITY ACROSS THE FOREST LANDSCAPE OF MAMMOTH CAVE NATIONAL PARK</p> <p><u>Rachel Griffitts*</u>, L. E. Dodd, M. J. Lacki, N. S. Skowronski, L. K. Rieske, and M. B. Dickinson</p>
11:00	<p>INFLUENCE OF PRESCRIBED FIRE ON ENDANGERED BATS IN THE SOUTHERN APPALACHIANS</p> <p><u>Kaitlyn Rountree-Torrey*</u>, Andrew Edelman, Joseph Johnson, and Jonathan Stober</p>
11:15	<p>PROFILING BAT SPECIES PRESENCE IN MANAGED WILDLIFE LANDSCAPES</p> <p><u>Maggie Hunt*</u> and Thomas McElroy</p>
11:30	<p>FALL AND SPRING ACTIVITY PATTERNS OF CAVE DWELLING BAT SPECIES IN THE CENTRAL APPALACHIANS AROUND HIBERNACULA.</p> <p><u>Mike Mutherbaugh*</u>, Alexander Silvis, Sara E. Sweeten, and W. Mark Ford</p>
11:45	<p>SEASONAL TORPOR PATTERNS OF TRICOLORED BATS IN RELATION TO HIBERNACULA CONDITIONS IN SOUTH CAROLINA</p> <p><u>Pallavi Sirajuddin*</u>, S. C. Loeb, E. R. Britzke, and D. Jachowski.</p>
12:00	<p>A CHANGING COMMUNITY?: THE EFFECTS OF WHITE-NOSE SYNDROME ON BAT COMMUNITY STRUCTURE IN THE SOUTHEASTERN UNITED STATES</p> <p><u>K.D. Teets*</u>, S. Loeb, J. Kilgo, D. Jachowski, and W. M. Ford</p>
12:15	<p>RANGE-WIDE POPULATION GENETIC STRUCTURE OF RAFINESQUE'S BIG-EARED BATS, <i>CORYNORHINUS RAFINESQUII</i>, AND SOUTHEASTERN MYOTIS, <i>MYOTIS AUSTRORIPARIUS</i></p> <p><u>J.M. West*</u> and B.D. Carver</p>
12:30-2:00	<p>LUNCH (on your own)</p>

EASTERN SPOTTED SKUNK SYMPOSIUM SCHEDULE

Salon A

Friday - February 17th 2017, 2:00-4:00

David Jachowski, Moderator

2:00 - Historical biogeography of the eastern spotted skunk.

Blake Sasse, Arkansas Game and Fish Commission

2:15 - A survey for eastern spotted skunk (*Spilogale putorius*) in western Maryland.

K.J. Pearce, T.L. Serfass, J. M. McCann, D.J. Feller. Appalachian Laboratory, University of Maryland Center for Environmental Science; Department of Biology and Natural Resources, Frostburg State University; Maryland Department of Natural Resources, Natural Heritage Program; Wildlife and Heritage Service, Maryland Dept. of Natural Resources, Appalachian Laboratory

2:30 - Spotted skunk habitat selection and use in the Carolinas, and Georgia

Robin Y.Y. Eng, Jay Butfiloski, Colleen Olfenbuttel, Nikole Castleberry, Katrina Morris, and David S. Jachowski. Department of Forestry and Environmental Conservation, Clemson University; South Carolina Department of Natural Resources; North Carolina Wildlife Resource Commission; Georgia Museum of Natural History; Georgia Department of Natural Resources; Department of Forestry and Environmental Conservation, Clemson University

2:45 - Den-site selection and use by eastern spotted skunks in the Southern Appalachians.

Andrew J. Edleman, and Tyler R. Sprayberry. Department of Biology, University of West Georgia; Department of Biology, University of West Georgia

3:00 - Ecology of the Florida Spotted Skunk in a Dry Prairie Ecosystem.

S. N. Harris, D. S. Jachowski, T. J. Doonan, and E. L. Hewett Ragheb. Department of Forestry and Environmental Conservation, Clemson University; Department of Forestry and Environmental Conservation, Clemson University; Habitat and Species Conservation, Florida Fish and Wildlife Conservation Commission; Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission

3:15 - Temporal patterns in infection by the skunk cranial worm *Skrjabingylus chitwoodorum* and its potential importance for eastern spotted skunk ecology and conservation.

Summer D. Higdon, and Matthew E. Gompper. University of Missouri.

ORAL PRESENTATIONS

Salon B/C

Friday - February 17th 2017, 2:00-4:00

Mary Frazer, Moderator

2:00	SIZE METRICS AS PREDICTORS OF THE ENERGETIC VALUE OF LEPIDOPTERAN PREY <u>S. A. Fulton*</u> , L. E. Dodd, and L. K. Rieske-Kinney.
2:15	BIRTH AND BEHAVIOR IN A COLONY OF BIG BROWN BATS IN WESTERN NORTH CAROLINA <u>M.J. Braine*</u> and C.W. Nicolay
2:30	ACOUSTIC SAMPLING FOR BAT PRESENCE IN URBAN ENVIRONMENTS: APPLICABILITY OF NABAT AND USFWS METHODS <u>S.M. Deeley*</u> , A. Silvis, and W.M. Ford
2:45	RELATIONSHIP OF ENVIRONMENTAL STRUCTURE TO ECHOLOCATION PULSE QUALITY <u>M.J. Shirazi*</u> , D. Hakkenberg, N.Abaid, W.M. Ford, and A. Silvis
3:00	THOUGHTS ON UNCERTAINTY IN BAT ACOUSTICS <u>Alexander Silvis</u> , W.M. Ford, and E.R. Britzke
3:15	REJECTION OF PIT TAGS FROM FLORIDA BONNETED BATS <u>J.A. Gore</u> and M. W. Gurley
3:30	ACOUSTIC LURE ALLOWS FOR CAPTURE OF A HIGH-FLYING, ENDANGERED BAT: THE FLORIDA BONNETED BAT (<i>EUMOPS FLORIDANUS</i>) <u>E. C. Braun de Torrez</u> , S. T. Samoray, M. W. Gumbert, H. K. Ober, and R. A. McCleery
3:45	AERIAL RADIO TRACKING OF FLORIDA BONNETED BATS (<i>EUMOPS FLORIDANUS</i>) <u>G. A. Janos</u> , S. T. Samoray, and E. C. Braun de Torrez
4:00-4:30	BREAK AND AWARDS

ORAL PRESENTATIONS

Salon A

Friday - February 17th 2017, 4:30-6:00

Han Li, Moderator

4:30	DYNAMIC LANDSCAPES: CHANGE DETECTION OF EPHEMERAL HABITATS FOR THE ENDANGERED INDIANA BAT IN THE MID-ATLANTIC <u>Michael St. Germain</u> and W. Mark Ford
4:45	WINTER ACTIVITY PATTERNS OF BATS ON THE CUMBERLAND PLATEAU IN RELATION TO HABITAT AND ENVIRONMENTAL CONDITIONS <u>Leanne Burns</u> , S.C. Loeb, W.C. Bridges Jr., and P.G. Jodice
5:00	MODELING THE DISTRIBUTION OF MYOTIS SEPTENTRIONALIS IN NORTH GEORGIA <u>John Grider</u> , Steven B. Castleberry, and Jeffrey Hepinstall-Cymerman
5:15	SEPARATING THE EFFECTS OF WATER QUALITY AND URBANIZATION ON BATS AT LANDSCAPE SCALE <u>H. Li</u> and M. Kalcounis-Rueppell
5:30	PREDICTING THE RESPONSE OF BATS TO INTENSIFIED BIOENERGY PRODUCTION ACROSS THE SOUTHEASTERN U.S. <u>H.K. Ober</u> , R. J. Fletcher, S. A. Johnson, and I. G. W. Gottlieb
5:45	BAT TO THE FUTURE: THE SEQUEL <u>Michael St. Germain</u> and W. Mark Ford

ORAL PRESENTATIONS

Salon B/C

Friday - February 17th 2017, 4:30-6:00

Brandon Sherrill, Moderator

4:30	SPATIAL PATTERNS OF URBAN AND RURAL WHITE-TAILED DEER IN SOUTHERN INDIANA <u>Tim Carter</u> , Jonathan K. Trudeau, and Garrett B. Clevinger
4:45	SURVIVAL AND MOVEMENTS OF REHABILITATED BLACK BEAR CUBS RELEASED IN NORTH CAROLINA <u>C. A. Gray</u> , G. Albers, and C. Olfenbuttel
5:00	DOES HUNTING OR HIKING AFFECT MAMMAL COMMUNITIES IN PROTECTED AREAS? <u>Roland Kays</u> , Arielle W. Parsons, Megan C. Baker, Elizabeth L. Kalies, Tavis Forrester, Robert Costello, Christopher T. Rota, Joshua J. Millsbaugh, and William J. McShea
5:15	IMPLICATIONS OF MOBILE TRANSECT INTERPRETATIONS TO BAT MANAGEMENT CONSIDERATIONS <u>John D. Chenger</u> and Janet D. Tyburec
5:30	THERMOREGULATORY FLEXIBILITY OF THE INDIANA BAT IN RESPONSE TO WEATHER VARIATION <u>Scott Bergeson</u> , J.M. O'Keefe, and R.M. Brigham

**WE THANK NC BAT WORKING GROUP FOR THEIR
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