

FLORIDA BAT WORKING GROUP

2025 ANNUAL MEETING

April 3-4, 2025, in Micanopy, Florida



THE MISSION OF THE FLBWG IS CONSERVING FLORIDA'S BATS THROUGH COLLABORATIVE RESEARCH, MANAGEMENT, AND EDUCATION AMONG AGENCIES, ORGANIZATIONS, AND INDIVIDUALS.

LOCATION: The meeting will be held in the main lodge building at Alachua County's [Cuscowilla Nature & Retreat Center](#), 210 SE 134 Ave, Micanopy, FL. It's a beautiful 200-acre property and you are welcome to explore the numerous hiking trails through the forest and around the lake. The property can be accessed before the meeting on Thursday (after 8am), or after the meeting on Friday (until 5pm).

DATES AND TIMES: We encourage everyone to attend both days of the meeting:

- Thursday, April 3 at 10:00 am to 5:00pm, plus evening networking social and bat house visit
- Friday, April 4 at 8:30 am to 12:45 pm

REGISTRATION AND LODGING: Pre-registration is required for all meeting attendees. Shared lodging at Cuscowilla is only available for meeting attendees who reserved in advance. Registration is now closed; no late registrants will be accommodated.

MEALS: FLBWG will provide lunch during the meeting on Thursday for all meeting attendees. No other meals will be provided. Coffee, tea, and snacks will be available during scheduled networking breaks.

SPONSORED NETWORKING SOCIAL: On Thursday evening at 5:30 pm, there is a networking social at [First Magnitude Brewing Company](#) in Gainesville, FL. Your first beverage and a couple slices of pizza are on us. A variety of alcoholic and non-alcoholic options are available. Tony Dilla's Mexican Food Truck will also be on site. Don't miss this chance to network with fellow FLBWG members.

UF BAT HOUSE VISIT: Did you know the world's largest occupied bat houses are on [The University of Florida bat campus](#) in Gainesville? Join others from the FLBWG at 7:40pm Thursday evening for a brief interpretive tour prior to watching emergence around 8PM.

PRESENTATION/SPEAKER INFORMATION:

If you are providing a slide presentation, please arrive with your presentation on a USB thumb drive. ALL PRESENTATIONS MUST BE UPLOADED AT CHECK-IN (Thursday between 9:30-10am) regardless of the day you are presenting. Internet will be limited at the site.

LATE-BREAKING LIGHTNING TALKS:

There will be a limited number of slots available for <3-minute lightning talks. No slides are required, but if you do have slides (1-2 max) they *must be* uploaded during check-in.

COLLABORATIONS AND COMMITTEES:

There will be several designated sessions to building collaborations and working in committees. Come prepared with fresh ideas of how the FLBWG can work together to achieve our mission and hopefully benefit yours!

MORE INFORMATION: Florida Bat Working Group website: <https://www.flbwg.net/>

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AGENDA

Thursday, April 3, 2025

9:30 am	<i>Check-in opens at Cuscowilla Lodge</i>
10:00	Meeting BEGINS: Welcome and Introductions
10:30	Keynote Presentation <ul style="list-style-type: none"> ○ <i>State of the State of Florida's Bats</i> – Terry J. Doonan, Ph.D., Mammal Conservation Coordinator, Florida Fish and Wildlife Conservation Commission
11:05	Update from the FLBWG, presented by the FLBWG Board of Directors
12:00	FLBWG Committee Updates and Accomplishments
12:15 pm	<i>Lunch (provided by FLBWG)</i>
1:15	Selected Presentations <ul style="list-style-type: none"> ○ <i>Updates on Tricolored Bat Listing</i> - Lorraine Ketzler ○ <i>All About IPAC</i> - Sandra Sneckenberger
1:35	Building Collaborations in Committee (<i>part A</i>) [Education, Outreach, Hype, and more]
2:40 pm	<i>Networking Break</i>
3:10	Selected Presentations <ul style="list-style-type: none"> ○ <i>ATLAS - a reverse GPS system for tracking wildlife</i> - Eran Amichai ○ <i>Filling the Gaps: Florida Bonneted Bat Roost Selection and Population Structure Between Known Populations</i> - Adam Nash ○ <i>Trialing Drilled Tree Cavities to Supplement Florida Bonneted Bat Roosting Habitat</i> - Jillian Josimovich ○ <i>Flights of the Swamp Bats: Aerial Telemetry Across Everglades Restoration</i> - Jonas Borkholder ○ <i>Exploring the LT BMP Website</i> - Lily Martin ○ <i>Updates from the Wildlife Assistance Program</i> - Lauren Barth ○ <i>"Bat Awareness Training" for Wildlife Control Operators</i> - Shelly Johnson
4:00 pm	<i>10-minute bio-break</i>
4:10	Selected Presentations <ul style="list-style-type: none"> ○ <i>Florida Department of Transportation Update: What FDOT is Doing to Protect Bats in Florida</i> - Katasha Cornwell ○ <i>Protecting Florida Bats: Exclusion and Verification Techniques for the I-75 & Broadway Bridge Redecking Project</i> - Joel Wixson ○ <i>Bat Habitat Conservation Plan for Large-scale Vegetation Management</i> - Sam Freeze ○ <i>History of the University of Florida Bat Houses and the Potential for Future Research</i> - Jacqueline Belwood & Terry Zinn
4:55	Wrap-up, evening plans, and tomorrow's agenda
5:00 pm	<i>Conclude Day 1</i>
5:30 pm	<i>Networking Social at First Magnitude Brewing Company (1220 SE Veitch St, Gainesville, FL 32601)</i>
7:40 pm	<i>Meet at UF Bat Houses for tour before 8:00pm emergence (map link)</i>

Friday, April 4, 2025

8:15 am	<i>Check-in opens at Cuscowilla Lodge</i>
8:30	Meeting Day 2 BEGINS: Welcome
8:35	Selected Presentations <ul style="list-style-type: none">○ <i>Analysis of Bat Calls in Central and South Florida: Comparing Software Outputs with Manual Vetting</i> - John Chenger○ <i>Habitat Diversity and Its Role in Tricolored Bat Conservation in Florida: Insights from Statewide Acoustic Monitoring</i> - Maria Monarchino○ <i>Bat signals: tracking tricolored bats to winter roosts with radiotelemetry</i> - Lisa Smith○ <i>A Batty Summer at Florida's Naval Installations</i> - JaDariusz Jackson○ <i>The Bats of Pine Island Sound</i> - Mike Mills
9:20	Building Collaborations in Committee (<i>part B</i>) [Interagency Partnerships, Bat Blitz, Habitat]
10:25 am	<i>Networking Break</i>
10:55	Selected Presentations <ul style="list-style-type: none">○ <i>From Rehab to Research: Motus Tagging Tree Bats and a Wayward Silver-haired Bat (<i>Lasionycteris noctivagans</i>)</i> - Jenny White, Jonas Borkholder, Lisa Smith○ <i>Southeastern Myotis (<i>Myotis austroriparius</i>) Use of Urban Stormwater Sewer Systems</i> - Alan Ivory○ <i>FYCCN Program Overview & Bat Kit Spotlight</i> – Jayne Johnston
11:31	Late-breaking Lightning Updates
11:40	Collaborative Committee Reports and Plans for 2025
12:10	FLBWG Board of Directors election results
12:20	Meeting Wrap-Up and Survey
12:45 pm	<i>Meeting Adjourned</i>



ENSURING A BRIGHT FUTURE FOR FLORIDA'S BATS!

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ABSTRACTS FOR SELECTED PRESENTATIONS

(IN ALPHABETICAL ORDER BY SPEAKER'S LAST NAME)

ATLAS - A REVERSE GPS SYSTEM FOR TRACKING WILDLIFE

ERAN AMICHAJ, NORMANDEAU ASSOCIATES, INC., EAMICHAJ@NORMANDEAU.COM

Tracking bats in the wild presents great challenges, due to their speed and range, their nocturnal lifestyle, and their low weight limiting transmitter options. ATLAS is a system of stationary receiver towers deployed around an area of interest. The digital receivers calculate the position of digitally encoded VHF transmitters based on differences in signal time of arrival between the towers, and provide highly accurate and high-resolution data. The transmitters can weigh less than 0.25 gr and so be fitted on most bat species. While installation and deployment of the towers is costly in both money and effort, once deployed the system can be used for many years. The transmitters are cheap and light and can be used on almost all terrestrial taxa.

UPDATES FROM THE WILDLIFE ASSISTANCE PROGRAM

LAUREN BARTH, FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, LAUREN.BARTH@MYFWC.COM

When the public calls in about a fear or a concern about bats, we're the biologists who answer. Whether the concern is about seeing a bat during the day, bats living in the attic, or someone being bitten by a bat, we're there to provide level-headed advice on how to be safe and coexist with bats. The Wildlife Assistance Program has been working steadily to help prevent and resolve human-bat conflicts in Florida, and every year our staff face wild stories, strange situations, and challenging conversations. We would like to give the Florida Bat Working Group an update on our Program's challenges, successes, staff increases, and goals for expanded outreach and education throughout the state.

HISTORY OF THE UNIVERSITY OF FLORIDA BAT HOUSES AND THE POTENTIAL FOR FUTURE RESEARCH

JACQUELINE BELWOOD, GEORGIA HIGHLANDS COLLEGE AND USGS (UNITED STATES GEOLOGICAL SURVEY) PACIFIC ISLAND ECOSYSTEMS RESEARCH CENTER, JBELWOOD@ATT.NET

The University of Florida in Gainesville (UF) is home to the world's largest man-made bat houses, which are (unofficially) estimated to house between 400,000 and 500,000 Brazilian (Mexican) Free-tailed Bats (*Tadarida brasiliensis*) after young are born in early summer. The history of the bat houses, and their construction and preservation will be described. Key players include two Florida governors, eco-minded pest control professionals and graduate students at UF, local middle school students, and members of the public. The UF bat houses, the first of which dates to 1991, are now iconic structures in Gainesville and on campus, where several hundred visitors per night observe spectacular bat exit flights on warm-weather evenings. Despite their almost 30-year history, UF's bats have never been formally studied. Starting in the spring of 2025, two now-retired former UF graduate students who studied bats early in their careers have begun a study to determine basics about the biology of these animals and their impacts. Their first project is to determine what the bats eat. The bats are estimated to consume about 2000 pounds of insects nightly. In Texas, the same bat species has been documented to consume at least 40 species of economically important pests including corn earworms (*Helicoverpa zea*) and fall armyworms (*Spodoptera frugiperda*), which are major pests of sweet corn in Florida. Other potential studies on UF's bats will be outlined.

FLIGHTS OF THE SWAMP BATS: AERIAL TELEMETRY ACROSS EVERGLADES RESTORATION

JONAS BORKHOLDER, FLORIDA FISH AND WILDLIFE RESEARCH INSTITUTE, JONAS.BORKHOLDER@MYFWC.COM

Understanding how wetland restoration and changes in hydrology affect wildlife is increasingly urgent but remains understudied, particularly for bats. South Florida has experienced development in areas now slated for hydrologic restoration as part of the Comprehensive Everglades Restoration Plan, the largest hydrologic restoration project in the United States. We previously investigated the effects of hydrological restoration in the Florida Everglades on the endangered Florida bonneted bat (*Eumops floridanus*) using acoustic surveys across a restoration gradient. We found significantly higher activity of *E. floridanus* in the reference and fully restored zones and positive responses to several characteristics associated with restoration such as hydroperiod and water depth. To complement this research, we attached break-away VHF collars to 4 males and 3 females captured within Fakahatchee Strand Preserve State Park in March 2024, and tracked them to 6 new roosts; all located within pristine reference sites containing freshwater forested wetlands. To track nightly foraging movements, Copperhead Environmental Consulting conducted a total of 8 aerial telemetry surveys for an average of 4.6 hours each night. Probability contours were created to represent likely foraging areas and we calculated the proportion of land cover classes within each contour. Dominant foraging habitats used were woody wetlands and emerging herbaceous wetlands. Although two bats foraged along remaining canals within the project area, most foraging occurred in natural habitats in adjacent reference areas. We also documented 5 night roost areas. Our results inform management decisions and suggest hydrological restoration efforts within the Everglades ecosystem will likely benefit this species.

ANALYSIS OF BAT CALLS IN CENTRAL AND SOUTH FLORIDA, COMPARING SOFTWARE OUTPUTS WITH MANUAL VETTING.

JOHN CHENGER, BAT CONSERVATION AND MANAGEMENT, INC., JCHENGER@BATMANAGEMENT.COM

Passive acoustic monitoring is a vital tool for studying bats and informing management decisions. With the proposed listing of the tricolored bat (*Perimyotis subflavus*, PESU) as a federally endangered species, and preference for non-invasive survey techniques, we evaluated the performance of two auto-classification software programs, Kaleidoscope Pro and SonoBat 30, for identifying PESU and other bat calls, incorporating manual vetting for comparison. Bat Conservation and Management conducted acoustic surveys in central and South Florida from May to June 2024. We first analyzed how each software program categorized recordings; bat species, unknown bat, or noise. Then, we then compared the number of calls confidently classified by each program, assessing agreement with manually vetted calls, which were considered the “true classification” due to the inability to verify species identity in free-flying bats. Agreement rates varied between the software programs. Across the projects, SonoBat and manual vetting agreed the majority of the time, while Kaleidoscope and manual vetting had a lower percentage of agreement. Kaleidoscope classified more recordings to species, whereas SonoBat was more conservative, assigning more calls to the “unknown” category. These differences highlight the importance of accurate species classification when assessing bat occupancy and abundance for conservation and management decisions.

FLORIDA DEPARTMENT OF TRANSPORTATION UPDATE: WHAT FDOT IS DOING TO PROTECT BATS IN FLORIDA

KATASHA CORNWELL, FLORIDA DEPARTMENT OF TRANSPORTATION, KATASHA.CORNWELL@DOT.STATE.FL.US

Providing an overview of conservation measures the FDOT Office of Environmental Management implements to protect bats on state transportation projects.

BAT HABITAT CONSERVATION PLAN FOR LARGE-SCALE VEGETATION MANAGEMENT

SAM FREEZE, ICF, SAMUEL.FREEZE@ICF.COM

Duke Energy operates and maintains energy production and transmission facilities in seven states: Florida, Indiana, Kentucky, Ohio, North Carolina, South Carolina, and Tennessee. Maintenance includes pruning and removing vegetation along more than 380,000 miles of rights-of-way (ROWs) to ensure system reliability and meet state utility commission requirements. Large portions of these ROWs are within the range of federally listed bat species, which are protected under the Endangered Species Act. Duke Energy is also currently implementing an aggressive clean-energy transition to achieve its goal of net-zero emissions. These construction projects would include tree clearing and associated vegetation management, which could result in “take” of federally listed species. Duke Energy is developing a 30-year Habitat Conservation Plan (HCP) to cover seven bat species: Florida bonneted bat, gray bat, hoary bat, Indiana bat, little brown bat, northern long-eared bat, and tricolored bat. The HCP describes the effects of vegetation management activities on the seven bat species, proactive conservation measures to offset potential take, and approaches to long-term monitoring and adaptive management.

FYCCN PROGRAM OVERVIEW & BAT KIT SPOTLIGHT

BENJAMIN HINES, FLORIDA YOUTH CONSERVATION CENTERS NETWORK/ FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, BENJAMIN.HINES@MYFWC.COM

The Florida Youth Conservation Centers Network is a strategic initiative of the Florida Fish & Wildlife Conservation Commission, aimed at "Creating the Next Generation that Cares" about Florida's wildlife and natural resources. Through our youth conservation centers and network partners, we expand outdoor education programming in the fields of archery, ethical angling, paddlesports, and wildlife discovery. This brief presentation will review the program, highlight a few local partners in the North Central region, and showcase one of our educational kits loaned to partners - the bat kit.

SOUTHEASTERN MYOTIS (MYOTIS AUSTRORIPARIUS) USE OF URBAN STORMWATER SEWER SYSTEMS

ALAN IVORY, UNIVERSITY OF FLORIDA, ALANIVORY34428@UFL.EDU

Urbanization has forced many animals to make use of environments altered by humans. Our study focuses on how wildlife utilizes stormwater sewer systems (SSSs) in Alachua County, Florida. We employed camera traps within SSSs, conducted field surveys, and analyzed remotely sensed data to document the presence and behavior of various species within these systems. Additionally, we developed occupancy models for one of the most common species we observed, the southeastern myotis (*Myotis austroriparius*). Our research uncovered that *Myotis* species often roost, navigate, and feed within many of the sampled sites. The data indicate that these bats favor smaller SSSs with minimal disturbances from aboveground impervious surfaces, particularly those located farther from pipe entrances. Based on our findings, we offer recommendations for making stormwater management practices more wildlife-friendly and discuss the potential for SSSs to serve as artificial roosts for these bats.

A BATTY SUMMER AT FLORIDA'S NAVAL INSTALLATIONS

JADARIUSZ JACKSON, FAUNA CONSERVATION & ANALYTICS, JD@FCANALYTICS.INFO

With the recent proposal to up-list the Tri-colored bat to endangered status, land managers need to fill data gaps related to the species composition at their properties. To help fill these data gaps, we conducted bat surveys at three Navy installations in the state of Florida. At each base, mist netting was conducted at a minimum of six sites.

Acoustic detectors were deployed at six sites, for three nights at each. Telemetry was conducted for any rare, threatened or endangered species captured. We captured a total of 24, 67 and 6 bats at Naval Station (NS) Mayport, Naval Air Station (NAS) Pensacola and NAS Whiting Field, respectively. The total bats captured across all bases represented seven total species including: The Tri-colored bat (1), Northern Yellow bat (5), Seminole bat (2), Southeastern myotis (70), Brazilian Free-Tailed bat (2), Evening bat (10), and the Big brown bat (7). Additionally, the Eastern-red bat and Hoary bat's presence were supported by acoustically derived maximum likelihood estimates (MLE) of <0.05 . In conclusion, NS Mayport had the highest species richness likely due to its diversity of high-quality roosting and foraging habitat. NAS Whiting Field had the lowest species richness and abundance. This could be a result of the base having overall lower quality habitat and decreased prey availability from heavy pesticide usage. NAS Pensacola had the highest abundance possibly resulting from their regular use of forest management practices. The one tricolored bat that was captured at NS Mayport was tracked for four consecutive days.

"BAT AWARENESS TRAINING" FOR WILDLIFE CONTROL OPERATORS

SHELLY JOHNSON, UNIVERSITY OF FLORIDA, SHELLY.JOHNSON@UFL.EDU

UF/IFAS Extension is developing a professional development training for wildlife control operators and/or anyone who conducts bat exclusions. As part of the new Bat Friendly Florida project, this "Bat Awareness Training" will be available online as a self-guided course with continuous enrollment. Participants completing the training will receive a certificate from UF/IFAS Extension and designation as a Florida Bat Friendly Wildlife Control Operator. Outreach and education materials will also be developed for homeowners and building/structure managers once the training portion of the project is completed. This comprehensive curriculum is still in development and will benefit from collaborations with agencies and organizations involved in bat conservation and management in Florida. Please contact Dr. Shelly Johnson (shelly.johnson@ufl.edu) for more information about contributing to this project.

TRIALING DRILLED TREE CAVITIES TO SUPPLEMENT FLORIDA BONNETED BAT ROOSTING HABITAT

JILLIAN JOSIMOVICH, U.S. FISH AND WILDLIFE SERVICES, JILLIAN_JOSIMOVICH@FWS.GOV

Florida bonneted bats (*Eumops floridanus*) are federally endangered under the Endangered Species Act, primarily due to habitat loss. These bats are harem roosters that are known to occupy cavities in living and dead trees, including retired red-cockaded woodpecker (RCW; *Picoides borealis*) cavities. RCWs are reliant on mature longleaf pine (*Pinus palustris*) forests because they excavate their own cavities in old growth trees, many of which have been lost to human development. RCWs were recently downlisted from federally endangered to threatened because their populations have rebounded over the past several decades, largely due to the strategic use of artificial cavity insert boxes and drilled cavities installed in longleaf pine trees by conservationists and natural resource managers. These artificial cavities supplement RCW habitat while pine forests regenerate, as it may be decades before there enough old trees to support stable populations of RCWs without intensive management. Since naturally excavated RCW cavities are scarce, we hypothesize that Florida bonneted bat roosting habitat is limited, especially at the northern extent of their range where there are fewer trees that support large cavities relative to the southwestern part of their range (e.g., royal palms [*Roystonea regia*], bald cypress [*Taxodium distichum*]). Consequently, we developed a modified RCW cavity drilling method to create cavities intended for Florida bonneted bats at Avon Park Air Force Range. This talk will discuss our progress installing drilled cavities thus far and our ideas for post-installation monitoring.

UPDATES ON TCB (TRICOLORED BAT) LISTING

LORRAINE KETZLER, U.S. FISH AND WILDLIFE SERVICES, LORRAINE_P_KETZLER@FWS.GOV

We'll share updates regarding the TCB (Tricolored Bat) federal listing.

EXPLORING THE LTBMP WEBSITE

LILY MARTIN, FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, LILY.MARTIN@MYFWC.COM

I will be giving a short overview of the new LTBMP website as a resource for partners to learn about acoustic monitoring and view data on bat detections statewide.

THE BATS OF PINE ISLAND SOUND

MIKE MILLS, SANIBEL CAPTIVA CONSERVATION FOUNDATION, MMILLS@SCCF.ORG

Pine Island Sound covers almost 52,000 acres and consists of unique habitats such as salt marshes, mangrove swamps, and seagrass beds. Located in southwest Florida off the coast of Fort Myers and Cape Coral in Lee county, it borders five major barrier islands: Sanibel Island, Captiva Island, North Captiva Island, Cayo Costa, and Pine Island. The Sanibel-Captiva Conservation Foundation (SCCF) began acoustic monitoring on Sanibel Island in November 2023 and expanded its efforts to every major barrier island in Pine Island Sound. This presentation will share the preliminary results from this monitoring and discuss the future implications of Florida barrier island bat research.

HABITAT DIVERSITY AND ITS ROLE IN TRICOLORED BAT CONSERVATION IN FLORIDA: INSIGHTS FROM STATEWIDE ACOUSTIC MONITORING

MARIA MONARCHINO, FLORIDA FISH AND WILDLIFE CONSERVATION, MARIA.MONARCHINO@MYFWC.COM

The tricolored bat (*Perimyotis subflavus*) ranges throughout Florida and is frequently detected acoustically. Although white-nose syndrome has yet to be detected in Florida, recent FWC data suggests tricolored bat population declines. Previous acoustic analyses found year-round activity and identified habitat diversity within a 50-meter buffer as a key predictor of increased activity. This analysis refines those findings by assessing whether any habitat diversity is sufficient or if specific habitat pairs best support tricolored bat activity. As part of FWC's statewide Long-term Bat Monitoring Program, we recorded stationary acoustic data up to four times per year, from 2021-2024 at 138 detector locations. We developed null, global, and quarterly co-occurrence models to assess whether habitat pairs occurred more frequently than expected at detectors. The null model, which excluded activity data, suggested that no habitat pairs within the buffer occurred more frequently than expected. However, incorporating bat activity into the global model revealed strong associations, indicating nonuniform increases near certain habitat pairs. The strongest positive co-occurrence was between hardwood forested uplands and freshwater non-forested wetlands. Urban areas also had positive significant associations, particularly with hardwood forested uplands and high pine and scrub. The quarterly models, which analyzed quarterly activity separately, revealed that there was underlying seasonal variation in habitat pairs highlighted by the global model. For example, the strong association between hardwood forested uplands and freshwater non-forested wetlands fluctuated seasonally. These findings suggest that while habitat diversity matters, understanding habitat interactions is key to effective tricolored bat management and spatiotemporal insights.

FILLING THE GAPS: FLORIDA BONNETED BAT ROOST SELECTION AND POPULATION STRUCTURE BETWEEN KNOWN POPULATIONS

ADAM NASH, FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, FLORIDA FISH AND WILDLIFE RESEARCH INSTITUTE, ADAM.NASH@MYFWC.COM

The Florida bonneted bat (*Eumops floridanus*) is a federally endangered species with an extremely restricted geographic range. The known roosts of *E. floridanus* are divided into four distinct regions separated by distances of 100-250 km: three western populations in natural areas (Polk, Charlotte and Collier Counties), and one eastern population in an urban area (Miami-Dade County). Previous research revealed that the genetic structure of the urban population is evolutionarily distinct from the three western populations, suggesting minimal to no gene flow despite the species' long-distance foraging behavior. Although previous acoustic surveys detected *E. floridanus* between these populations, little is known about the genetic structure or roost selection of these bats. To better understand the lack of gene flow and possible reproductive barriers between populations, we sampled the region between the urban population (Miami-Dade County) and the closest western population (Collier County). Mist nets, coupled with acoustic lures, were used in 20 survey sites over 28 nights across the Everglades. Nine *E. floridanus* were captured in sites where the species had never been captured and fitted with VHF transmitters using break-away collars. Despite extensive aerial and ground-based radio telemetry efforts, only three bats captured in Everglades National Park were tracked to urban roosts in Miami-Dade County. Genetic samples are currently being analyzed at the University of Florida using genotyping by sequencing (GBS) libraries as part of a comprehensive analysis of population structure across the species' range.

ALL ABOUT IPAC

SANDRA SNECKENBERGER, USFWS (UNITED STATES FISH AND WILDLIFE SERVICE), SANDRA_SNECKENBERGER@FWS.GOV

We will provide information on what is IPAC and how it streamlines the consultation process. We will answer specific questions about how IPAC is used in consultations involving bats and bat habitat in Florida.

BAT SIGNALS: TRACKING TRICOLORED BATS TO WINTER ROOSTS WITH RADIOTELEMETRY.

LISA SMITH, FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, LISA.SMITH@MYFWC.COM

Diurnal roosts are critical habitat for bats, serving as essential sites for hibernation, mating, and rearing young. In winter, roost selection is particularly vital because bats rely on torpor to conserve energy amidst resource shortages while still requiring protection from near-freezing temperatures. In subtropical regions where winters are shorter, milder, and prey is available on most nights, bats may have greater flexibility in roost site selection. We investigated winter roosting behavior of tricolored bats (*Perimyotis subflavus*) in north Florida across three winters (2021-22, 2022-23, and 2023-24) using radiotelemetry. We tracked 50 tricolored bats captured from culverts, small caves, and mist nets to their roost daily until the transmitter died or fell off. Tricolored bats used an average of two roosts during the tracking period, however the number of roosts varied significantly by roost type. Bats roosting in culverts and caves used fewer roosts for longer durations than tree-roosting bats. For bats roosting in trees, we fit logistic regression models in the Stan computational framework using the brms package in program R to assess roost site selection. The best model for evaluating roost selection of all bats at the tree level was tree species. The probability of a bat selecting a certain tree species was greatest for palms, followed by cypress, and large-leaved deciduous trees. Additionally, tricolored bats selected trees with Spanish moss or dead leaves, in areas with a greater proportion of subcanopy trees and high tree species richness. These findings highlight the importance of conserving diverse forest habitats and retaining structural features like dead foliage and Spanish

moss to support tricolored bats. The varied roosting patterns of tricolored bats, including their use of multiple roost types and a wide variety of tree species, underscore the importance of comprehensive monitoring and management efforts to enhance conservation of the species.

FROM REHAB TO RESEARCH: MOTUS TAGGING TREE BATS AND A WAYWARD SILVER-HAIRED BAT (*LASIONYCTERIS NOCTIVAGANS*)

JENNY WHITE, UCF (UNIVERSITY OF CENTRAL FLORIDA), FLORIDA BAT CONSERVANCY / FWRI (FISH AND WILDLIFE RESEARCH INSTITUTE), JENNIFER.WHITE@UCF.EDU

The MOTUS Wildlife Tracking System (Motus) is an international collaborative research network that uses automated radio telemetry to track wildlife. Data collected from Motus has improved our understanding of migratory animals and is being used for various conservation efforts. On October 30, 2024 an adult female silver-haired bat (*Lasionycteris noctivagans*) was found weak and emaciated along the east-central Florida coast. The bat was taken into rehabilitation, where it recovered enough to receive a Motus tag in November as part of a recent effort by the Florida Fish and Wildlife Conservation Commission to research migratory patterns of tree bats. However, the adhesive used for attachment restricted shoulder mobility, necessitating an extended overwintering period. Long-term captivity presents challenges in maintaining bat health and natural behavior, but my March, a new Motus tag as successfully applied, and the bat was released in a nearby forest. We discuss the logistical and ethical challenges of prolonged care for wild bats and the importance of collaboration for bat conservation. We explore lessons learned regarding Motus tagging techniques, and the anticipated data collection from the Motus network for bats in Florida contributing to telemetry-based studies for migratory bat species.

PROTECTING FLORIDA BATS: EXCLUSION AND VERIFICATION TECHNIQUES FOR THE I-75 & BROADWAY BRIDGE REDECKING PROJECT

JOEL WIXSON, SWCA, JOELWIXSON@GMAIL.COM

During 2023 and 2024, we had the opportunity to work on a construction project that involved the redecking of the I-75 bridge over Broadway Ave east of Tampa. Due to the potential for direct harm to the roosting population of Brazilian free-tailed bats (*Tadarida brasiliensis*), the bats needed to be excluded from the structures prior to maternity season (April 16 to August 14) and prior to the commencement of construction. Florida bats play a crucial role in local ecosystems by controlling insect populations, with a single bat eating hundreds to thousands of mosquitoes and other insects per night. It is illegal to kill or harm bats in Florida and exclusion devices need to be in place at least four days before maternity season starts. This presentation discusses the techniques used to successfully exclude bats from the I-75 bridge and verification techniques used to determine the roost cavities were vacant.

THANK YOU!

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