

Region 4 Inventory and Monitoring Network

Mobile Acoustical Bat Monitoring Annual Summary Report

CY 2012-2013

POND CREEK NATIONAL WILDLIFE REFUGE



The Region 4 Inventory and Monitoring Network coordinated acoustical bat monitoring on 43 National Wildlife Refuges and 2 Ecological Services field offices in Regions 2, 3, and 4 during 2012 and 2013. Surveys will establish baseline inventories of bat species at each station and contribute to a landscape-level understanding of bat population trends and habitat associations. Bat call data were collected using Anabat SD2 detectors along up to 30 mile mobile transects during June and July each year following the procedures outlined in the Mobile Bat Acoustical Survey Protocol (USFWS 2012).

This report summarizes bat calls collected along transects at your station in 2012 and 2013. Calls were classified using Bat Call ID ([BCID] version 2.5a) software and restricted to calls with 5 or more pulses. This annual summary report package contains summary information on transect surveys, species detections, maps of species locations, and a digital folder containing shapefiles and BCID output files. Summary tables include all classified species observations including those that did not have an associated spatial reference.

All submitted call data and survey metadata have been archived and are available on the Mobile Acoustical Bat Monitoring SharePoint site (<https://fishnet.fws.doi.net/regions/4/nwrs/IM/bats>). Bat call files, GPS data, and survey metadata sheets were reviewed for quality assurance prior to generation of this report. Some submitted data were necessarily excluded due to identified errors in collection processes. All acoustical bat data will be summarized in a comprehensive annual report following station-level reports.

POND CREEK NATIONAL WILDLIFE REFUGE

Route Name: PncNWR

Survey date	# bat calls	Route completed?	GPS data?	Survey notes
6/20/2012	60	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QA/QC notes: Data check revealed no errors.
7/5/2012	141	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QA/QC notes: Very first bat call (205958) missing coordinates, interpolated to coordinate location at time 205959 (1 sec differential).
6/11/2013	33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QA/QC: Data check revealed no errors.
6/25/2013	51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QA/QC: Data check revealed no errors.
7/9/2013	179	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QA/QC: Data check revealed no errors.

Species Summary

Below are the results of bat species classification and maps of each bat detection each year generated from automated acoustic bat ID software in BCID version 2.5a. Automated acoustical bat classification has inherent limitations based in part on call quality, species filter constraints, and statistical model agreement parameters. Using a conservative approach to generate robust species classifications, calls with fewer than 5 pulses were not classified; therefore the estimates presented here may under-represent the actual number of bats detected on a survey night. Classified calls were geo-referenced and spatially projected for each survey period to identify relative bat use along transects. Accuracy of call classification varies among species but is expected to be >80% correct. Measures of confidence in species identification for each survey night are available as a maximum-likelihood estimator p-value for each observed species in the BCID output files included with this summary report package. BCID version 2.5a does not classify the following species (Seminole bat - LASE, Northern yellow bat - LAIN, Brazilian free-tailed bat - TABR, Townsend big-eared bat - COTN). If these species occur within your monitoring area, the calls generally will be classified to a species with the closest model agreement or classified to "unknown". Species summary tables include all classified calls including those without a spatial reference. Bat detections without concurrent GPS locations are not represented on subsequent maps.

POND CREEK NATIONAL WILDLIFE REFUGE

Length of transect (miles): 29.95

Annual Summary

	<u>Total observed</u>	<u># Survey nights</u>	<u># Bats/night</u>	<u># Bats/mile</u>
Big brown bat				
2012	9	2	4.5	0.15
2013	15	3	5	0.17
Eastern red bat				
2012	51	2	25.5	0.85
2013	51	3	17	0.57
Evening bat				
2012	28	2	14	0.47
2013	48	3	16	0.53
Hoary bat				
2012	2	2	1	0.03
2013	1	3	0.33	0.01
Little brown bat				
2012	3	2	1.5	0.05
2013	7	3	2.33	0.08

POND CREEK NATIONAL WILDLIFE REFUGE

Length of transect (miles): 29.95

Southeastern myotis

2012	2	2	1	0.03
2013	1	3	0.33	0.01

Tricolored bat

2012	95	2	47.5	1.59
2013	132	3	44	1.47

Unknown

2012	11	2	5.5	0.18
2013	8	3	2.67	0.09

POND CREEK NATIONAL WILDLIFE REFUGE

Length of transect (miles): 29.95

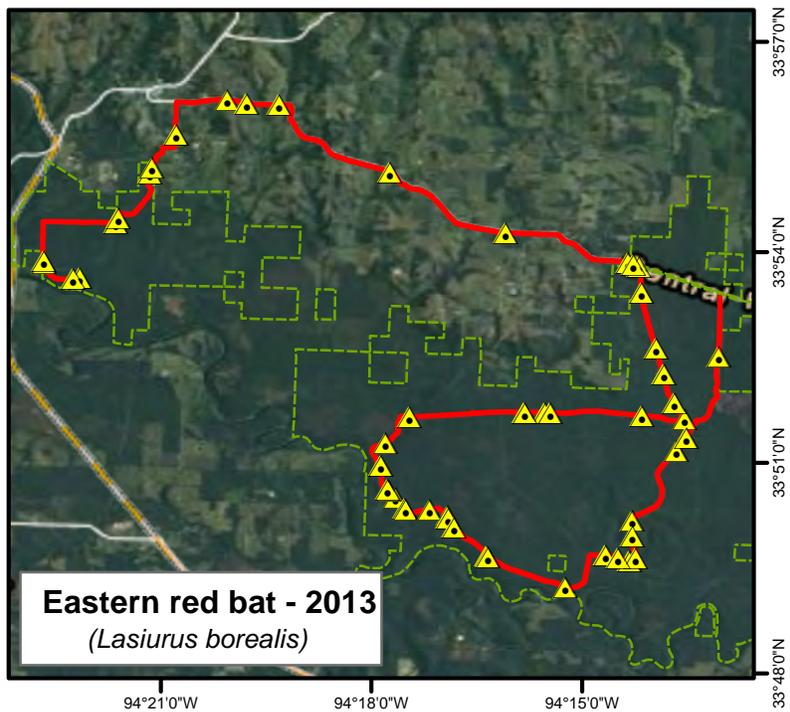
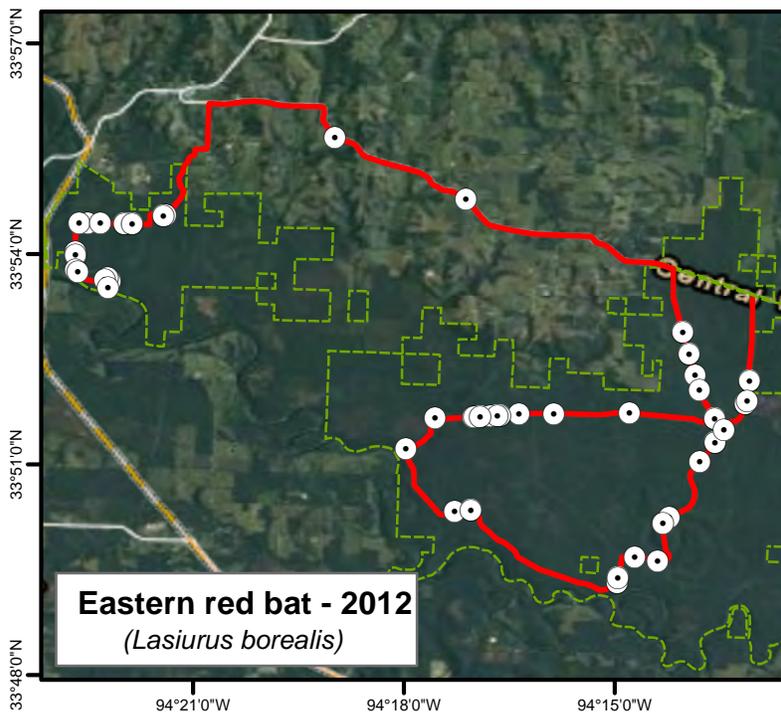
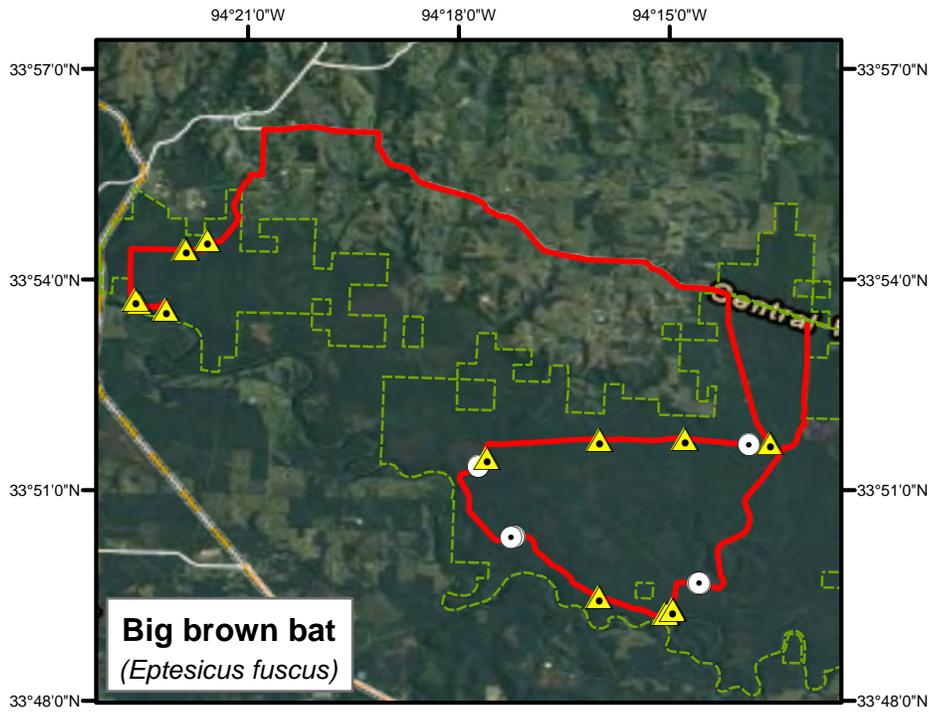
Nightly Summary

	<u>Survey date</u>	<u>Total observed</u>	<u>Bats/mile</u>
Big brown bat			
	6/20/2012	6	0.2
	7/5/2012	3	0.1
	6/11/2013	4	0.13
	6/25/2013	2	0.07
	7/9/2013	9	0.3
Eastern red bat			
	6/20/2012	14	0.47
	7/5/2012	37	1.24
	6/11/2013	8	0.27
	6/25/2013	12	0.4
	7/9/2013	31	1.04
Evening bat			
	6/20/2012	11	0.37
	7/5/2012	17	0.57
	6/11/2013	11	0.37
	6/25/2013	12	0.4
	7/9/2013	25	0.83
Hoary bat			
	6/20/2012	1	0.03
	7/5/2012	1	0.03
	6/25/2013	1	0.03
Little brown bat			
	6/20/2012	1	0.03
	7/5/2012	2	0.07
	6/25/2013	2	0.07
	7/9/2013	5	0.17
Southeastern myotis			
	6/20/2012	1	0.03

	7/5/2012	1	0.03
	7/9/2013	1	0.03
Tricolored bat			
	6/20/2012	23	0.77
	7/5/2012	72	2.4
	6/11/2013	9	0.3
	6/25/2013	20	0.67
	7/9/2013	103	3.44
Unknown			
	6/20/2012	3	0.1
	7/5/2012	8	0.27
	6/11/2013	1	0.03
	6/25/2013	2	0.07
	7/9/2013	5	0.17

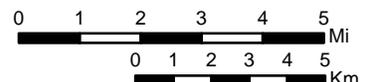


Pond Creek National Wildlife Refuge Bat call locations



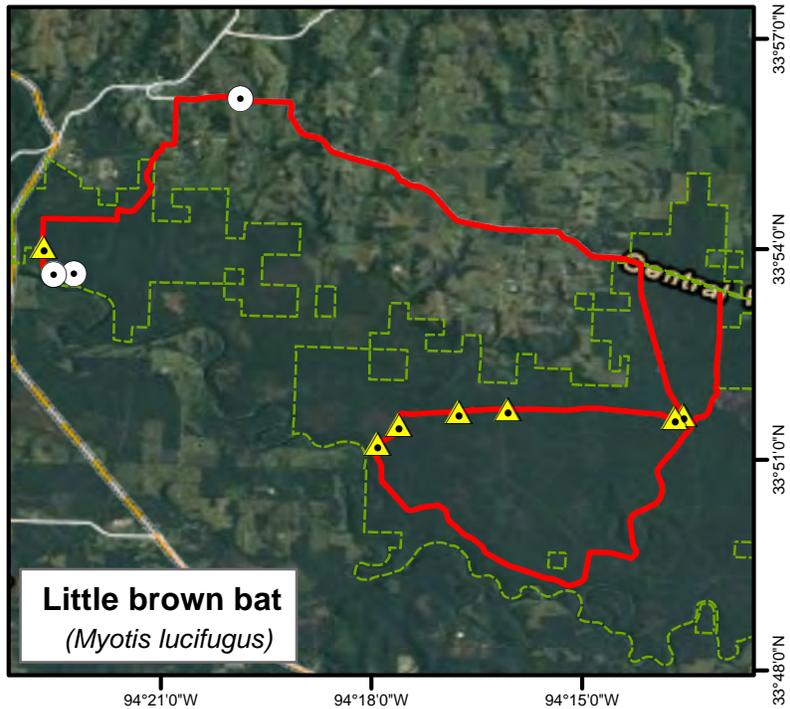
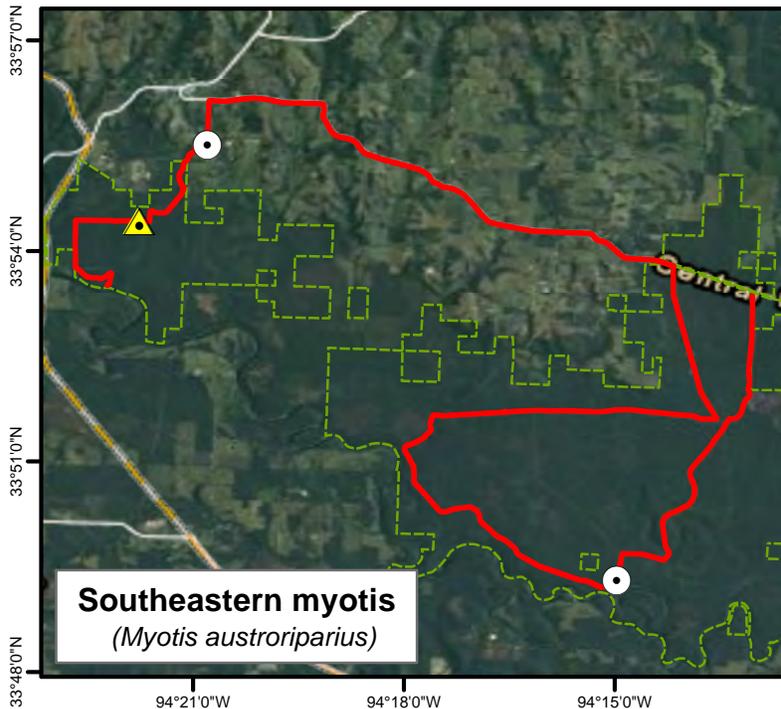
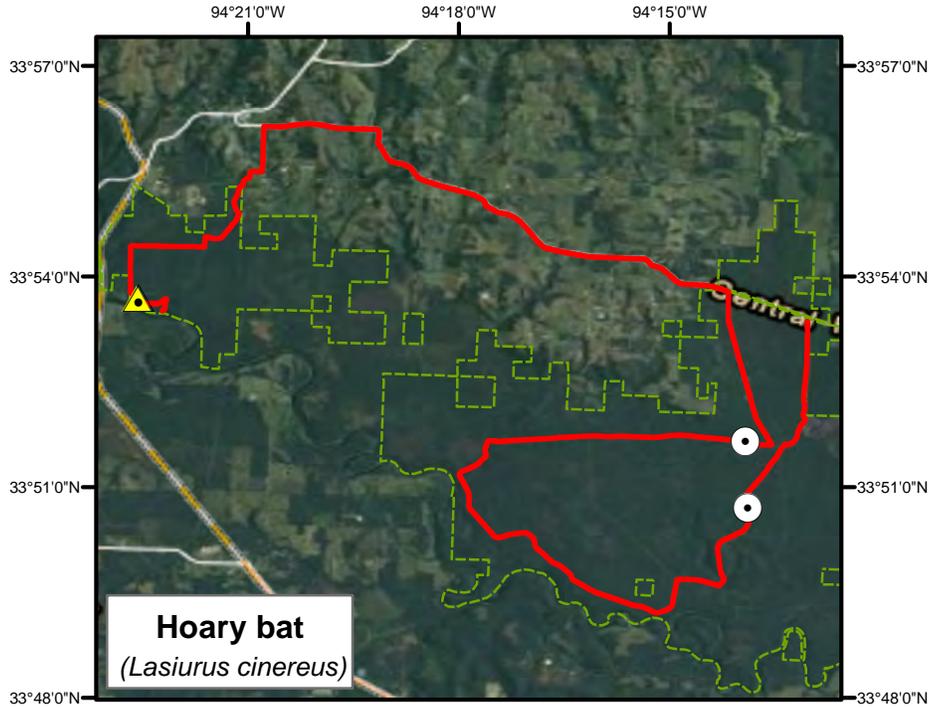
Species locations

- 2012
- ▲ 2013
- Transect route
- - - Refuge boundary



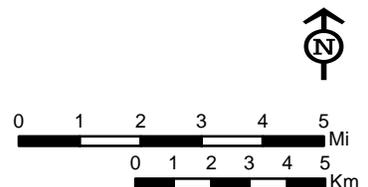


Pond Creek National Wildlife Refuge Bat call locations



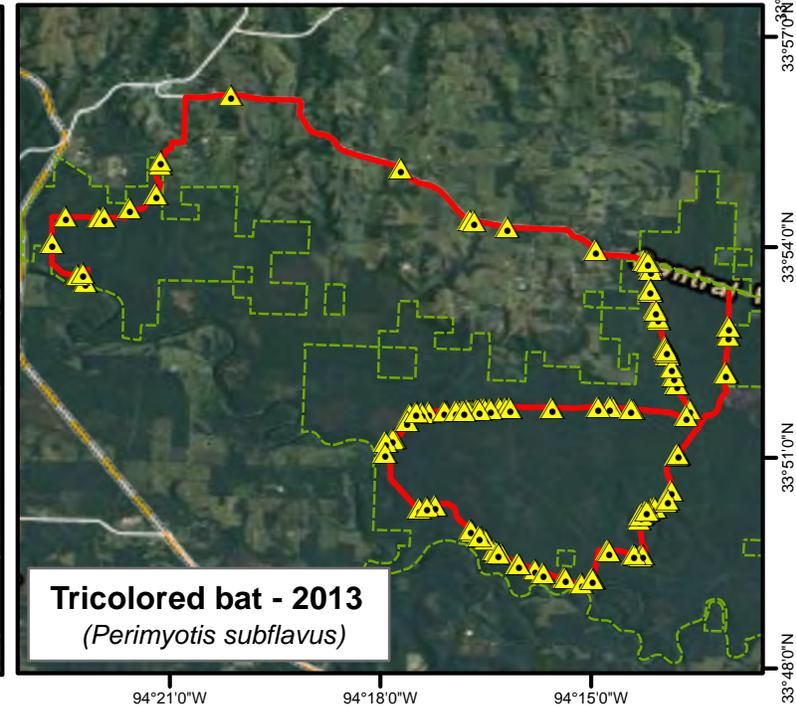
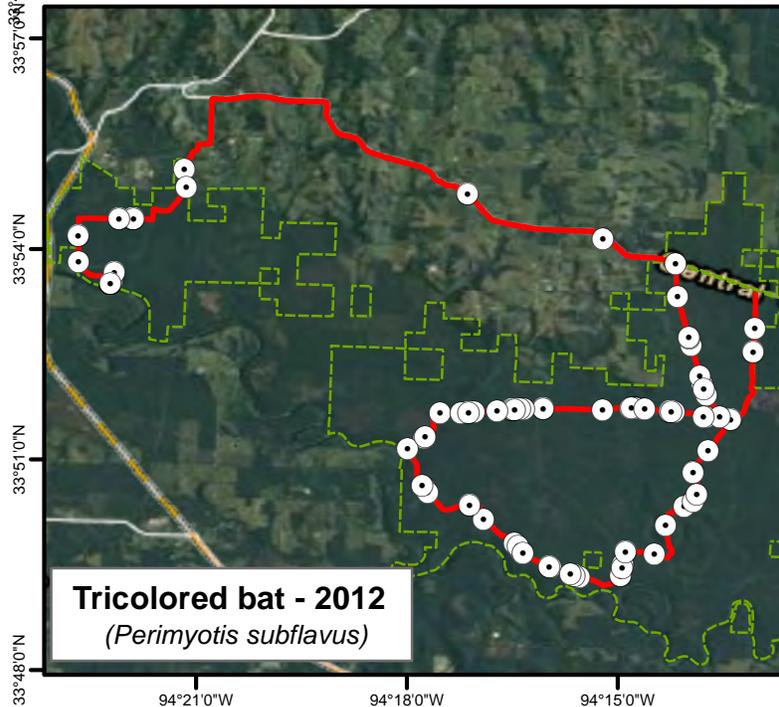
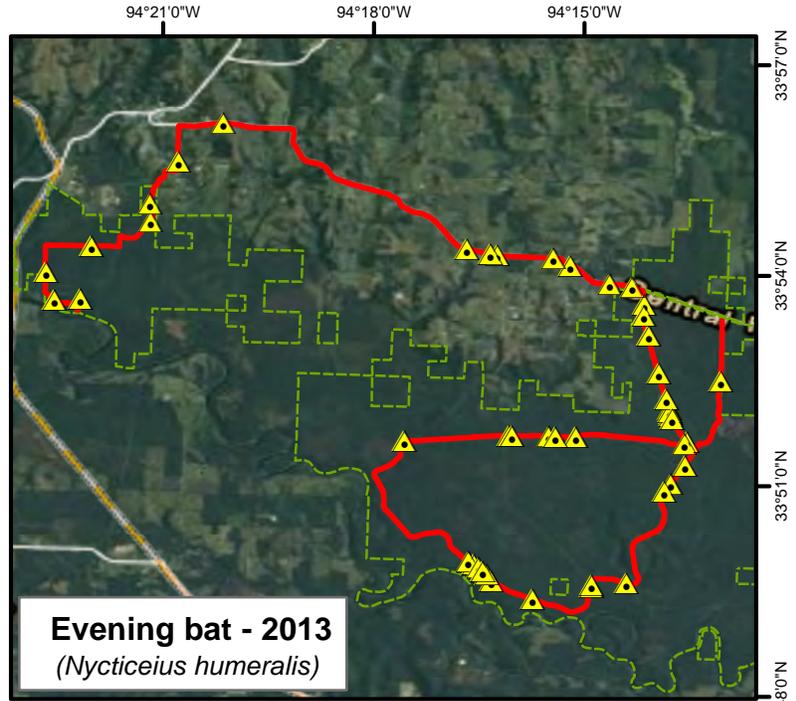
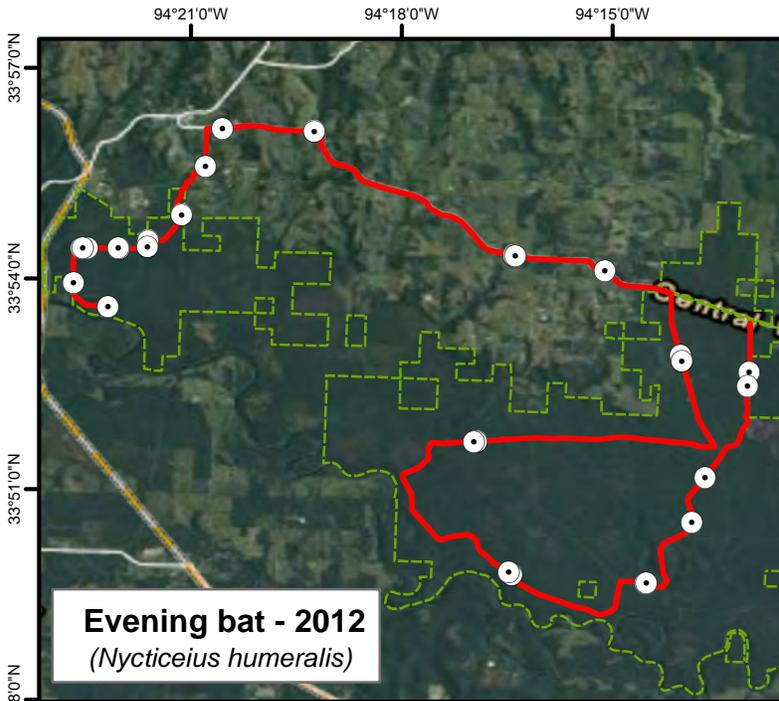
Species locations

- 2013
- 2012
- Transect route
- Refuge boundary





Pond Creek National Wildlife Refuge Bat call locations



Species locations

-  **2013**
-  **2012**
-  **Transect route**
-  **Refuge boundary**

