



Résumé

**Dr. L. Michelle Gilley**

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## EDUCATION

**Ph.D:** 2013. Biology. Auburn University, AL.

Dissertation: "Discovery and characterization of high frequency calls in North American flying squirrels (*Glaucomys sabrinus* and *G. volans*): Implications for ecology, behavior, and conservation"

- Research: During her Ph.D., Dr. Gilley was involved in surveying the mammals of Alabama in cooperation with Dr. Troy Best of Auburn University. Since 2003 these efforts have included live-trapping for both eastern and Allegheny woodrats and monitoring caves in northern Alabama for endangered gray and Indiana bats. The focus of Dr. Gilley's doctoral research was to study and classify the high-frequency calls of both northern and southern flying squirrels. She developed the first acoustic model of flying squirrel calls and used the model to locate four new populations of endangered northern flying squirrels in western North Carolina.

**M.S. degree:** 2002. Biology. The University of Memphis, Memphis, TN.

Thesis: "Ecological studies of small mammals in temperate deciduous forest: I. An assessment of microhabitat utilization by small mammals in arboreal and ground-level strata of temperate deciduous forest; II. A test of mist-net configurations in capturing bats over stream corridors"

- Research: Dr. Gilley conducted surveys of eastern bats focused on southeastern myotis and Rafinesque's big-eared bats, and other small mammals including southern bog lemming, golden mice, and eastern woodrats in western Tennessee.

**B.S. degree:** 1995. Wildlife Science. Auburn University, AL.

- Undergraduate Research: As an undergraduate, Dr. Gilley worked full-time during summers as a research assistant for graduate students, studying the foraging behavior of gray bats over open water and habitat with invasive Eurasian water milfoil. She assisted with Harp-trapping gray bats at caves and conducting radio telemetry studies.

## QUALIFICATIONS AND EXPERIENCE

Dr. Gilley has worked with eastern species of bats since 1994, beginning as an undergraduate at Auburn University under the mentorship of Dr. Troy Best. She received her Master's degree in Biology from the University of Memphis working under Dr. Michael Kennedy. Her thesis work involved surveys for listed bats and other small mammals in western Tennessee. Dr. Gilley concluded her academic work at Auburn

University, where she obtained her PhD in Biology working on bioacoustics of northern and southern flying squirrels (*Glaucomys sabrinus* and *G. volans*). Throughout her graduate work, Dr. Gilley spent summers conducting surveys for threatened and endangered species of bats. She has worked with bats professionally as a consultant and/or professor for 22 consecutive years. Dr. Gilley is highly skilled in using the following techniques specific to the study and conservation of bats: mist nets, Harp traps, acoustic surveys, habitat assessments, cave surveys, transmitter attachment, radio telemetry (both ground and aerial), banding, safe removal of bats from bat boxes/houses, collection of demographic data, general health assessment including for white nose syndrome (WNS).

Dr. Gilley's experience includes surveys for various federal and state listed species (*Myotis sodalis*, *M. grisescens*, *M. septentrionalis*, *Corynorhinus townsendii virginianus*, *Glaucomys sabrinus coloratus*, *Glaucomys sabrinus fuscus*, and *Neotoma magister*), and surveys have been conducted on private right-of-way (ROW) corridor developments, U.S. Forest Service lands, DoD facilities, Federal Highway Administration, and state DOT projects. Over the course of her career, Dr. Gilley has personally handled over 3500 bats and conducted research on small mammals and bats throughout the eastern United States, Mexico, and Ecuador. She has been QIBS certified in Pennsylvania since 2014. Currently, Dr. Gilley is an assistant professor at Mars Hill University near Asheville, North Carolina and co-owner/principal scientist at borealis Biological, LLC.

## **PUBLICATIONS**

- Diggins, C., **L. M. Gilley**, C. A. Kelly, W. M. Ford. 2016. Comparison of survey techniques on detection of northern flying squirrels. *Wildlife Society Bulletin*, 4:654-662.
- Gilley, L. M.**, C. A. Kelly, and T. L. Best. The production of both sonic and ultrasonic vocalizations in North American flying squirrels prove to be species-specific. *Journal of Mammalogy* *In review*.
- W. M. Ford, C. A. Kelly, J. L. Rodrigue<sup>3</sup>, R. H. Odom, D. Newcomb, **L. M. Gilley**, C. A. Diggins. 2014. Late winter and early spring home range and habitat use of the endangered Carolina northern flying squirrel in western North Carolina. *Endangered Species Research*, 23:73-82.
- Gilley, L. M.** 2013. Discovery and characterization of high-frequency calls in North American flying squirrels (*Glaucomys sabrinus* and *G. volans*): Implications for ecology, behavior, and conservation. Ph.D dissertation, Auburn University, Alabama, USA.
- Gilley, L. M.**, and M. L. Kennedy. 2010. A test of mist-net configurations in capturing bats over stream corridors. *Acta Chiropterologica*, 12:363-369.

Hopkins, H. L., C. Sánchez-Hernández, M. L. Romero-Alvarez, **L. M. Gilley**, G. D. Schnell, M. L. Kennedy. 2003. Flight speeds of four neotropical bats. *Southwestern Association of Naturalists*, 48:711-714.

**Gilley, L. M.** 2002. Ecological studies of small mammals in temperate deciduous forests. Master's thesis, The University of Memphis, Tennessee, USA.

**Gilley, L. M.**, and M. L. Kennedy. 2001. Survey of rare mammals on the Milan Army Ammunition Plant in Carroll and Gibson counties, Tennessee. Final Report. Submitted: American Ordnance, Milan, TN. 91 pp.

## **PROJECT EXPERIENCE**

**Biologist/Project Manager** – borealis Biological, 2018. Conducted habitat assessments, mist net surveys, and winter habitat searches and surveys for endangered Indiana bats (*Myotis sodalis*) and NLEB (*Myotis septentrionalis*) for an AEP power line improvement project in West Virginia and Kentucky. Borealis Biological was a subcontractor for GAI.

**Biologist/Project Manager** – borealis Biological, 2018. Conducted mist net surveys for endangered Indiana bats (*Myotis sodalis*) and NLEB (*Myotis septentrionalis*) for a proposed MarkWest natural gas pipeline in West Virginia. Borealis Biological was a subcontractor for Civil and Environmental Consultants (CEC).

**Biologist/Project Manager** – borealis Biological, 2018. Conducted mist net surveys for endangered Indiana bats (*Myotis sodalis*) and NLEB (*Myotis septentrionalis*) for a proposed wind farm in Iowa. Borealis Biological was a subcontractor for HDR.

**Field Supervisor**– MVP, Mountain Valley Pipeline: 2015-2016. Completed summer mist netting for listed bat species along portions of proposed 300-mile long natural gas pipeline in West Virginia and Virginia.

**Field Supervisor** – Spectra Energy, NEXUS Gas Transmission Project: 2015-2016. Completed summer mist netting for listed bat species along portions of proposed 250-mile, 36-inch diameter natural gas transmission pipeline originating in Columbia County, Ohio and extending through Ohio to Wayne County, Michigan.

**Field Supervisor** – Dominion Transmission, Atlantic Coast Pipeline: 2015. Completed habitat assessment for West Virginian northern flying squirrel utilizing desktop review and field surveys along portions of an approximately 564.1-mile interstate natural gas pipeline system in Virginia and North Carolina.

**Field Supervisor** – Dominion Transmission, Atlantic Coast Pipeline: 2015. Completed habitat assessment for state-listed southeastern myotis and eastern subspecies of Rafinesque's big-eared bat along portions of an approximately 564-mile interstate natural gas pipeline system in Virginia and North Carolina. Studies consisted of desktop analysis, field verification, and exploratory mist-net surveys at four sites.

**Field Supervisor** – MVP, Mountain Valley Pipeline: 2015. Completed summer mist netting for listed bat species along portions of proposed 300-mile long natural gas pipeline in West Virginia and Virginia.

**Field Supervisor** – Spectra Energy, NEXUS Gas Transmission Project: 2015. Completed summer mist netting for listed bat species along portions of proposed 250-mile, 36-inch diameter natural gas transmission pipeline originating in Columbia County, Ohio and extending through Ohio to Wayne County, Michigan.

**Field Supervisor** – American Electric Power, Bland Area Improvements 138 kV Transmission Line Rebuild Project: 2015. Completed field surveys for bats and plants along portion of 138 kV transmission line rebuild project crossing federal lands in Bland and Wythe counties, Virginia and Mercer County, West Virginia. Surveys focused on federally endangered Indiana, gray, and Virginia big-eared bat, federally threatened northern long-eared bat, and forest sensitive species eastern small-footed bat.

**Field Supervisor** – Transource Missouri, LLC, Sibley to Nebraska City 345kV-Transmission Line: 2014. Assisted with endangered bat mist net surveys along a 132-mile long transmission line in Holt, Nodaway, Andrew, DeKalb, Clinton, Caldwell, Ray, and Jackson counties, Missouri.

**Field Supervisor** – Indiana Department of Transportation, Interstate 69, Pre- and Post-construction Surveys: 2014. Conducted summer mist net survey for federally endangered Indiana bat along final ROW for Sections 1, 2, 3, and 5.

**Field Supervisor** – NextEra Energy Resources, Wind Resource Area, Nodaway County Missouri: 2014. Completed mist-net surveys for summer bats including the Indiana and northern long-eared bat. Nine Indiana and two northern long-eared bats were radio-tracked to roosts.

**Field Supervisor** – Tennessee Valley Authority, Widow's Creek Fossil Plant: 2013. Completed mist net surveys and acoustic monitoring for the federally endangered Indiana bat on a proposed 163-acre borrow area in Jackson County, Alabama.

**Field Supervisor**

– Crosstex Energy, Inc. Lowell North Pipeline: 2013. Completed endangered bat studies along a 33.5-mile long liquids trunk-line in Washington, Monroe, and Noble counties, Ohio.

**Field Supervisor** – Texas Eastern Transmission, Ohio Pipeline Energy Network Project: 2013. Completed mist net surveys for the federally endangered Indiana bat along a 73.5-mile natural gas pipeline in Columbiana, Carroll, Jefferson, Belmont, and Monroe counties, Ohio.

**Field Supervisor** – Enbridge Inc., Line 78 Pipeline: 2013. Completed summer mist netting surveys along a 78-mile natural gas pipeline in Livingston, Grundy, Kankakee, Will, and Cook counties, Illinois, and Lake County, Indiana.

**Field Supervisor** – Sunoco Pipeline, LP Tiffin-Easton Pipeline: 2012. Completed summer mist netting surveys along an 82-mile pipeline project in Seneca, Huron, Ashland, and Wayne counties, Ohio.

**Field Supervisor** – Global Geophysical Services Rolling Rock 3-D Seismic Survey: 2011. Project involved the monitoring and repositioning of seismic survey blasting locations to avoid disturbing potential green salamander, timber rattlesnake, and Allegheny woodrat habitat, as well as potential bat hibernacula within state-owned and private lands.

**Field Supervisor** – Indiana Department of Transportation, Route 641, Terre Haute Bypass: 2010. Completed Indiana bat habitat and mist net surveys supplemented with AnaBat detectors for acoustic monitoring. Selected net sites, captured and identified bats, characterized habitat, implemented white nose syndrome protocols, and supervised field crews during mist netting, radio-telemetry, and emergence counts.

**Field Supervisor** – Tennessee Gas Pipeline Company 300 Line: 2009. Completed Indiana bat habitat and mist net surveys in Potter, Tioga, Bradford, Susquehanna, Wayne, Pike, Venango, and McKean counties, Pennsylvania and Passaic and Sussex counties, New Jersey. Responsible for coordination of daily field crew activities, habitat assessments, and quality control of collected data.

**Field Supervisor** – Dominion, North Summit: 2008-2009. Project included habitat assessment surveys for Indiana bats, timber rattlesnakes, green salamanders and Allegheny woodrats, as well as rare plant surveys for an 18-square mile gas storage field seismic project in Fayette County, Pennsylvania. Responsible for coordination of daily field crew activities, habitat assessments for woodrats and bats, and quality control of collected data.

**Field Supervisor** – Dominion Hybrid Energy/Clinch River Transmission Line: 2008. Project included mist net and radio-telemetry surveys for three endangered bat species along a proposed 9-mile transmission line corridor in Wise and Russell counties, Virginia. Responsible for all aspects of bat field surveys. Selected net sites, captured and identified bats, characterized habitat, and supervised field crews during mist netting, radio-telemetry, and portal search efforts.

**Field Supervisor** – Pennsylvania Turnpike Commission Southern Beltway Project, Interstate 79 to Mon/Fayette Expressway: 2008. Participated in a mist net survey along a proposed 12-mile roadway corridor in Washington County, Pennsylvania. Responsible for mist net site selection, net set up, habitat assessment, and bat identification/processing.

**Field Supervisor** – Confidential Client, Natural Gas Transmission Pipeline: 2008. Conducted mist net survey for the endangered Indiana bat associated with a 250-mile pipeline running through portions of Ohio, West Virginia, and Pennsylvania.

**Field Supervisor** – Equitrans, Big Sandy Pipeline: 2007. Managed field crews to complete mist net surveys at 35 sites along Equitrans' 68-mile natural gas transmission pipeline through Lawrence, Johnson, and Floyd counties, Kentucky. In charge of all

aspects of bat field surveys including technician supervision, survey netting site selection, and bat capture and identification, and netting site habitat characterization.

**Field Supervisor** – Dutchess County Airport. 2007. Managed crews conducting Indiana bat mist netting survey and emergence counts. In charge of all aspects of bat field surveys including technician supervision, survey netting site selection, and bat capture and identification, and netting site habitat characterization for a project involving runway safety/obstruction removal on a 91-acre parcel in Dutchess County, New York.

**Project Manager** – Essex County Airport: 2007. Managed crews conducting Indiana bat mist netting survey. In charge of all aspects of bat field surveys including technician supervision, survey netting site selection, and bat capture and identification, and netting site habitat characterization for a project involving runway safety/obstruction removal in Essex County New Jersey.

**Project Manager** – French Lick Airport: 2007. Managed crews conducting Indiana bat mist netting survey. In charge of all aspects of bat field surveys including technician supervision, survey netting site selection, and bat capture and identification, and netting site habitat characterization on approximately 20 acres of forest edge in Orange County, Indiana.

**Biologist** – Marathon: Dayton-Heath Pipeline: 2007. Conducted bat emergence counts along portions of an existing petroleum pipeline running from Dayton (Montgomery County) to Heath (Licking County) Ohio.

**Biologist** – Fort Drum Indiana Bat Survey and Radio-telemetry Study: 2007. Base-wide bat survey focusing on Indiana bat capture and radio-telemetry. This survey was initiated due to ESI's documentation of an Indiana bat on base property in 2006. Survey efforts included over 80 mist net sites and Indiana bat radio-tagging. Responsible for completion of surveys and coordinating field crews.

**Project Manager** – Equitrans. 2007. Managed field crews to complete mist net surveys at 35 sites along a 68-mile natural gas transmission pipeline through Lawrence, Johnson, and Floyd counties, Kentucky. In charge of all aspects of bat field surveys including technician supervision, survey netting site selection, and bat capture and identification, and netting site habitat characterization.

**Biologist** – American Electric Power, Maytown-Hays Branch 138 kV Transmission Line: 2007. Conducted mist net survey and portal search along 8.3-mile 138 kV electric transmission line in Floyd County, Kentucky. Responsible for completion of surveys and coordinating field crews.

**Field Supervisor** – Dominion Transmission, South Western Virginia Expansion Project: 2006. Managed multiple field crews to complete mist net surveys at 21 sites along a 6-mile proposed natural gas ROW in Boone and Wyoming Counties. Responsible for field staff management, data accuracy and client/agency communications on field activities.

**Field Supervisor** – Union Pacific Railroad: 2006. Managed field crews for 5-mile railroad ROW netting surveys and diurnal and night time foraging telemetry conducted as a result of four endangered bat captures.

**Field Supervisor** – American Electric Power, Wyoming-Jackson's Ferry 765 kV Transmission Line: 2004 - 2006. Managed all field activities and personnel for netting on approximately 30 miles of a proposed 90-mile, 1000-foot electric transmission line ROW corridor in rugged terrain in West Virginia and Virginia during 2004. Concurrently supervised reconnaissance, netting, ground telemetry, and aerial telemetry for a crew ranging from four to thirteen individuals. Primary draft report author. Managed field wildlife research crew to determine the source of damage to insulators in 2006.

**Field Supervisor** – Garden Homes: 2006. Completed presence/absence surveys for the Indiana bat as part of consultation for endangered species on a 100-acre site in Essex County, New Jersey.

**Field Supervisor** – Dominion Transmission, Cove Point Pipeline Expansion PL-1 Extension 2: 2005. Co-managed all field activities and personnel to complete netting at 111 sites along an 80-mile existing gas line ROW in Pennsylvania. Concurrently supervised all reconnaissance, netting, land agent, client and agency interactions.

**Field Supervisor** – Indiana Department of Transportation, Interstate 69, Segment 2: July – August 2004. Managed all field activities and personnel completing netting and telemetry studies at 30 sites over a three-week period along a 30-mile segment of proposed roadway for the Tier 2 Environmental Studies. Concurrently supervised reconnaissance, netting, diurnal roost telemetry on nine transmittered Indiana bats, emergence counts at 8 roost trees and checks for roosting bats at 51 bridges. Field crew ranged from six to twelve individuals.

**Field Supervisor** – Western Greenbrier Co-Gen: July 2004. Habitat assessments and surveys for endangered mammals. Completed mist net surveys for the Indiana bat (*Myotis sodalis*), the Virginia big-eared bat (*Corynorhinus t. virginianus*), and the northern flying squirrel (*Glaucomys sabrinus*). Pedestrian surveys were also performed to document other wildlife in the area. Served as primary author for the report sections related to the northern flying squirrel survey.

**Field Supervisor** – Proposed Surface Mine Development: August 2003. Managed all field activities and personnel for twelve summer mist net sites in Pike County, Kentucky; including supervision of other biologists and all field assistants, survey net site selection, bat capture and identification, and net site habitat characterization.

**Biologist** – Ohio Department of Transportation, Portsmouth Bypass: June 2003. Conducted summer mist net surveys for the Indiana bat along a proposed ODOT highway improvement ROW.

**Biologist** – Southern Illinois Power Cooperative Utility Line: June 2003. Conducted summer mist net surveys for the Indiana bat between Cadle and Pittsburg in Williamson County, Illinois.

**Biologist** – Dominion Transmission, Greenbrier Pipeline: May 2003. Served on one of six teams conducting summer mist net surveys for the Indiana bat (*Myotis sodalis*) and the Virginia big-eared bat (*Corynorhinus t. virginianus*) in West Virginia.

**Biologist** – University of Memphis: 1999-2002. Conducted a survey for rare mammals on the Milan Army Ammunition Plant. Survey including trapping of eastern woodrats (*Neotoma floridana*).

**Field Supervisor** – Mist net survey for Indiana bats for a coal development in West Virginia. Responsible for all aspects of field survey for bats, including technician supervision, survey net site selection, bat capture and identification, and net site habitat characterization.

**Field Supervisor** – Completed detailed assessments for potential habitat for endangered bats on numerous impoundments for a proposed hydropower relicensing project in North Carolina; completed summer mist net surveys in areas with suitable habitat.

**Field Supervisor** – Mist net surveys for Indiana bats for coal mine developments in southwest Virginia. Responsible for net site selection, bat capture and identification, net site habitat characterization, and technician supervision.

**Field Supervisor** – Mist net survey for Indiana bats for a municipal/commercial development in West Virginia. Responsible for all aspects of field survey for bats, including net site selection, bat capture and identification, net site habitat characterization, and technician supervision.

**Biologist** – Department of Defense, Fort Drum Military Installation. Conducted mist net survey in New York. Responsible for all aspects of field survey for bats, including net site selection, bat capture and identification, net site habitat characterization, and technician supervision.

**Field Supervisor** – Mist net survey for Indiana bats for a coal development in Illinois. Responsible for all aspects of field survey for bats, including net site selection, bat capture and identification, net site habitat characterization, and technician supervision.

**Field Supervisor** – Mist net survey, radio telemetry (spring active, and autumn swarming), cave surveys (and mapping), and netting for bat collection for pesticide analysis involving endangered Indiana and gray bats at Ft. Leonard Wood in Missouri. Responsible for all aspects of field survey for bats, including net site selection, bat capture and identification, net site habitat characterization, and technician supervision.

**Biologist** – Mist net survey for Indiana bats, radio telemetry, and bat box monitoring at Indianapolis International Airport.

**Biologist** – Mist net survey for Indiana and gray bats Arnold Air Force Base, Tennessee.

**Biologist** – Mist net survey, radio telemetry, habitat characterization, and search for caves used by endangered gray and Indiana bats at Fort McClellan, Alabama.



**Biologist** – Bat trap survey of mine portals in Pennsylvania to assess the probability of abandoned mines for hibernation by endangered species of bats.

**Biologist** – Mist net survey for endangered Indiana bats along a multi-state pipeline corridor in the Midwestern U.S.

**Biologist** – Mist net survey for endangered Indiana bats on Wright/Patterson Air Force Base, Ohio.

**Biologist** – Mist net survey for endangered Indiana bats at Camp Atterbury Army National Guard training site, Indiana.

**Biologist** – Mist net survey for endangered Indiana bats at Crane Navel Weapons Support Center, Indiana.

**Biologist** – Collected bats and other species of small mammals in Mexico; prepared museum specimens.

#### **PROFESSIONAL AFFILIATIONS**

American Society of Mammalogists (since 2003)

Southeastern Bat Diversity Network (since 2003)

The Wildlife Society: Tennessee Chapter (since 1999); Alabama Chapter (1995)

Tri Beta Biological Honor Society (since 1995)

Appalachian Flying Squirrel Working Group (since 2016)