



Loudoun County Bat Monitoring Project

Blueridge Center for Environmental Stewardship Site Report

Loudoun County Bat Monitoring Project Summary

- Deployed 13 automated ultrasonic bat recording monitors across the county
- Sites are located in 4 North American Bat Monitoring Program (USGS project) grids
- Monitoring Locations
 - **Grid 125482**
 - Banshee Reeks Nature Preserve
 - Little Tree Huggers School
 - Philip Bolen Park
 - Beaver dam Reservoir
 - **Grid 78210**
 - Morven Park
 - Rust Sanctuary
 - River Creek Confluence Park
 - **Grid 86574**
 - JK Black Oak
 - Temple Hall Farm
 - Lost Corner Farm
 - Riverside on the Potomac
 - **Grid 69848**
 - Blue Ridge Center for Environmental Stewardship two locations

Bat Activity by Site

- Number of recordings is directly related to the number of times that bats pass the recorder (bat pass).
- 3.6 times more total recordings in May when compared to April. Bats are more active in warmer weather.
- Blueridge Center for Environmental Stewardship 1 was deployed on April 2nd and had a total of 6,201 recordings in April and May
- Blueridge Center for Environmental Stewardship 2 was deployed on May 14th and had 3,862 total recordings.

Sites	April Total Recordings	May Total Recordings
Morven Park	3934	14687
Little Tree Huggers	3460	9380
JK Black Oaks	3433	10304
Rust Sanctuary	3126	9726
Banshee Reeks	3088	9204
River Creek	2000	3628
Riverside at the Potomac	1979	5992
Philip Bolen	787	4734
Blue Ridge Center	751	5450
Lost Corner Farm	713	2453
Temple Hall	558	2304
Blue Ridge Center 2	0	3862
Beaver Dam Reservoir	0	3737
TOTAL	23829	85461

Auto Identification of Bats by Echolocation Call

- Software can be used to identify bat species by comparing echolocation recordings to a database of known bat echolocation calls.
 - Kaleidoscope 5.4
 - Sonobat 4
- Auto ID is not 100% accurate
 - Some species are more easily and accurately identified
 - Some species have very similar calls
- The accuracy of Auto ID can be improved by manual vetting
 - Main task is to establish presence or absence using manual vetting criteria
 - Some assignments will remain ambiguous

Bats Identified at Blueridge Center for Environmental Stewardship 1

Conservation Needs*

- Tier I – Critical
- Tier II – Very High
- Tier III – High
- Tier IV - Moderate

*List of Bats and conservation status in VA from Reynolds, R.J., Fernald, R.T., 2021. A Guide to the Bats of Virginia. Department of Wildlife Resources

Species*	Present	Possible Presence	Not Present
Southeastern Bat			✓
Gray Bat			✓
Eastern Small-footed Bat			✓
Little Brown Bat	✓	✓	
Northern Long-eared Bat			✓
Indiana Bat			✓
Silver-haired Bat	✓		
Tri-colored Bat	✓		
Big Brown Bat	✓		
Eastern Red Bat	✓		
Hoary Bat	✓		
Northern Yellow Bat			✓
Seminole Bat			✓
Evening Bat	✓		
Rafinesque’s Big-eared Bat			✓
Virginia Big-eared Bat			✓
Brazilian Free-tailed Bat		✓	

Bats Identified at Blueridge Center for Environmental Stewardship 2

Conservation Needs*

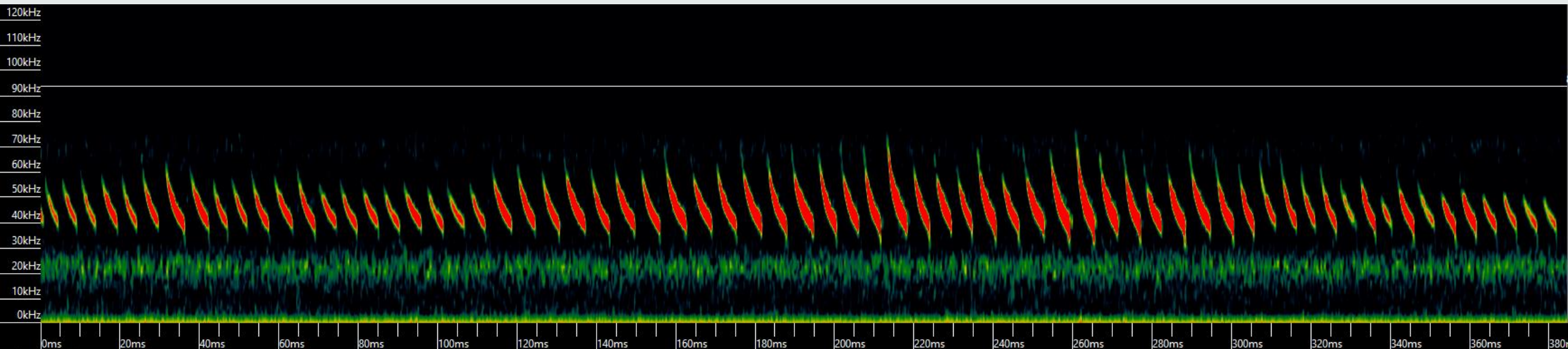
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Tri-colored Bat	✓		
Big Brown Bat	✓		
Eastern Red Bat	✓		
Hoary Bat	✓		
Northern Yellow Bat			✓
Seminole Bat			✓
Evening Bat	✓		
Rafinesque’s Big-eared Bat			✓
Virginia Big-eared Bat			✓
Brazilian Free-tailed Bat	✓		

Evidence for Myotis Bats at Blueridge 1 & 2

- The distinctive shape of the calls (trailing tails) and lack of bounce in the frequency of the calls points to a Myotis species (see below).
- The Fc (characteristic frequency) of the calls is around 39-40 kHz which suggests a Little Brown or Indiana bat. Either of these bats can be in the area and it is difficult to distinguish these two bats by full spectrum analysis as shown below.
- Using a secondary analysis approach the best assignment appears to be Little Brown bat.
- There may be other myotis species present, but the evidence is not strong enough with the current data.



Active Feeding at Blueridge Center for Environmental Stewardship

