

PENNSYLVANIA GAME COMMISSION

Small-footed myotis (*Myotis leibii*) Mist-Net/Telemetry Protocol

Mist-netting

- Refer to US Fish and Wildlife Service (USFWS) Mist Net Sampling Protocol
- Refer to PA Game Commissions Bat Handling/disinfection Protocol for Summer Bat Field Studies for decontamination
- **The PGC Wind Energy Project Coordinator (WEP) MUST be contacted prior to commencing mist net surveys for project review, approval, and PGC contact list.**
- In addition to the USFWS protocol, when netting in an area where *M. leibii* are known
 - When netting trails nets should extend into the forest. *M. leibii* tend to fly along the forest edge.

Telemetry

Objective

- To identify and characterize roost areas (trees, buildings, or rocky areas)
- To identify and characterize foraging areas and travel corridors.

Protocol

- Tagging
 - **ONLY** attach transmitters to adults
 - Banding
 - Do not attach arm bands or take wing punches without PGC approval: banding materials and ID numbers must be approved prior to use.
 - Transmitters
 - With the lighter transmitters you should be able to be close to 5%
 - Any transmitter that fits weight rule may be used, but the Pip4 Ag337 from Lotek Wireless are the lightest with a range of 0.26g to 0.29g
 - Try not to exceed 5% and **DO NOT** exceed more than 10 % of the bats body weight
 - For pregnant females **DO NOT** exceed 5% of the bats body weight
- Equipment
 - Receivers
 - The receiver can be a scanning or non-scanning type

- Antennas
 - Antennas must be tuned to the frequencies of your transmitters and receiver (172 MHz)
 - Antennas should be at least a 2-element (H-antenna) or 3+ element (yagi)
- Transmitters
 - Transmitters should be tuned to 172 MHz to match the PGC
 - Approval and justification required in advance from WEP Coordinator
 - Transmitter application
 - Transmitters are attached with glue (Turbot or old style skin-bond).
 - Using scissors, remove a small patch of fur from the mid-dorsal region (between shoulder blades), then glue the transmitter to the bat's skin with a latex, medical adhesive (Skin-Bond Cement or Osto-Bond).
 - Glue is applied to the bat and transmitter separately, allowed to dry a couple minutes until tacky and then joined together to form a secure bond according to manufacturer recommendations
- Level of effort
 - Maximum number = 6 bats per season
 - Transmit *M. leibii* between May 15 – August 15 to obtain maternity colony and foraging area data
 - Transmit *M. leibii* between September 15 – October 31 captured around hibernacula to determine fall activity
 - Minimum of 3 nights and maximum 5 nights of telemetry per bat
 - Minimum of 10 hours a night with a minimum of 3 successful triangulations per hour totally 30 successful triangulations per night
 - Lead biologist should have experience conducting telemetry on flying bats, be familiar with triangulation programs and be able to overcome typical field application difficulties (i.e. bounce)
 - For each day bats are documented roosting at a particular day roost location a minimum of 1 emergence count is required.
- Data sheets & Data
 - Process data by individual animal and provide shapefiles of data points, minimum convex polygons of evening activity and fixed kernel utilization distribution of 95%, 75%, and 50% of the activity data.
 - PGC data sheets **MUST** be completed **see attached**
 - Bat-Netting/Trapping Site Survey Record
 - Bat Measurement and Capture Data Form
 - Bat Transmitter Detection Record
 - Day Roost Forms
 - Bat Emergence Form
 - Bats' activity schedule referenced to general locations on a map
 - Foraging and Roosting as a minimum for activity remarks
 - Fall telemetry of males should include amount of time within mine, foraging & roosting.