

Bat Surveys

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The Calvert County Natural Resources Division is partnering with the Maryland Biodiversity Project to document to species diversity of bats found in Calvert County. Using hand held Echo Meters and cell phones, we will document the presence of bats throughout the county. Surveying will be conducted through Stationary Point Surveys.

BACKGROUND

This study was inspired by a study conducted by Ben Neece . He established stationary, continuous monitoring at several locations in Calvert County. In 2018, he surveyed two locations at Flag Ponds Nature Park and one location at Hallowing Point Park. In 2019, he focused his efforts on Flag Ponds Nature Park.

Species expected in Calvert County are listed, along with their species code used in Table 1. Some bat species have very similar echolocation calls, so not all species can consistently be identified with complete certainty. Those with similar calls are grouped as indicated in their species code.

- big brown bat *Eptesicus fuscus* EPFULANO
- silver-haired bat *Lasionycteris noctivigans*; EPFULANO
- eastern red bat *Lasiurus borealis* LABONYHU
- evening bat *Nycticeius humeralis*; LABONYHU
- hoary bat *Lasiurus cinereus*; LACI
- eastern small-footed bat (*Myotis leibii*; MYLE
- little brown bat *Myotis lucifugus* MYLUSO
- Indiana bat *Myotis sodalis*; MYLUSO
- northern long-eared bat *Myotis septentrionalis*; MYSE
- tri-colored bat *Perimyotis subflavus*; PESU
- Mexican free-tailed bat *Tadarida brasiliensis*; TABR

TABLE 1. Number of nights in which bats were detected at Flag Ponds Nature Park (Cell 960) and Hallowing Poing Park (Cell 16064) in 2018 and 2019. Myotis indicates any identified or unidentified *Myotis* species. A * indicates species affected by white nose syndrome (WNS), but does not indicate that we found individuals with signs of WNS. Please see the report *2018 and 2019 Maryland Bat Surveys* by Ben Neece for more details.

Cell	Site	EPFULANO	LABONYHU	LACI	MYLE*	MYLUSO*	MYSE*	Myotis*	PESU*	TABR
2019-960	1	3	3	0	0	0	0	1	3	0
2019-960	2	4	4	3	0	0	0	0	4	0
2018-960	1	3	4	2	0	0	0	0	4	0
2018-960	2	4	4	2	0	0	0	0	4	0
2018-16064	4	4	4	1	0	0	0	0	3	0

VOLUNTEER DUTIES

- Explore County-owned property to record bat calls. Surveys on private property will be limited to volunteers' homes.
- Properly label recording files with date and species, making sure GPS data are included in the files
- Upload recordings to an on line storage site (Google Drive or SharePoint)
- Map locations accurately on paper maps or through online mapping via iNaturalist.
- Identify the habitat characteristics of survey locations.

REQUIREMENTS & EXPECTATIONS

- Work independently or in teams
- Be out at night between 9 pm-midnight (or later)
- Ability to transfer recordings from phones or tablets to online storage locations

SKILLS NEEDED

- Ability to work independently
- EchoMeter Touch 2 or similar bat detector (limited number available for checkout)
- Access to a smart phone or tablet with EchoMeter app installed

Optional, but Preferred, Skills

- Access to a smart phone or tablet with iNaturalist app installed
- Ability to use Kaleidoscope software for bat identification

TRAININGS

- Orientation through a workshop, in-person, or via phone to understand the project.
- Orientation and training on mapping via paper and online.
- On-going opportunities to join scheduled bat surveys

EQUIPMENT, MATERIALS & SUPPLIES NEEDED

- Smart Phone or Tablet (Android or iPhone)
- Echo Meter Touch (a few are available to borrow from staff, or you can purchase your own from: <https://www.wildlifeacoustics.com/products>)
- Echo Meter App on your phone or tablet
- Weather thermometer or local weather app.
- Data sheet (to be developed in 2021)

PROCEDURES

1. Make sure your cell phone is fully charged. The meter plugs into your charging port while recording.
2. Recordings should be made when evening temperatures are above 60F.
3. Start about 30 minutes before sunset.
4. Use the "Live Mode" and begin recording.
5. Continue recording, allowing the app to make identifications, until it seems that no more bats are being detected, typically after about 15 minutes of no identification.
6. You can review the recordings and delete any that have no identifications or are noise only.

SAVING AND SHARING DATA

- More information will be developed in 2021.
- If possible, add screenshots of the calls to iNaturalist.

SUMMARY OF 2020 ACTIVITIES

This was the first year of the project with intentions to continue the study in future years. The project was stalled due to the coronavirus pandemic whereby new projects were put on hold. The lack of Echo Meters also limited participation. Some volunteers continued to monitor independently.

Prior to the pandemic shutdown, we met twice to plan this new endeavor. We developed a resource guide of the bats that have been, or are potentially, found in Calvert County. We also established an overlay of the USGS Quad map, similar to what was used in the Herp Atlas, to help document, track and map our sightings.

Calvert County Technology Services installed Kaleidoscope on Karyn's computer and she was able to gain a basic understanding of how to edit the recordings.

- Although it seems like you have to pay, after the free trial period is up, you can use the Viewer version for almost everything we need to do. <https://www.wildlifeacoustics.com/products/kaleidoscope-pro>
- Here is a useful video done to help understand how to upload your recordings using Kaleidoscope. https://www.youtube.com/watch?v=1AgxZh_mfOc

VOLUNTEER EFFORTS

Seven volunteers responded to this opportunity, with one volunteer (Karen Anderson) reporting 2.75 hours. We have 22 Fans of the program.

FUTURE PLANS

- In late winter set up a meeting to re-acquaint volunteers about this project.
- Gather the informal observations made throughout 2020.
- Develop data sheet and protocol for volunteers.
- Apply for small grants to fund the acquisition of more Echo Meters.
- Better integrate the iNaturalist observations, additional volunteers, and field explorations.
- Train volunteers on using Kaleidoscope to process recordings.

Supporting Calvert County's nature parks and natural spaces



CALVERT STEWARDS

VOLUNTEER PROGRAM

A partnership between Calvert Nature Society and Calvert County Natural Resources Division

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CALVERT STEWARDS VOLUNTEER PROGRAM
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Volunteer Portal <https://calvertstewards.galaxydigital.com/>

Calvert Nature Society: www.calvertparks.org

Calvert County Natural Resources Division:
www.calvertcountymd.gov/NaturalResources

