

University of Idaho College of Natural Resources

University of Idaho Office of Undergraduate Research

INTRODUCTION & OBJECTIVES

Acoustic monitoring is an emerging non-invasive technique¹ for studying bats, birds, dolphins, and other echolocating animals². This study will analyze echolocation recordings collected in the UI Experimental Forest (UIEF) to identify bat species in northern Idaho and characterize their foraging behaviors.



STUDY AREA

- 8,300 acres
- Four units: West Hatter, East Hatter, Flat Creek, Big Meadow
- MONITOR PLACEMENT
 Three habitat types: open, edge, narrow³
- 16 total monitors

METHODS

- Data collection (May 27-August 10, 2022)
 - Audiomoth monitors for collecting recordings⁴
 - Kaleidoscope Pro software for processing recordings and conducting an automatic species identification⁵
 - Manual species identification and verification

Using Acoustic Monitoring to Detect Bat Species in the University of Idaho Experimental Forest

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CURRENT RESULTS & SPECIES OBSERVED

523 bat calls (1 recorded a

11 species detected





3. SPECIES AUTOMATICALLY IDENTIFIED



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<u>Abbreviation</u>	Common Name # Record	dings
ANTPAL	Pallid bat	3
CORTOW	Townsend's bat	2
EPTFUS	Big brown bat	2
EUDMAC	Spotted bat	0
LASCIN	Hoary bat	31
LASNOC	Silver-haired bat	48
MYOCAL	California myotis	14
MYOCIL	Western small-footed bat	0
MYOEVO	Long-eared myotis	3
MYOLUC	Little brown myotis	4
MYOTHY	Fringed myotis	1
MYOVOL	Long-legged myotis	7
MYOYUM	Yuma myotis	1
PARHES	Canvon bat	0

UI Summer Undergraduate Research Fellowship (SURF) Program Adele Berklund Undergraduate Research Scholar Award Kenneth Hungerford Research Award

CONCLUSION

- According to the Kaleidoscope automatic identification, 11 species of bats were detected in the UI Experimental Forest. There are 14 species of bats native to Idaho⁷.
- Most of the recordings require manual identification, and the automatically identified calls require verification by comparison with recordings from bat call libraries.
- There is more activity in the evening than morning. The peak activity time occurs between 9-10pm followed by a gradual decline with another peak between 3-4am.

FURTHER WORK TO BE COMPLETED

The data displayed here only represents recordings collected May 27th-June 17^{th,} 2022. Data collection will continue through August 10th, 2022, after which detailed manual identification of recordings will be conducted. The objectives of this study are to create a species inventory and to analyze for potential seasonal changes. Patterns relative to weather will also be assessed.

